

# **Doctoral Program**

**Graduate School of Medical and Dental Sciences**

## **Syllabus**

**2 0 2 0**

**Tokyo Medical and Dental University**

# Doctoral Program: Medical and Dental Sciences

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<b>Lecture No</b>	041002				
<b>Subject title</b>	Initial Research Training			<b>Subject ID</b>	
<b>Instructors</b>					
<b>Semester</b>	Spring 2020	<b>Level</b>		<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules. For those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 20.					
<b>Course Purpose and Outline</b>					
Research work should be done in accordance with various rules and regulations including those related to ethics, and those related to handling of toxic substances, radioactive materials and animals. This series of lectures introduce rules and regulations that the students should follow during research work. Also, the students learn how to use libraries and data bases, and how to avoid scientific misconducts.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	4/13	10:00-11:00	ZOOM	Statistical method in designing medical research	SASAKI YOSHIYUKI
2	4/13	11:15-12:15	ZOOM	How to make scientific researches reliable and successful	TAGA TETSUYA
3	4/13	13:30-14:30	ZOOM	APRIN e-learning program (CITI Japan)	YOSHIDA MASAYUKI
4	4/13	14:45-15:45	ZOOM	Use and Handling of Radioisotopes and Radiations	HARA MASAYUKI
5	4/13	16:00-17:00	ZOOM	Literature search*Utilization of library	KINOSHITA ATSUHIRO
6	4/14	10:00-11:00	ZOOM	Thesis Writing and Presenting Research	CANNELL DAVID
7	4/14	11:15-12:15	ZOOM	Flow cytometry for protein analysis	OTEKI TOSHIKI
8	4/14	13:30-14:30	ZOOM	TMDU Bioresource Research Center and Biobank Project on the implementation of precision medicine	TANAKA TOSHIHIRO
9	4/14	14:45-15:45	ZOOM	Environment and safety in research	HANAWA TAKAO
10	4/14	16:00-17:00	ZOOM	Industry-University Cooperation	IIDA KAORI
11	4/15	10:00-11:00	ZOOM	The Design of Animal Experiments	KANAI MASAMI
12	4/15	11:15-12:15	ZOOM	Biosafety and basic microbiological techniques	YAMAOKA SHIYOJI
13	4/15	13:30-14:30	ZOOM	Ethics of Researcher	ISEKI SACHIKO
14	4/15	14:45-15:45	ZOOM	Study of Functional gene and genome	TANAKA TOSHIHIRO
15	4/15	16:00-17:00	ZOOM	Bioethics	YOSHIDA MASAYUKI
<b>Grading System</b>					
Attendance (more than 50%), and achievement of assignments given in the course (less than 50%).					
<b>Prerequisite Reading</b>					
<b>Important Course Requirements</b>					
When you register for “Initial Research Training”, you must Lecture No.041002. If you are the Japanese or the international students who are fluent speakers of Japanese, you should be advised to take part in “Initial Research Training for Japanese” (Lecture No: 041001). those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 20.					

<b>Lecture No</b>	041005				
<b>Subject title</b>	Basic-Clinical Borderless Education	<b>Subject ID</b>			
<b>Instructors</b>	ISEKI SACHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - 3rd year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
For venues and other detailed information, please check the website and bulletin board. For the research progress meeting, the students arrange the venue by themselves.					
<b>Course Purpose and Outline</b>					
This course consists of "course lectures" and "research progress meetings". At the end of the course, understanding and exploring the interrelation between the basic and clinical research is achieved.					
<b>Lecture Style</b>					
Course Lectures and group discussion (research progress meeting)					
• Course Lectures (1st year)					
Students should fill out the attendance sheet at the end of each lecture. The course which you attended the most is regarded as the selected course. Foreign students basically choose English course, but you can choose other course.					
• Group discussion - research progress meeting - (2nd year ~)					
Research progress meeting will start after deciding your research theme and three supervisors. You will receive notification from Educational Planning Section, you arrange the meeting, then submit the report to the administrator. Research progress meeting will be held until complete your thesis. The research report will be the data for grading and for check progress of your research by course officer.					
<b>Course Outline</b>					
<a href="http://www.tmd.ac.jp/archive-tmdu/gakumukikaku/Borderless.pdf">http://www.tmd.ac.jp/archive-tmdu/gakumukikaku/Borderless.pdf</a>					
<b>Grading System</b>					
Evaluation will be given according to the participation in the lecture series and report submission of the research progress meetings. The attendance for the lecture series is required during the first year. The progress of research is different for each, but it is evaluated at the end of the 3rd year (except for long-term Course students). The research progress meeting report needs to be submitted more than twice by the end of 3rd year. (Once a year in the 2nd year and the 3rd year in a principle).					
Course outline is introduced at the first lecture of each lecture series, therefore registered students are asked to attend it.					
<b>Prerequisite Reading</b>					
<b>Note(s) to Students</b>					
In case of postponement of the research progress meeting, consult with the main-supervisor and inform Educational Planning Section. Change of the supervisor shall be discussed with the professor of affiliated section and informed to Educational Planning Section. Research progress meeting is carried out until completion of writing the manuscript.					
<b>Email</b>					
s.iseki.emb@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
On demand (appointment required)					



<b>Lecture No</b>	041007				
<b>Subject title</b>	Overview of Public Health Medicine in Disease Prevention			<b>Subject ID</b>	
<b>Instructors</b>	NAKAMURA KEIKO, IWANAGA Shirou, YAMAOKA SHIYOJI, FUJIWARA Takeo, TAKADA KAZUKI, SEINO KAORUKO, OKADA TAKUYA, ITO TAKASHI, AKITA KEIICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 3rd year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>					
Lectures and all communications are in English.					
<b>Lecture place</b> The lecture classes will be conducted by ZOOM (web remote lecture system). ZOOM ID/PWD will be notified by e-mail from Graduate Education Team 1 to the registered students. Students are required to attend the class on time. However, those who have difficulties to access ZOOM classes on time will be granted to view lecture video on WebClass to complete the course, subject to reporting to the Graduate Education Team 1					
<b>Course Purpose and Outline</b> This course offers a general introduction to public health medicine, addressing fundamental topics and basic measures required for a global leader in disease prevention and data science medicine. The course focuses on development of essential knowledge and skills for global disease prevention and implementation science through lectures and discussions based on selected case studies.					
<b>Course Objective(s)</b> At the end of the course, participants will be able to: 1) Describe the roles and responsibilities of public health in disease prevention 2) Describe development in basic, clinical, and public health research using data science 3) Describe theory and application of implementation medical science 4) Describe the global distribution and causes of major diseases, injuries and health risk factors, and the main prevention and control strategies 5) Describe and apply the basic principles and methods of medical research to disease prevention 6) Describe the main ethical issues in international medical research 7) Describe cross-border health issues in relation to globalization					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	10/27	13:00–16:10	Zoom	Implementation medical science in the context of global health	NAKAMURA KEIKO
2	11/10	13:00–16:10	Zoom	Health promotion	FUJIWARA Takeo
3	11/24	16:00–19:10	Zoom	Prevention and control of communicable disease	YAMAOKA SHIYOJI,
4	12/1	16:00–19:10	Zoom	Prevention and control of non-communicable disease and implementation science	SEINO KAORUKO
5	12/8	16:00–19:10	Zoom	Prevention and control of tropical disease	IWANAGA Shirou
6	12/15	16:00–19:10	Zoom	Prevention and control of cancer	OKADA TAKUYA, ITO TAKASHI
7	1/12	16:20–19:30	Zoom	Leadership	TAKADA KAZUKI
8	1/19	16:00–19:10	Zoom	History of Anatomy and Body donation	AKITA KEIICHI
<b>Lecture Style</b> Lectures, group discussions, and team project. All programs are conducted in English. International students and Japanese students attend the same class and use English in the classroom. Students from the Medical and Dental Science or Biomedical Science departments are both welcome to the course.					
<b>Course Outline</b> As in the a separate table.					
<b>Grading System</b> Grades are based on attendance at lectures, performances during group discussions and team project as well as on assignments, and levels of attitude, skills and knowledge.					
<b>Grading Rule</b>					

Grades are based on attendance at lectures, performances during group discussions and team project as well as on assignments, and levels of attitude, skills and knowledge.

**Prerequisite Reading**

When reading materials are distributed or specified in advance, participants are expected to read those materials beforehand.

**Reference Materials**

To be announced before or during individual classes, when relevant.

**Important Course Requirements**

This is a required course for students of "Disease Prevention Global Leader Program (DP-GLP)". PhD candidates at departments of Medical and Dental Science and Biomedical Science who are enrolled in this program through a special selection must attain credits from this course. This is a required course for students of "TMDU Data Science Medicine Global Leader Program (DS-GLP)". PhD candidates at departments of Medical and Dental Science and Biomedical Science who are enrolled in this program through a special selection must attain credits from this course. PhD candidates of general selection at departments of Medical and Dental Science and Biomedical Science can also participate in this course.

**Note(s) to Students**

Both international and Japanese students participate in the same program provided in English and learn together on public health medicine in disease prevention. The course is a core part of nurturing global leaders in disease prevention and datascience medical research that TMDU provides.

**Instructor's Contact Information**

NAKAMURA KEIKO:Office hours:

Please contact Prof. Keiko Nakamura at [nakamura.ith@tmd.ac.jp](mailto:nakamura.ith@tmd.ac.jp)

<b>Lecture No</b>	041008				
<b>Subject title</b>	Management	<b>Subject ID</b>			
<b>Instructors</b>	TAKEUCHI Katsuyuki, ITAGOSHI Masahiko, IMAMURA Kenn, YOSHINO Hiroshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: Same classes are offered in English on different schedules.					
<b>Lecture place</b> ZOOM					
<b>Course Purpose and Outline</b>					
Course Purpose: Students will acquire a set of basic knowledge and skills of management (project management, career management, business communication, and so on) and will get training so that they apply it to daily medical and research activities.					
Outline: The course provides lectures explaining management skills necessary for students to make success in the medical, research or business world in the future, focusing mainly on project management, career management, and business communication.					
<b>Course Objective(s)</b>					
Students will understand the essence of management skills and acquire basic skills so that they apply it to daily medical and research activities.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	7/9	18:00-19:30	ZOOM	Project Management I	ITAGOSHI Masahiko, TAKEUCHI Katsuyuki
2	7/9	19:40-21:10	ZOOM	Project Management II	ITAGOSHI Masahiko
3	7/16	18:00-19:30	ZOOM	Human Resouce Management	ITAGOSHI Masahiko
4	7/16	19:40-21:10	ZOOM	Career Management	IMAMURA Kenn, TAKEUCHI Katsuyuki
5	9/3	18:00-19:30	ZOOM	Business Communication (Workshop)	ITAGOSHI Masahiko, TAKEUCHI Katsuyuki, YOSHINO Hiroshi
6	9/3	19:40-21:10	ZOOM	Business Communication (Workshop)	ITAGOSHI Masahiko, TAKEUCHI Katsuyuki, YOSHINO Hiroshi
7	9/10	18:00-19:30	ZOOM	Project Design (Workshop)	IMAMURA Kenn, TAKEUCHI Katsuyuki, YOSHINO Hiroshi
8	9/10	19:40-21:10	ZOOM	Project Design (Workshop)	IMAMURA Kenn, TAKEUCHI Katsuyuki, YOSHINO Hiroshi
<b>Lecture Style</b>					
Lectures on the essence of management skills, and workshops for practical skills.					
<b>Grading System</b>					
Participation (60%) and discussion and attitude (40%).					
<b>Prerequisite Reading</b>					
None.					

<b>Lecture No</b>	041009				
<b>Subject title</b>	Management	<b>Subject ID</b>			
<b>Instructors</b>	TAKEUCHI Katsuyuki, ITAGOSHI Masahiko, YOSHINO Hiroshi, OTOMO Kuniko				
<b>Semester</b>	Fall 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: All classes are taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose: Students will acquire a set of basic knowledge and skills of management (project management, career management, business communication, and so on) and will get training so that they apply it to daily medical and research activities.					
Outline: The course provides lectures explaining management skills necessary for students to make success in the medical, research or business world in the future, focusing mainly on project management, career management, and business communication.					
<b>Course Objective(s)</b>					
Students will understand the essence of management skills and acquire basic skills so that they apply it to daily medical and research activities.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	12/10	18:00-19:30	ZOOM	Project Management I	ITAGOSHI Masahiko
2	12/10	19:40-21:10	ZOOM	Project Management II	ITAGOSHI Masahiko
3	12/17	18:00-19:30	ZOOM	Human Resource Management	ITAGOSHI Masahiko
4	12/17	19:40-21:10	ZOOM	Career Management	YOSHINO Hiroshi
5	12/24	18:00-19:30	ZOOM	Business Communication (Workshop)	ITAGOSHI Masahiko
6	12/24	19:40-21:10	ZOOM	Business Communication (Workshop)	ITAGOSHI Masahiko
7	1/14	18:00-19:30	ZOOM or Lecture room 4, M&D Tower 9F	Project Design (Workshop)	OTOMO Kuniko, TAKEUCHI Katsuyuki
8	1/14	19:40-21:10	ZOOM or Lecture room 4, M&D Tower 9F	Project Design (Workshop)	OTOMO Kuniko, TAKEUCHI Katsuyuki
<b>Lecture Style</b>					
Lectures on the essence of management skills, and workshops for practical skills.					
<b>Grading System</b>					
Participation (60%) and discussion and attitude (40%).					
<b>Prerequisite Reading</b>					
None.					
<b>Email</b>					
TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required. Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)					

<b>Lecture No</b>	041010				
<b>Subject title</b>	Global Trends	<b>Subject ID</b>			
<b>Instructors</b>	TAKEUCHI Katsuyuki, NAKAMURA KEIKO, TERASHIMA Sawako, MAKIMOTO Saeda, OKADA Masashi, ONO Masaji, Shohei Shirakami, TAKESHITA Tomoko, ONO Masaji				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st – year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: Same classes are offered in English on different schedules. For those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 20.					
<b>Lecture place</b> Lecture room 4,9F,M&D tower					
<b>Course Purpose and Outline</b> Course Purpose : Students will cultivate their minds and international awareness and develop a broader perspective so that they make a global success in the future, by explaining the world situation and the international affairs that are related with life sciences and by providing a series of multilateral discussions in class. Outline: This course gives lectures on the international affairs mainly of science technology, medicine and health care, industry, environment, economy, and politics, in order to equip students with the basic education and the international awareness so that they make success in medicine, research and business in the future.					
<b>Course Objective(s)</b> The goal is that students enhance their expertise or acquire social understandings that are necessary to develop a new perspective.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	4/23	18:00–19:30	ZOOM	Impacts of Climate Change on Health	ONO Masaji,, TAKEUCHI Katsuyuki,
2	4/30	18:00–19:30	ZOOM	Impacts of Climate Change on Agriculture	OKADA Masashi,
3	5/14	18:00–19:30	ZOOM	Issues over Medical Device Developments	TAKESHITA Tomoko
4	5/21	18:00–19:30	ZOOM	International Trends in Pharmaceutical Industries	Shohei Shirakami,
5	5/28	18:00–19:30	ZOOM	Issues in Medical and Health Policies in OECD Countries	NAKAMURA KEIKO
6	6/4	18:00–19:30	ZOOM	Global Public Health	NAKAMURA KEIKO
7	6/11	18:00–19:30	ZOOM	International Medical Support of Plastic Surgery	TERASHIMA Sawako
8	6/18	18:00–19:30	ZOOM	International Trends of Infectious Disease Control	MAKIMOTO Saeda
<b>Lecture Style</b> The course provides knowledge necessary to understand international affairs and trends concerning science technology, medicine, health care, and so on, and explains the most advanced topics in various areas in order to develop their global perspectives. It basically provides interactive lectures; however, it also introduces group discussions and other styles, depending on the number of students.					
<b>Grading System</b> Participation (60%) and comments in discussions (40%).					
<b>Prerequisite Reading</b> None.					
<b>Important Course Requirements</b> For those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 20.					
<b>Email</b> TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp					
<b>Instructor's Contact Information</b> TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required. Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)					

<b>Lecture No</b>	041011				
<b>Subject title</b>	Global Trends				
<b>Instructors</b>	TAKEUCHI Katsuyuki				
<b>Semester</b>	TBA	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course Purpose and Outline</b>					
Not offered in 2020					
<b>Prerequisite Reading</b>					
<b>Email</b>					
takeuchi.k.mds@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Weekdays only. Advanced appointments are required.					
Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)					

<b>Lecture No</b>	041012					
<b>Subject title</b>	Intellectual Property			<b>Subject ID</b>		
<b>Instructors</b>	TAKEUCHI Katsuyuki, SUGIMITSU Kazunari, KAWASE Makoto, HIRAI Yuki					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1	
<b>Course by the instructor with practical experiences</b>						
Availability in English: All classes are taught in Japanese.						
<b>Lecture place</b>						
Lecture room 4, 9F, M&D tower						
<b>Course Purpose and Outline</b>						
Course Purpose: Students will acquire a basic knowledge of intellectual property necessary to engage in research and business activities.						
Outline: The course gives lectures on the essence of intellectual property that is required to know in research and business activities, such as patents and copyrights. In addition, it gives case studies of intellectual property strategies in research and business activities so that students develop their understanding of intellectual property.						
<b>Course Objective(s)</b>						
The goal is that students acquire a basic knowledge of 'patents' and 'copyrights' and a set of basic skills of the patent search.						
<b>Lecture plan</b>						
No	Day	Time	Venue	Topics	Instructor	
1	10/7	18:00-19:30	Lecture Room4	Rudiments of Patent Law I	HIRAI Yuki, TAKEUCHI Katsuyuki	It will be also held via Zoom at the same time.
2	10/14	18:00-19:30	Lecture Room4	Rudiments of Patent Law II	HIRAI Yuki	It will be also held via Zoom at the same time.
3	10/21	18:00-19:30	Lecture Room4	Rudiments of Patent Law III	HIRAI Yuki	It will be also held via Zoom at the same time.
4	10/28	18:00-19:30	Lecture Room4	Practice of Patent Research	HIRAI Yuki	It will be also held via Zoom at the same time.
5	11/4	18:00-19:30	Lecture Room4	Business and Intellectual Property I	SUGIMITSU Kazunari,	It will be also held via Zoom at the same time.
6	11/11	18:00-19:30	Lecture Room4	Business and Intellectual Property II	SUGIMITSU Kazunari,	It will be also held via Zoom at the same time.
7	11/18	18:00-19:30	Lecture Room4	Basics of Copyright I	KAWASE Makoto, TAKEUCHI Katsuyuki	It will be also held via Zoom at the same time.
8	11/25	18:00-19:30	Lecture Room4	Basics of Copyright II	KAWASE Makoto	It will be also held via Zoom at the same time.
<b>Lecture Style</b>						
Lectures on the basic knowledge of intellectual property, workshops, and case studies.						
<b>Grading System</b>						
Participation (60%), discussion and attitude (20%), and quiz (20%).						
<b>Prerequisite Reading</b>						
None.						
<b>Email</b> TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp						
<b>Instructor's Contact Information</b>						
TAKEUCHI Katsuyuki: Weekdays only. Advanced appointments are required.						
Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)						

<b>Lecture No</b>	041013				
<b>Subject title</b>	English Conversation and Debate (Spring)			<b>Subject ID</b>	
<b>Instructors</b>	ITO NOBUTOSHI, JANELLE RENEE MOROSS				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English : Direction, class group work and all communications are in English. this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 24.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b> English proficiency is essential as a common world language for not only communication but also information dissemination in state-of-the art medical and dental research. In order to become leaders in the international arena, we will use critical thinking skills to discuss current topics, practice the basic skills required to have conversations, and learn how to debate various topics.					
<b>Course Objective(s)</b> At the end of the course, students will have improved skills of: 1) Discussing current health science and cultural topics with more confidence 2) Using the Opinion-Reason-Evidence format for expressing ideas more clearly 3) Understanding and ability to use debate skills 4) Writing format and flow					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	4/28	15:00-16:30	Zoom	Overview of class/Group work & debate basics	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
2	5/12	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
3	5/19	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
4	5/26	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
5	6/2	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
6	6/9	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
7	6/16	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
8	6/23	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
9	6/30	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
10	7/7	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
11	7/14	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
12	7/21	15:00-16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
<b>Lecture Style</b> Pre-reading of weekly topic and viewing of online video In-class group discussion/debate and listening exercises					



Weekly short essay writing assignments
<p><b>Grading System</b></p> <p>Based on class participation (80%) and writing (20%). Students must attend 2/3 of sessions in order to be eligible to pass this course. Those who do attend at least 8 sessions and do not officially drop the course will receive a failing grade.</p>
<p><b>Prerequisite Reading</b></p> <p>Reading materials with links to videos are uploaded to the TMDU intranet system, WebClass. All enrollees are expected to read/watch those materials beforehand and be prepared for class discussion and/or debate. Reading, listening or light research will be required before each session.</p>
<p><b>Reference Materials</b></p> <p>Will be uploaded to WebClass before class.</p>
<p><b>Important Course Requirements</b></p> <p>Students will be expected to arrive to class on time, participate actively and vocally during class discussions, and complete any homework and/or in-class assignments before class begins.     this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 24.</p>
<p><b>Note(s) to Students</b></p> <p>Enrollment is limited to 15 students. If applicants exceed this number, they will be chosen based on their reason for applying and notified before the first class.</p> <p>Please download the application form from the following website and submit to Global Advancement Administrative Unit (global.adm@tmd.ac.jp).  <a href="https://www.tmdu-global.jp/en/events/apply/202004/G-English2020.html">https://www.tmdu-global.jp/en/events/apply/202004/G-English2020.html</a></p> <p>Spring and fall courses have different content.</p>
<p><b>Email</b></p> <p>ITO NOBUTOSHI:ito.str@tmd.ac.jp  JANELLE RENEE MOROSS:jmoross.isc@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b></p> <p>ITO NOBUTOSHI:Weekdays PM.2:00-PM.5:00 M&amp;D Tower 22F Room S2253  JANELLE RENEE MOROSS:Mondays PM 4:00-5:00, Building 1, 4F professor's room</p>

<b>Lecture No</b>	041013				
<b>Subject title</b>	English Conversation and Debate (Fall)			<b>Subject ID</b>	
<b>Instructors</b>	TO NOBUTOSHI, JANELLE RENEE MOROSS				
<b>Semester</b>	Fall 2020	<b>Level</b>	1st – year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English : Direction, class group work and all communications are in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
English proficiency is essential as a common world language for not only communication but also information dissemination in state-of-the-art medical and dental research. In order to become leaders in the international arena, we will use critical thinking skills to discuss current topics, practice the basic skills required to have conversations, and learn how to debate various topics.					
<b>Course Objective(s)</b>					
At the end of the course, students will have improved skills of:					
1) Discussing current health science and cultural topics with more confidence					
2) Using the Opinion–Reason–Evidence format for expressing ideas more clearly					
3) Understanding and ability to use debate skills					
4) Writing format and flow					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	10/20	15:00–16:30	Zoom	Overview of class/Group work & debate basics	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
2	10/27	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
3	11/10	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
4	11/17	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
5	11/24	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
6	12/1	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
7	12/8	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
8	12/15	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
9	1/12	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
10	1/19	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
11	1/26	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
12	2/2	15:00–16:30	Zoom	Discussion/Listening/Debate	JANELLE RENEE MOROSS, WARREN ASHLEY ROBERT
<b>Lecture Style</b>					
Pre-reading of weekly topic and viewing of online video					
In-class group discussion/debate and listening exercises					
Weekly short essay writing assignments					

<p><b>Grading System</b></p> <p>Based on class participation (80%) and writing (20%). Students must attend 2/3 of sessions in order to be eligible to pass this course. Those who do attend at least 8 sessions and do not officially drop the course will receive a failing grade.</p>
<p><b>Prerequisite Reading</b></p> <p>Reading materials with links to videos are uploaded to the TMDU intranet system, WebClass. All enrollees are expected to read/watch those materials beforehand and be prepared for class discussion and/or debate. Reading, listening or light research will be required before each session.</p>
<p><b>Reference Materials</b></p> <p>Will be uploaded to WebClass before class.</p>
<p><b>Important Course Requirements</b></p> <p>Students will be expected to arrive to class on time, participate actively and vocally during class discussions, and complete any homework and/or in-class assignments before class begins.</p>
<p><b>Note(s) to Students</b></p> <p>Enrollment is limited to 15 students. If applicants exceed this number, they will be chosen based on their reason for applying and notified before the first class.</p> <p>Please download the application form from the following website and submit to Global Advancement Administrative Unit (global.adm@tmd.ac.jp).  <a href="https://www.tmdu-global.jp/en/events/apply/202004/G-English2020.html">https://www.tmdu-global.jp/en/events/apply/202004/G-English2020.html</a></p> <p>Spring and fall courses have different content.</p>
<p><b>Email</b></p> <p>ITO NOBUTOSHI:ito.str@tmd.ac.jp  JANELLE RENEE MOROSS:jmoross.isc@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b></p> <p>ITO NOBUTOSHI:Weekdays PM.2:00–PM.5:00 M&amp;D Tower 22F Room S2253  JANELLE RENEE MOROSS:Mondays PM 4:00–5:00, Building 1, 4F professor's room</p>

<b>Lecture No</b>	041014				
<b>Subject title</b>	Presentation in English			<b>Subject ID</b>	
<b>Instructors</b>	ITO NOBUTOSHI, JANELLE RENEE MOROSS				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
<p>Availability in English : Direction, classwork and all communications will be in English. Instructor has basic Japanese skills if needed for communication.</p> <p>For those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 24.</p>					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
<ul style="list-style-type: none"> <li>•In the first four lessons students will learn and practice the basic skills for creating and giving a presentation.</li> <li>• Then, students must make four appointments from the available dates:</li> <li>*For three of these sessions the instructor will assist with revision of presentation slides and script.</li> <li>*In the fourth appointment session, students will give their presentation and practice answering questions.</li> </ul>					
<p>Outline</p> <p>Medical researchers increasingly need to make presentations in English. Thus, it is now vitally important to be able to communicate your thoughts and ideas effectively in this global language. This ability will not only be useful for lab presentations but also for job interviews, international conferences and other situations.</p> <p>This course targets those students who have never presented in English before and want to study abroad, present their research internationally or gain employment in international companies. As for the final presentation topic, students will present their own research or research proposals.</p> <p>Students will also develop their communication skills through discussion and Q &amp; A.</p>					
<b>Course Objective(s)</b>					
<p>At the end of the course, students will have improved the following:</p> <ol style="list-style-type: none"> <li>1) Knowledge of the necessary parts of a presentation</li> <li>2) Creation of a presentation concerning their research, or research proposal</li> <li>3) Ability to formulate questions and answers</li> <li>4) Writing format and flow</li> </ol>					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	4/28	10:30-12:00	Zoom	Overview / Presentation Basics	JANELLE RENEE MOROSS
2	5/12	10:30-12:00	Zoom	Creating a Presentation	JANELLE RENEE MOROSS
3	5/19	10:30-12:00	Zoom	Creating a Presentation	JANELLE RENEE MOROSS
4	5/26	10:30-12:00	Zoom	Creating a Presentation	JANELLE RENEE MOROSS
5	6/2	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
6	6/2	13:00-14:30	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
7	6/9	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
8	6/9	13:00-14:30	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
9	6/16	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS

10	6/16	13:00-14:30	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
11	6/23	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
12	6/23	13:00-14:30	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
13	6/30	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
14	6/30	13:00-14:30	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
15	7/7	10:30-12:00	Zoom	Appointment /creation & feedback	JANELLE RENEE MOROSS
16	7/7	13:00-14:30	Zoom	Final presentation and feedback	JANELLE RENEE MOROSS
17	7/14	10:30-12:00	Zoom	Final presentation and feedback	JANELLE RENEE MOROSS
18	7/14	13:00-14:30	Zoom	Final presentation and feedback	JANELLE RENEE MOROSS

#### Lecture Style

With international conferences, study abroad, and employment in foreign companies in mind this course will provide fundamental skills for presentations using the following four approaches.

1. Interactive lessons with lecture and public speaking practice
2. Peer-evaluation
3. Objective feedback from instructors and peers
4. Individual preparation advice from instructors

#### Grading System

Participation (40%), presentation (40%), question and answer (20%)

**Prerequisite Reading** None

#### Reference Materials

Will be uploaded to the TMDU intranet system WebClass

#### Important Course Requirements

To receive credit for this course, students must attend the first four interactive lecture sessions on the dates stated in the syllabus. After that students must make appointments for four sessions from sessions 5-18 for feedback from instructor(s) regarding presentation creation progress. \*Appointments should be made by filling out the application form found on the website in "Reference URL" below. For those who want to register this subject, please let us(grad01@ml.tmd.ac.jp) know by Monday, April 24.

#### Reference URL

Class size is limited to 15 students in order to provide personalized assistance.

If applicants exceed this number, they will be chosen based on their reason for applying and notified before the first class.

Please download the application form from the following website and submit to Global Advancement Administrative Unit (global.adm@tmd.ac.jp).

<https://www.tmdu-global.jp/en/events/apply/202004/G-English2020.html>

#### Email

ITO NOBUTOSHI:ito.str@tmd.ac.jp

JANELLE RENEE MOROSS:jmoross.isc@tmd.ac.jp

#### Instructor's Contact Information

ITO NOBUTOSHI:Weekdays PM.2:00-PM.5:00 M&D Tower 22F Room S2253

JANELLE RENEE MOROSS: Mondays PM 4:00-5:00, Building 1, 4F professor's room

<b>Lecture No</b>	041015				
<b>Subject title</b>	Biomedical Science	<b>Subject ID</b>			
<b>Instructors</b>	ISHINO FUMITOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
Course purpose: The Bioscience Program offers lectures on several important topics in Molecular Biology, Genetics, Epigenetics, Developmental Biology and Engineering, Cell Biology and Biochemistry. The major purpose of the program is to obtain the latest information on these fields of science and to train scientific mind as well as logical thinking skills necessary to become independent researchers.					
Outline: Molecular mechanisms on several fundamental biological phenomena related to embryonic development, cell differentiation and immune system are introduced and several human diseases due to breakdown of normal regulation, such as genomic imprinting diseases, cancers, immunodeficiency and allergy, will be discussed.					
<b>Course Objective(s)</b>					
Understand useful and critical information from basic to the latest biological sciences and medicine.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	5/29	13:00-15:15	Zoom	Genetics and epigenetics	ISHINO FUMITOSHI
2	6/5	13:00-15:15	Zoom	Epigenetics and mammalian development	RI JIYON
3	6/12	13:00-15:15	Zoom	Developmental origin of health and disease (DOHaD)	SATO NORIKO
4	6/19	13:00-15:15	Zoom	Cellular signaling in development	SHIBUYA HIROSHI, GOTO TOSHIYASU
5	6/26	13:00-15:15	Zoom	Telomere biology and carcinogenesis	Kenkichi Masutomi
6	7/3	13:00-15:15	Zoom	Introduction to the hypoxic response system	NAKAYAMA KO
7	7/10	13:00-15:15	Zoom	Molecular mechanisms of carcinogenesis	NAKANISHI AKIRA
8	7/17	13:00-15:15	Zoom	What is tumor microenvironment?	NAKAYAMA KO
9	8/28	13:00-15:15	Zoom	制御 Post-transcriptional Regulation of Gene Expression	KUROYANAGI HIDEHITO
10	9/4	13:00-15:15	Zoom	Liver formation and diseases	NISHINA HIROSHI
<b>Lecture Style</b>					
Lecture, discussion and presentation.					
<b>Grading System</b>					
Attendance to lectures (80 %) and reports (20 %) are evaluated.					
<b>Prerequisite Reading</b>					
Instruct at first lecture if necessary.					
<b>Exam eligibility</b>					
More than 75% of attendance to the lectures					
<b>Reference Materials</b>					
"EPIGENETICS", C. David Allis et al. Cold Spring Harbor Laboratory Press					
"The immune system" (Third edition), Peter Parham, Garland Science					
Molecular Cell Biology Eighth Edition, Harvey Lodish et al, ISBN-13: 978-1-4641-8339-3					

<b>Lecture No</b>	041016				
<b>Subject title</b>	Advanced Biofunctional Molecules			<b>Subject ID</b>	
<b>Instructors</b>	KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, ITO NOBUTOSHI, IKURA TEIKICHI, FUJII Shinnya, MORI SHUICHI, YUASA MARI, NUMOTO NOBUTAKA, TAGUCHI Junnpei, MASUNO HIROYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> TBA					
<b>Course Purpose and Outline</b>					
Course Purpose: Fundamental knowledge and technology on the functional molecules and the recent topics on their applications will be educated.					
Outline: Various topics related to the functional molecules in the fields of medicinal chemistry, chemical biology, and materials sciences will be discussed, including the presentation by the students. There is some experimental practice.					
<b>Course Objective(s)</b>					
Chemical knowledge and technology is significant in various fields including chemical biology, sensing biology, medicinal chemistry, and materials sciences. This course deals with fundamentals and applications of biofunctional molecules.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	TBA			Recent topics on biofunctional molecules1	KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, NUMOTO NOBUTAKA, MORI SHUICHI
2	TBA			Recent topics on biofunctional molecules2	KAGECHIKA HIROYUKI, IKURA TEIKICHI, NUMOTO NOBUTAKA, YUASA MARI
3	TBA			Recent topics on biofunctional molecules3	KAGECHIKA HIROYUKI, ITO NOBUTOSHI, FUJII Shinnya, MASUNO HIROYUKI
4	TBA			Recent topics on biofunctional molecules4	KAGECHIKA HIROYUKI, ITO NOBUTOSHI, FUJII Shinnya, MASUNO HIROYUKI
5	TBA			Recent topics on biofunctional molecules5	KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, FUJII Shinnya, MASUNO HIROYUKI
6	TBA			Recent topics on biofunctional molecules6	KAGECHIKA HIROYUKI, IKURA TEIKICHI, MORI SHUICHI, YUASA MARI
<b>Lecture Style</b>					
This course includes seminar-type lectures, including the presentation by the students.					
<b>Course Outline</b>					
See the table.					
<b>Grading System</b>					
Attendance (50%) and Presentation or Report (50%)					
<b>Prerequisite Reading</b>					
Fundamental organic chemistry and biochemistry should be reviewed. The books listed in #9 are useful for understanding the topics in this course.					
<b>Reference Materials</b>					
The Practice of Medicinal Chemistry (C. G. Wermuth, D. Aldous, P. Raboisson, D. Rognan eds, Academic Press); Chemical Biology (L. Schreiber, T. Kapoor, G. Wess Eds, WILEY-VCH); The Nuclear Receptors FactsBook (Laudet, V & Gronemeyer, H., Academic Press).					

<b>Lecture No</b>	041017				
<b>Subject title</b>	Development of Functional Molecules			<b>Subject ID</b>	
<b>Instructors</b>	HOSOYA TAKAMITSU, KAGECHIKA HIROYUKI, TAMAMURA HIROKAZU, YOSHIDA SUGURU, FUJII Shinnya, MORI SHUICHI, YUASA MARI, KOBAYAKAWA Takuya, TAGUCHI Junnpei, TSUJI Kouhei				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose: Fundamental knowledge and recent technology on the development (molecular design, synthesis and functional analysis) of functional molecules will be educated.					
Outline: Logical design, synthesis, and analysis for development of functional molecules will be learned, including the presentation by the students.					
<b>Course Objective(s)</b>					
Chemical knowledge and technology is significant in various fields including chemical biology, sensing biology, medicinal chemistry, and materials sciences. This course deals with fundamentals on development of functional molecules based on organic chemistry.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	TBA			Development of Functional Molecules 1	HOSOYA TAKAMITSU, YOSHIDA SUGURU, TAGUCHI Junnpei
2	TBA			Development of Functional Molecules 2	HOSOYA TAKAMITSU, YOSHIDA SUGURU, TAGUCHI Junnpei
3	TBA			Development of Functional Molecules 3	HOSOYA TAKAMITSU, YOSHIDA SUGURU, TAGUCHI Junnpei
4	TBA			Development of Functional Molecules 4	TAMAMURA HIROKAZU, KOBAYAKAWA Takuya, TSUJI Kouhei
5	TBA			Development of Functional Molecules 5	KAGECHIKA HIROYUKI, FUJII Shinnya, MORI SHUICHI, YUASA MARI
<b>Lecture Style</b>					
This course includes seminar-type lectures about organic chemistry.					
<b>Grading System</b> Attendance (50%) and Presentation (50%)					
<b>Prerequisite Reading</b>					
Fundamental organic chemistry should be reviewed. The books listed in #9 are useful for understanding the topics in this course.					
<b>Reference Materials</b> Advanced Organic Chemistry (Francis A. Carey, Richard J. Sundberg, Springer).					
<b>Note(s) to Students</b> The schedule of the lecture may be changed.					
<b>Email</b>					
HOSOYA TAKAMITSU:thosoya.cb@tmd.ac.jp					
KAGECHIKA HIROYUKI:kage.chem@tmd.ac.jp					
FUJII Shinnya:fujii.chem@tmd.ac.jp					
TAGUCHI Junnpei:jtaguchi.cb@tmd.ac.jp					
TSUJI Kouheikttsuji.mr@tmd.ac.jp					
TAMAMURA HIROKAZU:tamamura.mr@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KAGECHIKA HIROYUKI:Every Wednesday and Thursday, AM.10:00-PM.2:00					
Dept. 22nd, 6 F, 609A					
TAMAMURA HIROKAZU:Mon-Fri, 3-5 pm					
Bldg22, Fl6, Rm603B					



<b>Lecture No</b>	041018				
<b>Subject title</b>	Reconstitution Materials Science			<b>Subject ID</b>	
<b>Instructors</b>	HANAWA TAKAO				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
Course Purpose:This course gives the understanding of the usage of metallic biomaterials. Design, manufacturing process, evaluation of metallic biomaterials are also lectured and discussed.					
Outline:This course deals with fundamental characteristics of metals. Design of metallic materials for bio-functionalization and its application are introduced through recent textbooks and papers.					
<b>Course Objective(s)</b>					
This course deals with fundamental characteristics of metals. Design of metallic materials for bio-functionalization and its application are introduced through recent textbooks and papers.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	6/15	18:00-20:15	Zoom	Outline of materials engineering and metals	HANAWA TAKAO
2	6/16	18:00-20:15	Zoom	Phase and crystal structure	ASHIDA MAKI
3	6/17	18:00-20:15	Zoom	Process and mechanical property	ASHIDA MAKI
4	6/22	18:00-20:15	Zoom	Surface and interface of metallic biomaterials	HANAWA TAKAO
5	6/23	18:00-20:15	Zoom	Biosafety, biocompatibility, and surface modification	HANAWA TAKAO
<b>Lecture Style</b> Lectures by instructors, Presentation by students, and Discussion					
<b>Grading System</b>					
Grading is judged from participation and examination during lectures.					
Participation: 60%, Examination: 40%.					
<b>Prerequisite Reading</b>					
Review of basic chemistry and physical chemistry and preparation of metallurgical engineering are desirable.					
<b>Reference Materials</b>					
医療用金属材料概論 = Metals for medicine / 埜隆夫編, 隆夫.: 日本金属学会, 2010					
金属バイオマテリアル / 埜隆夫, 米山隆之共著, 隆夫, 米山, 隆之.: コロナ社, 2007					
Metals for Medical Devices / M. Niinomi ed.: Woodman, 2019					
Textbooks, references, and papers are suggested during lectures.					
<b>Important Course Requirements</b>					
Difficulty and problem in your research must be extracted and prepare to discuss on them are desirable.					
<b>Email</b>					
HANAWA TAKAO:hanawa.met@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
HANAWA TAKAO:16:30-18:00 Mon&Fri 2F,Building 21 Takao Hanawa's lab					

<b>Lecture No</b>	041019				
<b>Subject title</b>	Tissue Regenerative Bioceramic Materials Science			<b>Subject ID</b>	
<b>Instructors</b>	KAWASHITA Masakazu, YOKOI Taishi				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose: This course gives the understanding of the usage of bioceramic materials and bioengineering in clinical field. Fabrication and design process of medical devices are also lectured.					
Outline: This course deals with fundamental characteristics of biomedical ceramic materials and devices. Designing medical devices for realizing novel function and their application are introduced through recent outcome from advanced research field.					
<b>Course Objective(s)</b>					
This course deals with fundamental characteristics of biomedical ceramic materials and devices. Designing medical devices for realizing novel function and their application are introduced through recent outcome from advanced research field.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	6/29	18:00-20:15	Zoom	Introduction to biocearnics	KAWASHITA Masakazu, YOKOI Taishi
2	7/6	18:00-20:15	Zoom	Structure of bioceramics	KAWASHITA Masakazu, YOKOI Taishi
3	7/15	18:00-20:15	Zoom	Synthesis and processing of bioceramics	KAWASHITA Masakazu, YOKOI Taishi
4	7/17	18:00-20:15	Zoom	Bioceramics for bone repair	KAWASHITA Masakazu, YOKOI Taishi
5	7/20	18:00-20:15	Zoom	Bioceramics for cancer therapy	KAWASHITA Masakazu, YOKOI Taishi
<b>Lecture Style</b>					
Lectures by instructors, Presentation by students, and Discussion					
<b>Course Outline</b>					
(1) Introduction to bioceramics					
(2) Structure of bioceramics					
(3) Synthesis and processing of bioceramics					
(4) Bioceramics for bone repair					
(5) Bioceramics for cancer therapy					
<b>Grading System</b>					
Grading is judged from participation and examination during lectures.					
Participation: 60%, Report and/or Examination: 40%.					
<b>Prerequisite Reading</b> none					
<b>Module Unit Judgment</b>					
Seminar room3 at 8F, Building22					
<b>Reference Materials</b>					
Textbooks, references, and papers are suggested during lectures.					
<b>Email</b>					
KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp					
YOKOI Taishi:yokoi.taishi.bcr@tmd.ac.jp					

<b>Lecture No</b>	041020				
<b>Subject title</b>	Organic Biomaterials Science	<b>Subject ID</b>			
<b>Instructors</b>	YUI NOBUHIKO				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose:To offer lectures on several important aspects in supramolecular organic biomaterials, from basis to possible applications. The major purpose of the program is to train scientific mind as well as logical thinking required for independent researchers.					
Outline:Systematic studies on biological responses to organic biomaterials from supramolecular point of views are introduced in order to help scientific logical thinking, and design strategies of future biomaterials will be discussed.					
<b>Course Objective(s)</b>					
Introduce useful information on organic biomaterials from basis to possible applications to attendants.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	5/7	18:30-20:45	Zoom	Synthesis and processing of organic biomaterials	TAMURA ATSUSHI
2	5/11	18:30-20:45	Zoom	Oganic biomaterials for advanced medicine 1	TAMURA ATSUSHI
3	5/14	18:30-20:45	Zoom	Organic biomaterials for advanced medicine 2	ARISAKA YOSHINORI
4	5/19	18:30-20:45	Zoom	Basis of organic biomaterials	YUI NOBUHIKO
5	5/26	18:30-20:45	Zoom	Interaction of organic biomaterials with living body	YUI NOBUHIKO
<b>Lecture Style</b>					
Lecture, discussion and presentation					
<b>Grading System</b>					
Participation to lectures (50 %) and question during the class (50 %) are evaluated.					
<b>Prerequisite Reading</b>					
Previous credits on Advanced Biomaterials Science and Applied Biomaterials Science or the equal academic level is required (preferable) .					
<b>TextBook</b>					
Biomaterials Science : An Introduction to Materials in Medicine / edited by Buddy D. Ratner ... [et al.], Ratner, B. D. (Buddy D.), Hoffman, Allan S., Schoen, Frederick J., Lemons, Jack E., : Academic Press, 2013					
<b>Reference Materials</b>					
Advice appropriately.					
<b>Email</b>					
YUI NOBUHIKO:yui.org@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
YUI NOBUHIKO:mostly every Wednesday 15:00-16:00 at Room #509A, 5th floor, 21st Building					

<b>Lecture No</b>	041021				
<b>Subject title</b>	Medical Materials Engineering	<b>Subject ID</b>			
<b>Instructors</b>	KISHIDA AKIO				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose:This course gives the understanding of the usage of biomaterials in clinical field. Fabrication and design process of medical devices are also lectured					
Outline:This course deals with fundamental characteristics of medical materials and devices. Designing medical devices for realizing novel function and their application are introduced through recent outcome from advanced research field.					
<b>Course Objective(s)</b>					
The goal of this course is to understand how novel medical devices should be developed.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	5/8	16:00-18:15	Zoom	Planning for development of biomaterials	KISHIDA AKIO
2	5/11	14:00-16:15	Zoom	Artificial and Natural biomaterials	KISHIDA AKIO
3	5/18	14:00-16:15	Zoom	Tissue-engineered materials	HASHIMOTO YOSHIIHIDE
4	5/25	14:00-16:15	Zoom	Biological response for biomaterials	KIMURA TSUYOSHI
5	6/1	14:00-16:15	Zoom	Medical device regulation	KIMURA TSUYOSHI
<b>Lecture Style</b>					
Lecture, discussion and presentation					
<b>Grading System</b>					
Attendance to lectures (80 %) and reports (20 %) are evaluated.					
<b>Prerequisite Reading</b>					
Basic knowledge on Materials, Physio-Chemsitry and immunology is required (preferable) .					
<b>Reference Materials</b>					
バイオマテリアル : その基礎と先端研究への展開／田畑泰彦, 埴隆夫編著,田畑, 泰彦,埴, 隆夫,岡野, 光夫,明石, 満.:東京化学同人, 2016					
Biomaterials science : an introduction to materials in medicine./edited by Buddy D. Ratner ... [et al.],Ratner, B. D. (Buddy D.),Hoffman, Allan S.,Schoen, Frederick J.,Lemons, Jack E.,:Academic Press, 2013					
<b>Email</b>					
KISHIDA AKIO:kishida.mbme@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KISHIDA AKIO:Basically, available time is 10:00am-5:00pm Monday to Friday. Building No.21, 2nd floor, 201A room.					

<b>Lecture No</b>	041022				
<b>Subject title</b>	Mathematical and numerical methods for biomedical information analysis	<b>Subject ID</b>			
<b>Instructors</b>	NAKAJIMA Yoshikazu				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: If an/some international students register this lecture series for credits, this course will be done in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b> Technologies for biomedical measurement and diagnosis are improved rapidly. It highlights expectation for integrative analyses of biomedical information and establishment of numerical computing theory. The lecture classes will provide principles, which are needed to research and develop systems, and introduce advanced applications.					
<b>Course Objective(s)</b> The students will understand principle methods for biomedical informatics and data processing. In addition, they will learn advanced technologies.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	5/11	09:45-12:00	Zoom	Mathematical and statistical analyses for medical data 1	NAKAJIMA Yoshikazu
2	5/18	09:45-12:00	Zoom	Mathematical and statistical analyses for medical data 2	NAKAJIMA Yoshikazu
3	5/25	09:45-12:00	Zoom	Artificial intelligence analysis for medical data 1	SUGINO Takaaki
4	6/1	09:45-12:00	Zoom	Artificial intelligence analysis for medical data 2	SUGINO Takaaki
5	6/8	14:00-16:15	Zoom	Biological signal processing and its applications on medical and rehabilitation engineering 1	KAWASE Toshihiro
6	6/15	14:00-16:15	Zoom	Biological signal processing and its applications on medical and rehabilitation engineering 2	KAWASE Toshihiro
<b>Lecture Style</b> Lecture and discussion					
<b>Course Outline</b> The lecture series will introduce statistical analyses, mathematical and numerical simulations and artificial-intelligence (AI) analyses for biomedical information. In addition, it will introduce fundamental methods to develop medical systems, as well.					
<b>Grading System</b> Class attendance, contribution for the lecture such as question and comments, and report quality will be considered on the assessment.					
<b>Grading Rule</b> The grade will consider class attendance and performance (50%) and reports (50%).					
<b>Prerequisite Reading</b> The students having this lecture will be required to study fundamental knowledge of mathematics to understand statistic analyses and data processing. Details will be introduced at the lecture guidance in the first class. As well, some introductions will be shown when necessary.					
<b>Exam eligibility</b> No restriction.					
<b>Composition Unit</b> Yoshikazu Nakajima, Takaaki Sugino, Toshihiro Kawase					
<b>Module Unit Judgment</b> Grading will be done with the comprehensive consideration of lecture attendance and report quality.					
<b>TextBook</b> Handout will be provided if necessary.					
<b>Reference Materials</b> Handouts will be provided if necessary.					
<b>Important Course Requirements</b> Nothing.					
<b>Note(s) to Students</b> Nothing.					
<b>Email</b> NAKAJIMA Yoshikazu:nakajima.bmi@tmd.ac.jp					
<b>Instructor's Contact Information</b> NAKAJIMA Yoshikazu:15:00-16:30 on every Monday at Room 408A on the 4th floor, Building 21, Surugadai campus					

<b>Lecture No</b>	041023				
<b>Subject title</b>	RIKEN Molecular and Chemical Somatology			<b>Subject ID</b>	
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>					
Availability in English:When non-Japanese students register this course, English will be used in all of the lectures.					
<b>Course Purpose and Outline</b>					
Course Purpose:Students aim to understand the basis of Cellular Pathology, Therapeutic in vivo Synthetic Chemistry, Molecular Immunology,and Molecular Neuropathology, as well as their applications to Medicine and Biology by discussing about a variety of biomolecules, including proteins, sugars, and hormones, which regulate cellular functions.					
Outline:Molecular and Chemical Somatology is an interdisciplinary field for understanding the basis of Cellular Pathology, Therapeutic in vivo Synthetic Chemistry, Molecular Immunology, and Molecular Neuropathology, as well as their applications to Medicine and Biology. Students will learn and discuss about the outlines and/or the latest topics on key biomolecules in each lecture, and are expected to deepen their understanding of various biomolecules.					
<b>Course Objective(s)</b>					
Students will learn and discuss about the latest topics from each instructor.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	6/25	09:45-12:00	Seminar Room, Center for Brain Science: Central Building, RIKEN Wako	Neuro-molecular signaling	Krzyzanowski Marek Konrad
2	6/25	13:00-15:15	Rm S310, Biosci bldg, RIKEN Wako	Plant Chemical Regulation	Kazuko Yoshida
3	6/25	15:30-17:45	Rm S310, Biosci bldg, RIKEN Wako	Therapeutic In Vivo Synthetic Chemistry	Katsunori Tanaka
4	9/1	09:45-12:00	C206) Rm C206, Central Res bldg 2F, RIKEN Yokohama	Biomacromolecular engineering	Shunsuke Tagami
5	9/1	13:00-15:15	Discussion Room, North bldg 3F, IMS, RIKEN Yokohama	Immune Molecular Regulation-1	Ichiroh Taniuchi
6	9/1	15:30-17:45	Discussion Room, North bldg 3F, IMS, RIKEN Yokohama	Immune Molecular Regulation-2	YOSHIDA Hideyuki
7	9/3	13:00-15:15	5F Seminar Room, Center for Brain Science: Central Building, RIKEN Wako	Molecular Neuropathology	Motomasa Tanaka
8	9/3	15:30-17:45	5F Seminar Room, Center for Brain Science: Central Building, RIKEN Wako	Molecular Neurobiology	Ryo Endoh
9	9/10	13:00-15:15	Rm424/426, Main Res bldg, RIKEN Wako	Molecular Basis of Chemical Senses	Nobuhiko Miyasaka
10	9/10	15:30-17:45	Rm424/426, Main Res bldg, RIKEN Wako	Cell adhesion molecules	Yutaka Furutani
<b>Lecture Style</b>					
Lectures by instructors, Presentation by students, and Discussion					
<b>Grading System</b> Attendance (40%) and Report (60%)					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b>					
Fundamentals of Protein Structure and Function (Buxbaum and Engelbert, Springer)					
Neuroscience: Exploring the Brain 4th Edition (Mark F. Bear, Barry Connors and Mike Paradiso, Wolters Kluwer)					
<b>Important Course Requirements</b>					
All the lectures will be held at RIKEN.					

<b>Lecture No</b>	041024				
<b>Subject title</b>	Integrative Biomedical Sciences for Preemptive Medicine I			<b>Subject ID</b>	
<b>Instructors</b>	ISHIKAWA KINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Course Purpose and Outline</b>					
<b>【Course Purpose】</b>					
To understand the basic concepts of integrative biomedical sciences for preemptive medicine, a learning system for preemptive medicine that enables prevention of diseases by collecting omics information such as genome information, information about environmental factors, clinical information and lifestyle information, discovering the factors and mechanism involved in diseases including cancer and lifestyle-related diseases, developing the predictive models and instructing/intervening in individuals.					
<b>【Outline】</b>					
To understand the following topics: the biological process from the healthy state to disease onset, the basic relationship between the genetic factors and environmental factors/epigenetics, the basic concepts regarding acquiring methods of omics and biological information, the method to estimate the risk of developing diseases, the basic method for instruction or intervention, ethics and genetic counseling.					
<b>Course Objective(s)</b>					
This course will provide a broad-based education that helps to develop a comprehensive overview of the field of Integrative Biomedical Sciences for Preemptive Medicine.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	8/6	10:00-11:30	Zoom	先制医療や個別化医療の概念、健康から病気に至る過程及び指導介入	ISHIKAWA KINYA
2	8/7	15:30-17:00	Zoom	オミックスデータに基づく健康管理アルゴリズム構築の基礎	TSUNODA TATSUHIKO
3	8/18	13:30-17:00	Zoom	ビッグデータとAIによる医療	TANAKA Hiroshi
4	8/19	13:30-15:00	Zoom	先制医療のためのバイオバンク構築とオミックスプロファイリング、バイオバンク見学	TANAKA TOSHIHIRO
5	8/21	15:30-17:00	Zoom	リポドミクスと生体試料取り扱いのピットフォール	OKAWA RYUNOSUKE
6	8/24	17:30-19:00	Zoom	社会環境要因データと疾病予測モデル	NAKAMURA KEIKO
7	8/25	15:30-17:00	Zoom	生体情報モニタリングデバイスの基礎	MITSUBAYASHI KOJI
8	8/28	13:00-14:30	Zoom	未定	ISHIKAWA KINYA
<b>Lecture Style</b>					
The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.					
<b>Grading System</b>					
Participation (50%), question and answer (20%), and reports (30%).					
<b>Prerequisite Reading</b>					
None.					
<b>Reference Materials</b>					
None.					
<b>Important Course Requirements</b>					
None.					
<b>Note(s) to Students</b>					
This is compulsory elective course for Integrative Biomedical Sciences Programs for Preemptive Medicine students. Enrollment will be limited, with priority given to the course students.					

<b>Lecture No</b>	041025				
<b>Subject title</b>	Integrative Biomedical Sciences for Preemptive Medicine I			<b>Subject ID</b>	
<b>Instructors</b>	ISHIKAWA KINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Lectures and all communications are in English.					
<b>Course Objective(s)</b>					
This course will provide a broad-based education that helps to develop a comprehensive overview of the field of Integrative Biomedical Sciences for Preemptive Medicine.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	11/9	11:00-12:30	Zoom	Introduction	ISHIKAWA KINYA
2	11/9	13:00-14:30	Zoom	Concepts of preemptive medicine and	ISHIKAWA KINYA
3	11/16	10:30-12:00	Zoom	The basics to develop the health management algorit	TSUNODA TATSUHIKO
4	11/17	10:30-12:00	Zoom	Medicine based on Big Data and AI	TANAKA Hiroshi
5	11/25	10:30-12:00	Zoom	Establishment of biobanks for	TANAKA TOSHIHIRO
6	11/26	10:30-12:00	Zoom	Pitfalls of sample handling and lipidomics	OKAWA RYUNOSUKE
7	11/30	17:30-19:00	Zoom	Use of data science and information technology to advance global public health	NAKAMURA KEIKO
8	12/1	13:00-14:30	Zoom	TBA	ISHIKAWA KINYA
<b>Lecture Style</b>					
The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.					
<b>Grading System</b>					
Participation (50%), question and answer (20%), and reports (30%).					
<b>Prerequisite Reading</b>					
None.					
<b>Note(s) to Students</b>					
This is compulsory elective course for Integrative Biomedical Sciences Programs for Preemptive Medicine students. Enrollment will be limited, with priority given to the course students.					



<b>Lecture No</b>	041026				
<b>Subject title</b>	Integrative Biomedical Sciences for Preemptive Medicine II	<b>Subject ID</b>			
<b>Instructors</b>	ISHIKAWA KINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Course Purpose and Outline</b>					
<b>【Course Purpose】</b>					
To widely understand the applications for integrative biomedical sciences for preemptive medicine, a learning system for preemptive medicine that enables prevention of diseases by collecting omics information such as genome information, information about environmental factors, clinical information and lifestyle information, discovering the factors and mechanism involved in diseases such as cancer and lifestyle related diseases, developing the predictive models and instructing/intervening in individuals.					
<b>【Outline】</b>					
To learn the following case examples, instruction, and intervention: utilization of the practical health/medical information to promote preemptive medicine and individualized medicine, advanced omics experiment/analysis methods using the next-generation sequencers, topics about the development story of biological information sensing such as wearable mobile, utilization of analytical technologies including AI.					
<b>Course Objective(s)</b>					
This course will provide a broad-based education that helps to develop a comprehensive overview of the field of disease prevention sciences.					
<b>Lecture Style</b>					
The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.					
<b>Grading System</b>					
Participation (50%), question and answer (20%), and reports (30%).					
<b>Prerequisite Reading</b>					
None.					
<b>Reference Materials</b>					
None.					
<b>Important Course Requirements</b>					
None.					
<b>Note(s) to Students</b>					
This is compulsory elective course for Integrative Biomedical Sciences Programs for Preemptive Medicine students. Enrollment will be limited, with priority given to the course students.					
We will inform the students who registered these lectures as soon as the date, time and venue have been decided upon conclusively.					

<b>Lecture No</b>	041027				
<b>Subject title</b>	Data Science I	<b>Subject ID</b>			
<b>Instructors</b>	TAKEUCHI Katsuyuki, ASAKURA Nobuhiko				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Lecture place</b>					
Active Learning Room,4F,M&D tower					
<b>Course Purpose and Outline</b>					
Course Purpose : Students will acquire the essence of statistics that is necessary to learn data science as its basis.					
Outline : This course gives lectures on the theoretical frameworks of the basic statistics that is the basis of data analysis methods.					
<b>Course Objective(s)</b>					
The goal is that students become able to have an image of an error (a probabilistic phenomenon) in data, to explain the hypothesis testing as a means of detecting an object of interest in the data with errors from the image they have, and to perform the statistical analysis that is appropriate for their purpose.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	6/5	18:00-19:30	Zoom	An overview of probability and statistics	ASAKURA Nobuhiko, TAKEUCHI Katsuyuki
2	6/5	19:40-21:10	Zoom	Signal detection theory	ASAKURA Nobuhiko
3	6/12	18:00-19:30	Zoom	analysis	ASAKURA Nobuhiko
4	6/12	19:40-21:10	Zoom	Statistical tests	ASAKURA Nobuhiko
5	6/19	18:00-19:30	Zoom	Correlation	ASAKURA Nobuhiko
6	6/19	19:40-21:10	Zoom	Linear regression	ASAKURA Nobuhiko
7	6/26	18:00-19:30	Zoom	Generalized linear model	ASAKURA Nobuhiko
8	6/26	19:40-21:10	Zoom	Principle component analysis and factor analysis	ASAKURA Nobuhiko
<b>Lecture Style</b>					
The course lectures will be held only on Saturday.					
<b>Grading System</b>					
Participation (60%), discussion (20%), and assignments (20%)					
<b>Prerequisite Reading</b>					
None.					
<b>Note(s) to Students</b>					
This is a compulsory elective course for students in the Integrative Biomedical Sciences Programs for Preemptive Medicine. Other students can attend this course as long as seats are available, but the course students are given priority over others.					
<b>Email</b>					
TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.					
Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)					

<b>Lecture No</b>	041028				
<b>Subject title</b>	Data Science I	<b>Subject ID</b>			
<b>Instructors</b>	TAKAHASHI Kunihiro				
<b>Semester</b>	Fall 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English					
<b>Course Purpose and Outline</b>					
Course Purpose: Students will acquire the essence of statistics/biostatistics that is necessary to learn data science as its basis.					
Outline: This course gives lectures on the theoretical frameworks of the basic statistics/biostatistics that is the basis of data analysis methods.					
<b>Course Objective(s)</b>					
The goal is that students become able to have an image of an error (a probabilistic phenomenon) in data, to explain the hypothesis testing as a means of detecting an object of interest in the data with errors from the image they have, and to perform the statistical analysis that is appropriate for their purpose.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	11/5	14:30-16:00	Zoom	Concept of statistical inference for data science	TAKAHASHI Kunihiro
2	11/5	16:10-17:40	Zoom	Comparing groups - categorical data	TAKAHASHI Kunihiro
3	11/19	14:30-16:00	Zoom	Comparing groups - continuous data	TAKAHASHI Kunihiro
4	11/19	16:10-17:40	Zoom	Correlation and regression	TAKAHASHI Kunihiro
5	12/3	14:30-16:00	Zoom	Generalized linear model	TAKAHASHI Kunihiro
6	12/3	16:10-17:40	Zoom	Survival analysis	TAKAHASHI Kunihiro
7	12/17	14:30-16:00	Zoom	Classification and prediction	TAKAHASHI Kunihiro
8	12/17	16:10-17:40	Zoom	Multivariate methods in data science	TAKAHASHI Kunihiro
<b>Lecture Style</b>					
Lectures on data sciences, mainly statistics/biostatistics.					
<b>Grading System</b>					
Participation (60%), discussion and reports (40%).					
<b>Prerequisite Reading</b>					
Those who feel anxious about math are encouraged to personally learn it with introductory textbooks on statistics.					
<b>Note(s) to Students</b>					
This is a compulsory elective course for students in the Integrative Biomedical Sciences Programs for Preemptive Medicine. Other students can attend this course as long as seats are available, but the course students are given priority over others.					
<b>Email</b>					
biostat.dsc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Weekdays only. Advanced appointments are required.					
Contact to Department of Biostatistics, M&D Data Science Center (E-mail: biostat.dsc@tmd.ac.jp).					

<b>Lecture No</b>	041029				
<b>Subject title</b>	Data Science II	<b>Subject ID</b>			
<b>Instructors</b>	TAKEUCHI Katsuyuki, MOGUSHI Kaoru, HASE Takeshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
Course Purpose: R (programming language) is an essential tool for statistical analysis, analysis using machine learning, and other analyses. Students will acquire a programming skill of R and learn methods of statistical analysis and machine learning.					
Outline: This course gives lectures on the basic skills that are necessary to use statistical analysis and machine learning, through practical data analysis using R.					
<b>Course Objective(s)</b>					
The goal is that students acquire the basic knowledge of the programming skill of R and statistical analysis and machine learning so that they can analyse data by means of the basic methods of statistical analysis and machine learning using R.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	8/29	13:00-14:30	Zoom	Basic operation of R language	MOGUSHI Kaoru, TAKEUCHI Katsuyuki
2	8/29	14:40-16:10	Zoom	Data handling and visualization	MOGUSHI Kaoru
3	9/5	13:00-14:30	Zoom	Statistical analytics I	MOGUSHI Kaoru
4	9/5	14:40-16:10	Zoom	Statistical analytics II	MOGUSHI Kaoru
5	9/12	13:00-14:30	Zoom	Statistical analytics III	MOGUSHI Kaoru
6	9/12	14:40-16:10	Zoom	Unsupervised learning	HASE Takeshi
7	9/19	13:00-14:30	Zoom	Supervised learning (classification)	HASE Takeshi
8	9/19	14:40-16:10	Zoom	Supervised learning (regression)	HASE Takeshi
9	9/26	13:00-14:30	Zoom	Feature engineering I	HASE Takeshi
10	9/26	14:40-16:10	Zoom	Feature engineering II	HASE Takeshi
<b>Lecture Style</b>					
The course gives both lectures and practices. The course lectures will be held only on Saturday.					
<b>Grading System</b>					
Participation (60%) and assignments (40%)					
<b>Prerequisite Reading</b>					
Students are encouraged to attend "Data Science I".					
<b>Reference Materials</b>					
N. Toyama, & M. Tsujitani (2015) Jissen R Toukei Bunseki. Ohmsha. ISBN 978-4-274-21751-7					
<b>Note(s) to Students</b>					
This is a compulsory elective course for students in the Integrative Biomedical Sciences Programs for Preemptive Medicine. Other students can attend this course as long as seats are available, but the course students are given priority over others.					

<b>Lecture No</b>	041030				
<b>Subject title</b>	Data Science II			<b>Subject ID</b>	
<b>Instructors</b>	TAKEUCHI Katsuyuki, MOGUSHI Kaoru, HASE Takeshi				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: All classes are taught in English.					
<b>Lecture place</b>	PC room1				
<b>Course Purpose and Outline</b>					
Course Purpose:					
R (programming language) is an essential tool for statistical analysis, analysis using machine learning, and other analyses. Students will acquire a programming skill of R and learn methods of statistical analysis and machine learning.					
Outline:					
This course gives lectures on the basic skills that are necessary to use statistical analysis and machine learning, through practical data analysis using R.					
<b>Course Objective(s)</b>					
The goal is that students acquire the basic knowledge of the programming skill of R and statistical analysis and machine learning so that they can analyse data by means of the basic methods of statistical analysis and machine learning using R.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructors
1	4/25	13:00-14:30	PC room1	Basic operation of R language	TAKEUCHI Katsuyuki, MOGUSHI Kaoru
2	4/25	14:40-16:10	PC room1	Data handling and visualization	MOGUSHI Kaoru
3	5/2	13:00-14:30	PC room1	Statistical analytics I	MOGUSHI Kaoru
4	5/2	14:40-16:10	PC room1	Statistical analytics II	MOGUSHI Kaoru
5	5/9	13:00-14:30	PC room1	Unsupervised learning	HASE Takeshi
6	5/9	14:40-16:10	PC room1	Supervised learning (classification)	HASE Takeshi
7	5/16	13:00-14:30	PC room1	Supervised learning (regression)	HASE Takeshi
8	5/16	14:40-16:10	PC room1	Feature engineering	HASE Takeshi
<b>Lecture Style</b>					
The course gives both lectures and practices.					
<b>Grading System</b>					
Participation (60%) and assignments (40%)					
<b>Prerequisite Reading</b>					
Students are encouraged to attend "Data Science I".					
<b>Email</b>					
TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.					
Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)					

<b>Lecture No</b>	041031				
<b>Subject title</b>	Epidemiology			<b>Subject ID</b>	
<b>Instructors</b>	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st – year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose					
This course introduces the principles and methods used in epidemiologic research.					
Outline					
This course is a lesson to learn the basics of the Clinical Statistics and Bioinformatics Graduate Program of the Integrative Biomedical Sciences Programs for Preemptive Medicine aiming at the training of personnel who can promote precision medicine.					
Epidemiology is defined as the study of the causes and distribution of health-related states or events in specified populations, and the application of this knowledge to control those health problems.					
Throughout the course we will focus on conceptual and practical issues in the design, conduct, and analysis of epidemiologic studies for description and causal inference.					
<b>Course Objective(s)</b>					
By the end of this course, students will be able to:					
a) Describe and calculate measures of disease frequency and measures of effect.					
b) Explain main types of epidemiologic study, and discuss appropriate design to use in a given situation.					
c) Explain potential biases in epidemiologic study and how to deal with these biases, and control confounding by stratifying data.					
d) Explain how epidemiology can be applied to evaluate health policy, investigate infectious diseases and genetic factors with examples.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructor
1	6/22	08:50–10:20	G-Lab	Lecture: Measurement	FUJIWARA Takeo
2	6/22	10:30–12:00	G-Lab	Lecture: Measurement	FUJIWARA Takeo
3	6/22	13:00–14:30	G-Lab	Case and group activity: Measurement	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
4	6/22	14:40–16:10	G-Lab	Case and group activity: Measurement	FUJIWARA Takeo NAWA Nobutoshi, MORITA AYAKO, TANI Yukako MATSUYAMA Yuusuke
5	6/23	08:50–10:20	G-Lab	Lecture: Confounding	FUJIWARA Takeo
6	6/23	10:30–12:00	G-Lab	Lecture: Confounding	FUJIWARA Takeo
7	6/23	13:00–14:30	G-Lab	Case and group activity: Confounding	UJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
8	6/23	14:40–16:10	G-Lab	Case and group activity: Confounding	UJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
9	6/25	08:50–10:20	G-Lab	Lecture: Causal inference 1,2	Jaxie Yang, FUJIWARA Takeo
10	6/25	10:30–12:00	G-Lab	Lecture: Causal inference 1,2	Jaxie Yang, FUJIWARA Takeo
11	6/25	13:00–14:30	G-Lab	Lecture: Causal inference 3,4	Jaxie Yang, FUJIWARA Takeo
12	6/25	14:40–16:10	G-Lab	Lecture: Causal inference 3,4	Jaxie Yang, FUJIWARA Takeo
13	6/26	08:50–10:20	G-Lab	Lecture: Causal inference 5,6	Jaxie Yang, FUJIWARA Takeo
14	6/26	10:30–12:00	G-Lab	Lecture: Causal inference 5,6	Jaxie Yang, FUJIWARA Takeo

15	6/26	13:00-14:30	G-Lab	Lecture: Causal inference 7,8	Jaxie Yang, FUJIWARA Takeo
16	6/26	14:40-16:10	G-Lab	Lecture: Causal inference 7,8	Jaxie Yang, FUJIWARA Takeo
<b>Lecture Style</b>					
This course will consist of lectures and case-based class activities. Students will be required to write a final report.					
<b>Grading System</b>					
Grades will be based on the following elements:					
Participation 20%					
In class quizzes 30%					
Final paper 50%					
<b>Prerequisite Reading</b>					
Reading materials will be available online at the course webpage. Students are expected to have worked thorough the materials before attending the corresponding class.					
<b>Reference Materials</b>					
Gordis L. Epidemiology: with student consult. 5th edition. Philadelphia: Elsevier, 2013					
<b>Important Course Requirements</b>					
Chief instructor's permission is required before registering to the course.					
<b>Instructor's Contact Information</b>					
FUJIWARA Takeo:Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp					

<b>Lecture No</b>	041032				
<b>Subject title</b>	Clinical Biostatistics and Statistical Genetics			<b>Subject ID</b>	
<b>Instructors</b>	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st – year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose					
This course introduces the basic techniques important for analyzing data from epidemiologic, biomedical and other public health related research. Statistical reasoning will be emphasized through problem solving and practical applications.					
Outline					
This course is a lesson to learn the basics of the Clinical Statistics and Bioinformatics Graduate Program of the Integrative Biomedical Sciences Programs for Preemptive Medicine aiming at the training of personnel who can promote precision medicine.					
Clinical Biostatistics and Statistical Genetics is the application of statistical methods to data in biological, biomedical and health sciences. It is a key technique for the collection, analysis, and presentation of data especially in quantitative studies including epidemiological studies.					
Throughout the seminar, we will review the broad field of statistical data analysis and the range of issues that arise when analyzing health data. We will read and discuss selected chapters from a textbook and apply statistical methods to wide range of quantitative study questions.					
<b>Course Objective(s)</b>					
By the end of this course, students will be able to:					
a) Learn to acquire clinical data.					
b) Learn to build algorithm for healthcare.					
c) Conduct basic statistical techniques both by hand and using a statistical software, and present results using publication quality tables.					
d) Describe results of statistical analysis using standard statistical expressions.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	Instructors
1	6/1	08:50-10:20	Zoom	Lecture: Data presentation; Numerical summary measures	MORITA AYAKO
2	6/1	10:30-12:00	Zoom	Lecture: Data presentation; Numerical summary measures	MORITA AYAKO
3	6/2	08:50-10:20	Zoom	Lecture: Probability and diagnostic tests; Theoretical probability distributions	MATSUYAMA Yuusuke
4	6/2	10:30-12:00	Zoom	Lecture: Probability and diagnostic tests; Theoretical probability distributions	MATSUYAMA Yuusuke
5	6/4	08:50-10:20	Zoom	Lecture: Sampling distribution of the mean; Confidence intervals	FUJIWARA Takeo
6	6/4	10:30-12:00	Zoom	Lecture: Sampling distribution of the mean; Confidence intervals	FUJIWARA Takeo
7	6/4	13:00-14:30	Zoom	【Optional 1】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
8	6/4	14:40-16:10	Zoom	【Optional 2】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako,



					MATSUYAMA Yuusuke
9	6/5	08:50-10:20	Zoom	Lecture: Hypothesis testing; Comparison of two means	FUJIWARA Takeo
10	6/5	10:30-12:00	Zoom	Lecture: Hypothesis testing; Comparison of two means	FUJIWARA Takeo
11	6/5	13:00-14:30	Zoom	【Optional 3】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
12	6/5	14:40-16:10	Zoom	【Optional 4】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
13	6/8	08:50-10:20	Zoom	Lecture: Analysis of Variance; Nonparametric methods	MATSUYAMA Yuusuke
14	6/8	10:30-12:00	Zoom	Lecture: Analysis of Variance; Nonparametric methods	MATSUYAMA Yuusuke
15	6/8	13:00-14:30	Zoom	【Optional 5】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
16	6/8	14:40-16:10	Zoom	【Optional 6】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
17	6/9	08:50-10:20	Zoom	Lecture: Inference on proportions; Contingency tables; Multiple 2 by 2 tables	MATSUYAMA Yuusuke
18	6/9	10:30-12:00	Zoom	Lecture: Inference on proportions; Contingency tables; Multiple 2 by 2 tables	MATSUYAMA Yuusuke
19	6/9	13:00-14:30	Zoom	【Optional 7】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
20	6/9	14:40-16:10	Zoom	【Optional 8】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
21	6/11	08:50-10:20	Zoom	Lecture: Correlation; Simple linear regression; Multiple regression	NAWA Nobutoshi
22	6/11	10:30-12:00	Zoom	Lecture: Correlation; Simple linear regression; Multiple regression	NAWA Nobutoshi
23	6/11	13:00-14:30	Zoom	【Optional 9】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
24	6/11	14:40-16:10	Zoom	【Optional 10】Laboratory session	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke
25	6/12	08:50-10:20	Zoom	Lecture: Logistic regression	NAWA Nobutoshi
26	6/12	10:30-12:00	Zoom	Final Exam	FUJIWARA Takeo

#### Lecture Style

This course will consist of lectures and optional laboratory sessions. There will be daily homework assignments and examination on the final day.

#### Grading System

Grades will be based on the following elements:

Participation 20%

Homework exercise 30%

Final examination 50%

**Prerequisite Reading**

Reading materials will be available online at the course webpage. Students are expected to have worked thorough the materials before attending the corresponding class.

**Reference Materials**

Pagano M, Gauvreau K. Principles of Biostatistics. 2nd ed. Belmont: Brooks/Cole; 2000.

Rosner B. Fundamentals of Biostatistics. 8th ed. Brooks/Cole; 2015.

**Important Course Requirements**

Chief instructor's permission is required before registering to the course.

**Instructor's Contact Information**

FUJIWARA Takeo:Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp

<b>Lecture No</b>	041033				
<b>Subject title</b>	Advanced Biosensing Devices	<b>Subject ID</b>			
<b>Instructors</b>	MITSUBAYASHI KOHJI				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
Course Purpose:This program offers lectures on several important topics in Sensing devices, Biochemistry, Recognition materials, MEMS and Optics for Biosensing in the medical and dental fields. The major purpose of the program is to obtain the latest information and to train scientific mind as well as logical thinking skills necessary to become independent researchers.					
Outline:several types of the advanced biosensing devices and technologies are introduced and some potential applications in the medical and dental fields will be discussed.					
<b>Course Objective(s)</b>					
Introduce useful information from the basic biosensors to latest biochemical sensing devices in the medical and dental fields to attendants.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	担当教員
1	5/7	13:00-15:15	Zoom	Spatiotemporal Biosensing in the gas phase	MITSUBAYASHI KOHJI, TOMA KOJI
2	5/13	13:00-15:15	Zoom	Material technology for realizing high performance biosensors	KATOH Dai
3	5/20	13:00-15:15	Zoom	Functional interface for biosensing	TABATA Miyuki
4	5/27	13:00-15:15	Zoom	DNA analysis based on Nano/Micro technology	MIYAHARA YUJI
5	6/3	13:00-15:15	Zoom	Biosensing-synchronized therapeutic technologies	MATSUMOTO AKIRA
<b>Lecture Style</b>					
Lectures on the essence of advanced biosensing devices.					
<b>Grading System</b>					
Grading is given by taking all activities of the students into account such as participation of lecture class and discussion (50%), quality of discussion and presentation (30%), as well as willingness and understanding of discussion (20%).					
<b>Prerequisite Reading</b>					
Any students who prepare for this course, they can refer to the following books and paper.					
<b>Reference Materials</b>					
Chemical, Gas, and Biosensors for Internet of Things and Related Applications / Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno: Elsevier, 2019 代謝センシング = Metabolic sensing : 健康, 食, 美容, 薬, そして脳の代謝を知る / 三林浩二 監修, 三林, 浩二.: シーエムシー出版, 2018 生体ガス計測と高感度ガスセンシング / 三林浩二監修 / 三林, 浩二.: シーエムシー出版, 2017 バイオチップとバイオセンサー / 堀池靖浩, 宮原裕二著 ; 高分子学会編集, 堀池, 靖浩, 宮原, 裕二, 高分子学会.: 共立出版, 2006 To be distributed during the lecture.					
<b>Important Course Requirements</b>					
To be announced during the lecture.					
<b>Email</b>					
MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21					

<b>Lecture No</b>	041034																																																				
<b>Subject title</b>	Advanced Medical Device and System			<b>Subject ID</b>																																																	
<b>Instructors</b>	NAKAJIMA Yoshikazu, MIYAHARA YUJI, MITSUBAYASHI KOJI, KAWASHIMA KENJI																																																				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1																																																
<b>Course by the instructor with practical experiences</b>																																																					
<p>Availability in English: When an international student registers this subject for credits, this course is taught in English.</p> <p>Introduce latest research and development of medical devices and systems such as real time image measurement device, image analysis technology with AI, and assist robot for surgery.</p>																																																					
<b>Lecture place</b>	Seminar room 3 on the 8th floor in Building 22.																																																				
<b>Course Purpose and Outline</b>	<p>The course will introduce the latest research topics and development of medical devices and systems to assist surgery that integrate IoT or AI. The students will acquire the basic knowledge to promote the development of medical devices and systems.</p>																																																				
<b>Course Objective(s)</b>	The aim of the course is to understand the basic knowledge to promote the development of medical devices and systems integrated IoT and AI.																																																				
<b>Lecture plan</b>	<table border="1"> <thead> <tr> <th>No</th> <th>Day</th> <th>Time</th> <th>Venue</th> <th>Topics</th> <th>担当教員</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>6/29</td> <td>14:00-16:15</td> <td>Zoom</td> <td>In vitro diagnostic devices and systems1</td> <td>MIYAHARA YUJI</td> </tr> <tr> <td>2</td> <td>7/6</td> <td>14:00-16:15</td> <td>Zoom</td> <td>In vitro diagnostic devices and systems2</td> <td>MIYAHARA YUJI</td> </tr> <tr> <td>3</td> <td>7/13</td> <td>14:00-16:15</td> <td>Zoom</td> <td>Biosensing system</td> <td>MITSUBAYASHI KOHJI</td> </tr> <tr> <td>4</td> <td>7/20</td> <td>14:00-16:15</td> <td>Zoom</td> <td>Power assist device・Surgical assist robot1</td> <td>KAWASHIMA KENJI</td> </tr> <tr> <td>5</td> <td>7/27</td> <td>14:00-16:15</td> <td>Zoom</td> <td>Power assist device・Surgical assist robot2</td> <td>KAWASHIMA KENJI</td> </tr> <tr> <td>6</td> <td>8/3</td> <td>14:00-16:15</td> <td>Zoom</td> <td>Computer-integrated medical assistance system 1</td> <td>NAKAJIMA Yoshikazu</td> </tr> <tr> <td>7</td> <td>8/24</td> <td>14:00-16:15</td> <td>Zoom</td> <td>Computer-integrated medical assistance system 2</td> <td>NAKAJIMA Yoshikazu</td> </tr> </tbody> </table>					No	Day	Time	Venue	Topics	担当教員	1	6/29	14:00-16:15	Zoom	In vitro diagnostic devices and systems1	MIYAHARA YUJI	2	7/6	14:00-16:15	Zoom	In vitro diagnostic devices and systems2	MIYAHARA YUJI	3	7/13	14:00-16:15	Zoom	Biosensing system	MITSUBAYASHI KOHJI	4	7/20	14:00-16:15	Zoom	Power assist device・Surgical assist robot1	KAWASHIMA KENJI	5	7/27	14:00-16:15	Zoom	Power assist device・Surgical assist robot2	KAWASHIMA KENJI	6	8/3	14:00-16:15	Zoom	Computer-integrated medical assistance system 1	NAKAJIMA Yoshikazu	7	8/24	14:00-16:15	Zoom	Computer-integrated medical assistance system 2	NAKAJIMA Yoshikazu
No	Day	Time	Venue	Topics	担当教員																																																
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6	8/3	14:00-16:15	Zoom	Computer-integrated medical assistance system 1	NAKAJIMA Yoshikazu																																																
7	8/24	14:00-16:15	Zoom	Computer-integrated medical assistance system 2	NAKAJIMA Yoshikazu																																																
<b>Lecture Style</b>	Lecture and discussion																																																				
<b>Course Outline</b>	The details are shown in another table.																																																				
<b>Grading System</b>	Attendance to lectures (60 %) and reports (40 %) will be evaluated.																																																				
<b>Grading Rule</b>	Attendance to lectures (60 %) and reports (40 %)																																																				
<b>Prerequisite Reading</b>	Instruction will be done at the first lecture. It will be done in any class if necessary.																																																				
<b>Exam eligibility</b>	No restriction.																																																				
<b>Composition Unit</b>	Yoshikazu Nakajima, Yuji Miyahara, Kohji Mitsubayashi, Kenji Kawashima																																																				
<b>Module Unit Judgment</b>	1 unit																																																				
<b>TextBook</b>	Handout will be provided in each class if necessary.																																																				
<b>Reference Materials</b>	Handouts will be provided if necessary.																																																				
<b>Important Course Requirements</b>	Nothing.																																																				
<b>Note(s) to Students</b>	Nothing.																																																				
<b>Email</b>	NAKAJIMA Yoshikazu:nakajima.bmi@tmd.ac.jp																																																				
<b>Instructor's Contact Information</b>	NAKAJIMA Yoshikazu:15:00-16:30 on every Monday at Room 408A on the 4th floor, Building 21, Surugadai campus																																																				

<b>Lecture No</b>	041035				
<b>Subject title</b>	Wearable & IoT Devices and Applications			<b>Subject ID</b>	
<b>Instructors</b>	MITSUBAYASHI KOJI				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Zoom					
<b>Course Purpose and Outline</b>					
Course Purpose:The program offers lectures on several important topics in Sensing devices & instruments, IoT technologies & Security and Energy harvesting devices in the medical and dental fields. The major purpose of the program is to obtain the latest information and to train scientific mind as well as logical thinking skills necessary to become independent researchers.					
Outline:Several types of the advanced wearable IoT devices and technologies are introduced and some potential applications in the medical and dental fields will be discussed.					
<b>Course Objective(s)</b>					
Introduce useful information from the basic wearable sensors to latest IoT devices in the medical and dental fields to attendants.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	担当教員
1	5/29	13:00-15:15	Zoom	Utilization of wearable bioelectrode "hitoe" in IoT society	Hiroshi Nakashima
2	6/17	13:00-15:15	Zoom	Wearable biosensors & Gas-imaging camera	MITSUBAYASHI KOJI, ARAKAWA TAKAHIRO
3	6/24	13:00-15:15	Zoom	Wearable and IoT devices in consumer electronics	Tetsuya Naruse
4	7/1	13:00-15:15	Zoom	Design and implementation of power supply technology	TAKEUCHI Keiji
5	7/8	13:00-15:15	Zoom	Security issues in IoT devices	YOSHIOKA Katsunari
<b>Lecture Style</b>					
Lectures on the essence of wearable IoT technologies.					
<b>Grading System</b>					
Grading is given by taking all activities of the students into account such as participation of lecture class and discussion (50%), quality of discussion and presentation (30%), as well as willingness and understanding of discussion (20%).					
<b>Prerequisite Reading</b>					
Any students who prepare for this course, they can refer to the following books and paper.					
<b>Reference Materials</b>					
Chemical, Gas, and Biosensors for Internet of Things and Related Applications / Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno: Elsevier, 2019 代謝センシング = Metabolic sensing: 健康, 食, 美容, 薬, そして脳の代謝を知る / 三林浩二 監修, 三林, 浩二: シーエムシー出版, 2018 生体ガス計測と高感度ガスセンシング / 三林浩二監修 / 三林, 浩二: シーエムシー出版, 2017 スポーツバイオ科学と先進スポーツギアの開発 / 三林浩二監修, 三林, 浩二: シーエムシー出版, 2015 スマート・ヒューマンセンシング: 健康ビッグデータ時代のためのセンサ・情報・エネルギー技術 / 三林, 浩二: シーエムシー出版, 2014 ヘルスケアとバイオ医療のための先端デバイス機器 / 三林浩二監修, 三林, 浩二: シーエムシー出版, 2009 To be distributed during the lecture.					
<b>Important Course Requirements</b>					
To be announced during the lecture.					
<b>Email</b>					
MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21					

<b>Lecture No</b>	041036				
<b>Subject title</b>	Molecular Pathophysiology	<b>Subject ID</b>			
<b>Instructors</b>	TSUBATA TAKESHI				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this course for credits, this course is done in English.					
<b>Course Purpose and Outline</b>					
Course Purpose:The purpose of this course is to obtain overview of the current progress in the research on molecular pathophysiology of the diseases based on the basic biosciences including molecular biology, genome science and epigenetics, and also practical approach to the development of prevention and therapies of the diseases.					
Outline:This course offers lectures on molecular pathophysiology of the diseases such as cancer, metabolic diseases, immunological and neurological diseases and congenital diseases based on basic biosciences including molecular biology, genome science and epigenetics. Development of the novel and rational prevention and therapies according to the molecular physiology will also be discussed.					
<b>Course Objective(s)</b>					
To obtain overview of the molecular pathophysiology of cancer, metabolic diseases, autoimmune and neurological diseases, and congenital heart diseases, and to discuss development of rational prevention and therapies of these diseases.Introduce useful information from the latest biology to basic medicine to attendants.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	担当教員
1	5/7	13:00-15:15	Zoom	Molecular pathophysiology of autoimmune diseases	TSUBATA TAKESHI
2	5/8	13:00-15:15	Zoom	Cancer biology and pathophysiology: Lessons from p53	Hirofumi Arakawa
3	5/14	13:00-15:15	Zoom	Molecular pathophysiology of neuropsychiatric diseases	TANAKA KOICHI
4	5/15	13:00-15:15	Zoom	Molecular pathophysiology of cancer and phospholipid metabolism	SASAKI Junnko
5	5/22	13:00-15:15	Zoom	Molecular pathophysiology of congenital heart diseases	TAKEUCHI Junn
<b>Lecture Style</b>					
Lecture, discussion and presentation					
<b>Grading System</b>					
Participation to lectures is evaluated.					
<b>Prerequisite Reading</b>					
Basic knowledge on molecular biology, biochemistry, neuroscience and immunology is required.					
<b>Reference Materials</b>					
Peter Parham, "The immune system" (Third edition), Garland Science					
Mark F. Bear, Barry W. Connors and Michael A. Paradiso, Neuroscience: Exploring the Brain. Lippincott Williams & Wilkins.					
Tsubata T "B cell tolerance and autoimmunity" F1000Research 6 (F1000 Faculty Rev.): 391, 2017.					
<b>Important Course Requirements</b>					
•Your attendance will be taken by the attendance system. Please make sure to pass your student ID card over the card reader of system roughly 10 minutes prior to each lecture starts. Usually, the card reader is on the wall by the back door of the lecture room.					

<b>Lecture No</b>	041037				
<b>Subject title</b>	Advanced Chemical Biology			<b>Subject ID</b>	
<b>Instructors</b>	TAMAMURA HIROKAZU				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English:When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose:Fundamental knowledge and technology on the development of chemical biology used in several research fields (life science, analytical chemistry, organic chemistry, material science, etc) and the recent topics on their advanced researches will be educated.					
Outline:Various basic methods required for chemical biology researches will be discussed based on recent advanced results.					
<b>Course Objective(s)</b>					
Chemical biology is a research field, in which biological phenomena are analyzed and regulated, and is complicatedly correlated to several research fields such as medicinal chemistry and nanotechnologies. This course deals with their up-to-date advanced research tendencies.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	担当教員
1	6/13	14:00-16:15	Zoom	Advanced Chemical Biology Research1	TSUJI Kouhei
2	6/20	12:40-14:55	Zoom	Advanced Chemical Biology Research2	NUMOTO NOBUTAKA
3	6/27	14:00-16:15	Zoom	Advanced Chemical Biology Research3	FUJII Shinnya
4	7/4	12:40-14:55	Zoom	Advanced Chemical Biology Research4	YOSHIDA SUGURU
5	7/11	14:00-16:15	Zoom	Advanced Chemical Biology Research5	TAMAMURA HIROKAZU
<b>Lecture Style</b>					
This course includes seminar-type lectures, exercises about organic chemistry, and practices about chemical biology techniques.					
<b>Grading System</b>					
Attendance (50%) and Presentation (50%)					
<b>Prerequisite Reading</b>					
Fundamental organic chemistry should be reviewed. The books listed in #9 are useful for understanding the topics in this course.					
<b>Reference Materials</b>					
Chemical Biology (L. Schreiber, T. Kapoor, G. Weiss Eds, WILEY-VCH); PROTEIN TARGETING WITH SMALL MOLECULES - Chemical Biology Techniques and Applications (Wiley)					
<b>Email</b>					
TAMAMURA HIROKAZU:tamamura.mr@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAMAMURA HIROKAZU:Mon-Fri, 3-5 pm Bldg22, F16, Rm603B					

<b>Lecture No</b>	041038				
<b>Subject title</b>	Molecular and Chemical Somatology			<b>Subject ID</b>	
<b>Instructors</b>	Nobumoto Watanabe				
<b>Semester</b>	Spring 2020	<b>Level</b>	1st - year	<b>Units</b>	1
<b>Course by the instructor with practical experiences</b>					
Availability in English: When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
Course Purpose: We aim to understand basis of Bioorganic Chemistry, Chemical Biology as well as their applications to Medicine and Biology by dealing with variety of molecules that regulate cellular functions including low molecular organic compounds, proteins, and hormones.					
Outline: Molecular and Chemical Somatology is an interdisciplinary fields to understand basis of Bioorganic Chemistry, Chemical Biology as well as their applications to Medicine and Biology by dealing with variety of molecules that regulate cellular functions including low molecular organic compounds, proteins, and hormones. Students will hear and discuss about outlines and/or latest topics on discovery, structure, synthesis, biology, and management of these key molecules/factors, and deepen their understanding this new study field.					
<b>Course Objective(s)</b>					
Students will hear and discuss about latest topics from each instructor.					
<b>Lecture plan</b>					
No	Day	Time	Venue	Topics	担当教員
1	5/21	13:00-15:15	Zoom	Review & Chemical biology for anticancer drug development	Nobumoto Watanabe
2	5/28	13:00-15:15	Zoom	Regulation of physiological function with synthetic molecules	HAGIHARA Shinya
3	5/28	15:30-17:45	Zoom	Systems biology of small molecules	Senyoh Shin
4	6/4	13:00-15:15	Zoom	Plant Chemical Biology	Fumiyoshi Myohga
5	6/18	14:00-16:15	Zoom	Development of Novel Methodologies for	Mikiko Sodeoka, Kohsuke Dodo
<b>Lecture Style</b>					
Lectures by instructors, Presentation by students, and Discussion					
<b>Grading System</b>					
Attendance (40%) and Report (60%)					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
Chemical Biology (L. Schreiber, T. Kapoor, G. Wess Eds., WILEY-VCH), PROTEIN TARGETING WITH SMALL MOLECULES - Chemical Biology Techniques and Applications (H. Osada Ed, Wiley)					
<b>Important Course Requirements</b>					
All the lectures will be held at RIKEN.					
<b>Email</b>					
Nobumoto Watanabe: nwatanab@riken.jp					
<b>Instructor's Contact Information</b>					
Nobumoto Watanabe: 3:00-5:00 pm, every Tuesday to: Dr. Nobumoto Watanabe, Chief Instructor of Molecular and Chemical Somatology"					



<b>Lecture No</b>	041039				
<b>Subject title</b>	Lecture of Oral Pathology	<b>Subject ID</b>			
<b>Instructors</b>	IKEDA Tooru, SAKAMOTO KEI, KAYAMORI KO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor					
<b>Course Purpose and Outline</b>					
Pathogenesis of diseases are reflected in genes, proteins, tissues, organs and/or whole body. Purpose of this course is to understand the mechanism of these pathological changes and to acquire techniques to analyze them.					
<b>Course Objective(s)</b>					
Graduate students of this course acquire basic knowledges of pathogenesis of diseases. On the basis of the knowledges, the graduate students learn theoretical and practical ways to analyze oral diseases.					
<b>Lecture Style</b>					
Lecture, microscopy reading and discussion.					
<b>Course Outline</b>					
Through a critical reading of scientific papers, students learn pathogenesis of diseases, way of analyses and subjects that should be clarified in the field. In addition, students learn scientific way of thinking to draw conclusions from results.					
<b>Grading System</b>					
Comprehensive assessment based on participation and activity in lectures, practice and discussion.					
<b>Prerequisite Reading</b>					
None required.					
<b>Reference Materials</b>					
Provided on request.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
IKEDA Tooru:tohrupth.mpa@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
IKEDA Tooru:Every Monday or Friday 16:00-17:00 pm. Building 1 East, 4th floor					

<b>Lecture No</b>	041040				
<b>Subject title</b>	Practice of Oral Pathology	<b>Subject ID</b>			
<b>Instructors</b>	IKEDA Tooru, SAKAMOTO KEI, KAYAMORI KO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor					
<b>Course Purpose and Outline</b>					
Pathogenesis of diseases are reflected in genes, proteins, tissues, organs and/or whole body. Purpose of this course is to understand the mechanism of these pathological changes and to acquire techniques to analyze them.					
<b>Course Objective(s)</b>					
Graduate students of this course acquire basic knowledges of pathogenesis of diseases. On the basis of the knowledges, the graduate students learn theoretical and practical ways to analyze oral diseases.					
<b>Lecture Style</b>					
Lecture, microscopy reading and discussion.					
<b>Course Outline</b>					
On the basis of knowledges obtained from the lecture, students practice basic methods of genetic, biochemical, cell biological and clinicopathological analyses.					
<b>Grading System</b>					
Comprehensive assessment based on participation and activity in lectures, practice and discussion.					
<b>Prerequisite Reading</b>					
None required.					
<b>Reference Materials</b>					
Provided on request.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
IKEDA Tooru:tohrupth.mpa@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
IKEDA Tooru:Every Monday or Friday 16:00–17:00 pm. Building 1 East, 4th floor					

<b>Lecture No</b>	041041				
<b>Subject title</b>	Laboratory practice of Oral Pathology			<b>Subject ID</b>	
<b>Instructors</b>	IKEDA Tooru, SAKAMOTO KEI, KAYAMORI KO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor					
<b>Course Purpose and Outline</b>					
Pathogenesis of diseases are reflected in genes, proteins, tissues, organs and/or whole body. Purpose of this course is to understand the mechanism of these pathological changes and to acquire techniques to analyze them.					
<b>Course Objective(s)</b>					
Graduate students of this course acquire basic knowledges of pathogenesis of diseases. On the basis of the knowledges, the graduate students learn theoretical and practical ways to analyze oral diseases.					
<b>Lecture Style</b>					
Lecture, microscopy reading and discussion.					
<b>Course Outline</b>					
Students learn analytical techniques through laboratory works and evaluate the data to draw conclusions. Students who have an aim to be qualified as oral pathologists further learn histopathological diagnosis of oral lesions and pathologic autopsy.					
<b>Grading System</b>					
Comprehensive assessment based on participation and activity in lectures, practice and discussion.					
<b>Prerequisite Reading</b>					
None required.					
<b>Reference Materials</b>					
Provided on request.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
IKEDA Tooru:tohrupth.mpa@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
IKEDA Tooru:Every Monday or Friday 16:00–17:00 pm. Building 1 East, 4th floor					

<b>Lecture No</b>	041042				
<b>Subject title</b>	Lecture of Bacterial Pathogenesis	<b>Subject ID</b>			
<b>Instructors</b>	SUZUKI TOSHIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
M&D Tower, 8F Seminar room 10, Staff room of department					
<b>Course Purpose and Outline</b>					
The purpose of the program of Bacterial Pathogenesis is to provide the updated information related to bacterial infection, host responses and the development of infectious diseases. Also, indigenous microflora-mediated homeostasis and pathogenesis are introduced.					
<b>Course Objective(s)</b>					
The goal of the program is to acquire knowledge including not only the mechanism to cause infectious diseases, bacterial infection system and immune responses against pathogen infection, but also to design the experiments and analysis using scientific methods.					
<b>Lecture Style</b>					
A small group					
<b>Course Outline</b>					
To understand infection system by pathogenic bacteria, it requires overviewing from both pathogens and hosts at the molecular level. In this lecture, the molecular mechanisms of bacterial infection and host immune responses will be introduced. Also, recent topics on advanced medicines including infectious diseases, immunology and ecology of indigenous microflora are discussed.					
<b>Grading System</b>					
Evaluation is based on attendance for lecture .					
<b>Prerequisite Reading</b>					
Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b>					
No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b>					
Nothing particular.					
<b>Note(s) to Students</b>					
Nothing particular.					

<b>Lecture No</b>	041043				
<b>Subject title</b>	Practice of Bacterial Pathogenesis	<b>Subject ID</b>			
<b>Instructors</b>	SUZUKI TOSHIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> M&D Tower, 8F Seminar room 10, Staff room of department					
<b>Course Purpose and Outline</b> The purpose of the program of Bacterial Pathogenesis is to be sharing the updated information related to bacterial infection, host responses and the development of infectious diseases. Also, indigenous microflora-mediated homeostasis and pathogenesis are introduced.					
<b>Course Objective(s)</b> The goal of the program is to acquire knowledge including not only the mechanism to cause infectious diseases, bacterial infection system and immune responses against pathogen infection, but also to design the experiments and analysis using scientific methods.					
<b>Lecture Style</b> A small group					
<b>Course Outline</b> By reading and introducing the updated scientific papers in turns, students will learn critical thinking in discussion, summarizing, writing and presentation skills through discussion in Journal Club.					
<b>Grading System</b> Evaluation is based on attendance for practice and the contents of presentation of students.					
<b>Prerequisite Reading</b> Prior to a practice, confirm the contents of introducing scientific papers and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b> No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b> Nothing particular.					
<b>Note(s) to Students</b> Nothing particular.					

<b>Lecture No</b>	041044				
<b>Subject title</b>	Laboratory practice of Bacterial Pathogenesis	<b>Subject ID</b>			
<b>Instructors</b>	SUZUKI TOSHIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
M&D Tower, 8F Seminar room 10, Staff room of department					
<b>Course Purpose and Outline</b>					
The purpose of the program of Bacterial Pathogenesis is to provide the updated information related to bacterial infection, host responses and the development of infectious diseases. Also, indigenous microflora-mediated homeostasis and pathogenesis are introduced.					
<b>Course Objective(s)</b>					
The goal of the program is to acquire knowledge including not only the mechanism to cause infectious diseases, bacterial infection system and immune responses against pathogen infection, but also to design the experiments and analysis using scientific methods.					
<b>Lecture Style</b>					
group guidance team teaching					
<b>Course Outline</b>					
The students will perform experiments related bacterial infection, innate immune responses using several methods. These include bacterial culture, genetics, development of cell culture, in vivo studies using animal. Students will complete their own project.					
<b>Grading System</b>					
Evaluation is based on thesis completion.					
<b>Prerequisite Reading</b>					
Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b>					
No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b>					
Nothing particular.					
<b>Note(s) to Students</b>					
Nothing particular.					

<b>Lecture No</b>	041045				
<b>Subject title</b>	Lecture of Molecular Immunology	<b>Subject ID</b>			
<b>Instructors</b>	AZUMA MIYUKI, NAGAI SHIGENORI, Youhei Kawano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lecture and Practice: M&D tower, 6F Seminar room 11					
<b>Course Purpose and Outline</b>					
To understand how immune systems contribute to healthy and disease status and also to learn how to control immune-mediated diseases.					
<b>Course Objective(s)</b>					
To explain systemic and organ-specific immune responses and to bring ideas how to control immune diseases					
<b>Lecture Style</b>					
Presentation by a small group and comprehensive discussion					
<b>Course Outline</b>					
Every Monday from January 18 to March 8, 17:00 -19:00					
Select several immunology reviews in 2020 immunology topics, read by a small group, and then present and discuss by all class					
<b>Grading System</b>					
Comprehensive assessment (presentation, discussion, research content, conference/meeting participation)					
<b>Prerequisite Reading</b>					
must review the things that you have learned in undergraduate Immunology classes					
<b>Reference Materials</b>					
Cellular and Molecular Immunology (Seventh Edition) Elsevier Saunders					
<b>Important Course Requirements</b>					
All lecture, presentation and discussion are provided in English.					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
AZUMA MIYUKI: miyuki.mim@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AZUMA MIYUKI: Mon~Fri PM.16:00-PM.18:00 M&D tower Staff/Prof Room					

<b>Lecture No</b>	041046				
<b>Subject title</b>	Practice of Molecular Immunology	<b>Subject ID</b>			
<b>Instructors</b>	AZUMA MIYUKI, NAGAI SHIGENORI, Youhei Kawano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lecture and Practice: M&D tower, 6F Seminar room 11					
<b>Course Purpose and Outline</b>					
To understand how immune systems contribute to healthy and disease status and also to learn how to control immune-mediated diseases.					
<b>Course Objective(s)</b>					
To explain systemic and organ-specific immune responses and to bring ideas how to control immune diseases					
<b>Lecture Style</b>					
Presentation by a small group and comprehensive discussion					
<b>Course Outline</b>					
To understand basic and update technology of immunological research and to try to make own study plan					
<b>Grading System</b>					
Comprehensive assessment (presentation, discussion, research content, conference/meeting participation)					
<b>Prerequisite Reading</b>					
must review the things that you have learned in undergraduate Immunology classes					
<b>Reference Materials</b>					
Cellular and Molecular Immunology (Seventh Edition) Elsevier Saunders					
<b>Important Course Requirements</b>					
All lecture, presentation and discussion are provided in English.					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
AZUMA MIYUKI:miyuki.mim@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AZUMA MIYUKI: Mon~Fri PM.16:00~PM.18:00 M&D tower Staff/Prof Room					



<b>Lecture No</b>	041047				
<b>Subject title</b>	Laboratory practice of Molecular Immunology	<b>Subject ID</b>			
<b>Instructors</b>	AZUMA MIYUKI, NAGAI SHIGENORI, Youhei Kawano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lecture and Practice: M&D tower, 6F Seminar room 11					
<b>Course Purpose and Outline</b>					
To understand how immune systems contribute to healthy and disease status and also to learn how to control immune-mediated diseases.					
<b>Course Objective(s)</b>					
To explain systemic and organ-specific immune responses and to bring ideas how to control immune diseases					
<b>Lecture Style</b>					
Presentation by a small group and comprehensive discussion					
<b>Course Outline</b>					
To acquire fundamental techniques for immunological research. To make own study plan and to practice own study					
<b>Grading System</b>					
Comprehensive assessment (presentation, discussion, research content, conference/meeting participation)					
<b>Prerequisite Reading</b>					
must review the things that you have learned in undergraduate Immunology classes					
<b>Reference Materials</b>					
Cellular and Molecular Immunology (Seventh Edition) Elsevier Saunders					
<b>Important Course Requirements</b>					
All lecture, presentation and discussion are provided in English.					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
AZUMA MIYUKI: miyuki.mim@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AZUMA MIYUKI: Mon~Fri PM.16:00~PM.18:00 M&D tower Staff/Prof Room					

<b>Lecture No</b>	041048				
<b>Subject title</b>	Lecture of Advanced Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	UO MOTOHIRO, WADA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Please contact the faculty adviser before attending class.					
<b>Course Purpose and Outline</b> Study about the progress and the various properties advanced biomaterials and dental materials. In addition, study about the measurement and analysis methods of advanced biomaterials and dental materials.					
<b>Course Objective(s)</b> Acquire the knowledge about the biomedical and dental materials					
<b>Lecture Style</b> All coerces are basically few people education system for providing free discussion.					
<b>Course Outline</b> Goals/outline: Upon successful completion of the course, the student will be able to: 1. Describe the basic classification of dental materials 2. Understand basic characteristics of recent dental materials 3. Explain current scientific theory regarding evaluating mechanical properties 4. Discuss characteristics of recent representative oral biomaterials and equipment.					
<b>Grading System</b> Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.					
<b>Prerequisite Reading</b> Prerequisite reading will be requested, if necessary					
<b>Reference Materials</b> Phillip' s Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041049				
<b>Subject title</b>	Practice of Advanced Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	UO MOTOHIRO, WADA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Please contact the faculty adviser before attending class.					
<b>Course Purpose and Outline</b> Study about the progress and the various properties advanced biomaterials and dental materials. In addition, study about the measurement and analysis methods of advanced biomaterials and dental materials.					
<b>Course Objective(s)</b> Acquire the knowledge about the biomedical and dental materials					
<b>Lecture Style</b> All coerces are basically few people education system for providing free discussion.					
<b>Course Outline</b> Goals/Outline: Students will be able to explain their research results using PowerPoint. Students will be able to display their research results as a poster presentation. Student will be able to discuss their findings with other students.					
<b>Grading System</b> Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.					
<b>Prerequisite Reading</b> Prerequisite reading will be requested, if necessary					
<b>Reference Materials</b> Phillip' s Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041050				
<b>Subject title</b>	Laboratory practice of Advanced Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	UO MOTOHIRO, WADA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Please contact the faculty adviser before attending class.					
<b>Course Purpose and Outline</b> Study about the progress and the various properties advanced biomaterials and dental materials. In addition, study about the measurement and analysis methods of advanced biomaterials and dental materials.					
<b>Course Objective(s)</b> Acquire the knowledge about the biomedical and dental materials					
<b>Lecture Style</b> All coerces are basically few people education system for providing free discussion.					
<b>Course Outline</b> Goals/Outline: Students should measure basic mechanical properties using testing machine. Students should determine several hardness values of dental materials. Student should analyze crystalline component using X-ray diffractometer Student should analyze atomic vibration using Fourier-transfer-infrared-scopy.					
<b>Grading System</b> Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.					
<b>Prerequisite Reading</b> Prerequisite reading will be requested, if necessary					
<b>Reference Materials</b> Phillip' s Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041054				
<b>Subject title</b>	Lecture of Oral Radiation Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIURA MASAHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Make sure by contacting me before each lecture or seminar					
<b>Course Purpose and Outline</b> To understand cutting edge of radiation biology and radiation oncology					
<b>Course Objective(s)</b> To understand the concept and reserch trend of translational reserch regading radiation oncology					
<b>Lecture Style</b> To give lectures and practice to a small number of students. To cultivate ability to extract problems and constitute your own idea through discussions.					
<b>Course Outline</b> Goals/outline: Oral Radiation Oncology is a branch of radiation oncology dealing with basic radiobiology, translational research, and radiotherapy for oral cancer. Main objective of this branch in the graduate course is to provide opportunities to study biological strategies for radiosensitization, development of radiosensitizers, molecular mechanisms of tumor radioresistance, the state of the art technology of radiotherapy, and basis of individualized radiotherapy depending on each student's research projects.					
<b>Grading System</b> Totally evaluate students' achievements based on the presence to lectures and report .					
<b>Prerequisite Reading</b> Read the reference material described below and grassp the outline					
<b>Reference Materials</b> "Radiobiology for the Radiologist 7th ed" Lippincott Williams & Wilkins, Eric J Hall and Amato J Giaccia eds.					
<b>Relationship With Other Subjects</b> None					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> masa.mdth@tmd.ac.jp					
<b>Instructor's Contact Information</b> Mon., Wed., Fri. 16:00—18:00 M&DTower7F S755					

<b>Lecture No</b>	041055				
<b>Subject title</b>	Practice of Oral Radiation Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIURA MASAHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Make sure by contacting me before each lecture or seminar					
<b>Course Purpose and Outline</b>					
To understand cutting edge of radiation biology and radiation oncology					
<b>Course Objective(s)</b>					
To understand the concept and reserch trend of translational reserch regading radiation oncology					
<b>Lecture Style</b>					
To give lectures and practice to a small number of students.					
To cultivate ability to extract problems and constitute your own idea through discussions.					
<b>Course Outline</b>					
Goals/Outline: The outline of Practice is to diagnose varying types of the primary and locoregional sites of oral cancer and to learn how to treat them by radiotherapeutic modalities including 3D-conformal radiotherapy, brachytherapy, and multidisciplinary treatments. Translational research is also included.					
<b>Grading System</b>					
Totally evaluate students' achievements based on the presence to lectures or seminars and reports regading their research and presentation.					
<b>Prerequisite Reading</b>					
Read the reference material described below and grassp the outline					
<b>Reference Materials</b>					
"Radiobiology for the Radiologist 7th ed" Lippincott Williams & Wilkins, Eric J Hall and Amato J Giaccia eds.					
<b>Relationship With Other Subjects</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
masa.mdth@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon., Wed., Fri. 16:00—18:00 M&DTower7F S755					

<b>Lecture No</b>	041056				
<b>Subject title</b>	Laboratory practice of Oral Radiation Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIURA MASAHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Make sure by contacting me before each practice.					
<b>Course Purpose and Outline</b> To perform experiments according to each specific theme regarding radiation oncology.					
<b>Course Objective(s)</b> To try to get novel findings through experiments according to each specific theme regarding radiation oncology.					
<b>Lecture Style</b> To try to get novel findings through experiments regarding radiation oncology. To cultivate ability to extract problems and constitute your own idea through novel findings.					
<b>Course Outline</b> Goals/Outline: The outline is to learn basic techniques required for our research themes (tissue culture techniques, X-ray irradiation, radiation dosimetry, Western blotting, gene transfer, real time imaging using fluorescent proteins, etc.)					
<b>Grading System</b> Totally evaluate students' achievements based on the presence to lectures or seminars, presentation, and reports regarding their research.					
<b>Prerequisite Reading</b> Read the reference material described below and grasp the outline					
<b>Reference Materials</b> "Radiobiology for the Radiologist 7th ed" Lippincott Williams & Wilkins, Eric J Hall and Amato J Giaccia eds.					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> masa.mdth@tmd.ac.jp					
<b>Instructor's Contact Information</b> Mon., Wed., Fri. 16:00–18:00 M&DTower7F S755					

<b>Lecture No</b>	041057				
<b>Subject title</b>	Lecture of Oral and Maxillofacial Surgery	<b>Subject ID</b>			
<b>Instructors</b>	HARADA HIROYUKI, MICHU YASUYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
<p>Oral and maxillofacial surgery / edited by Lars Andersson, Karl-Erik Kahnberg, M. Anthony (Tony) Pogrel, Andersson, Lars, Kahnberg, Karl-Erik, Pogrel, M. Anthony, : Wiley-Blackwell, 2010</p> <p>外科研修マニュアル / 京都大学大学院医学研究科外科学講座 : 南江堂</p> <p>最新口腔外科学 / 榎本昭二 : 医歯薬出版, 2017</p>					



<b>Lecture No</b>	041058				
<b>Subject title</b>	Practice of Oral and Maxillofacial Surgery	<b>Subject ID</b>			
<b>Instructors</b>	HARADA HIROYUKI, MICHU YASUYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
<p>Oral and maxillofacial surgery / edited by Lars Andersson, Karl-Erik Kahnberg, M. Anthony (Tony) Pogrel, Andersson, Lars, Kahnberg, Karl-Erik, Pogrel, M. Anthony, : Wiley-Blackwell, 2010</p> <p>外科研修マニュアル / 京都大学大学院医学研究科外科学講座 : 南江堂</p> <p>標準口腔外科学 / 榎本昭二 : 医歯薬出版, 2017</p>					

<b>Lecture No</b>	041059				
<b>Subject title</b>	Laboratory practice of Oral and Maxillofacial Surgery	<b>Subject ID</b>			
<b>Instructors</b>	HARADA HIROYUKI, MICHU YASUYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd - 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
<p>Oral and maxillofacial surgery / edited by Lars Andersson, Karl-Erik Kahnberg, M. Anthony (Tony) Pogrel, Andersson, Lars, Kahnberg, Karl-Erik, Pogrel, M. Anthony, : Wiley-Blackwell, 2010</p> <p>外科研修マニュアル / 京都大学大学院医学研究科外科学講座 : 南江堂</p> <p>標準口腔外科学 / 榎本昭二 : 医歯薬出版, 2017</p>					

<b>Lecture No</b>	041060				
<b>Subject title</b>	Lecture of Oral and Maxillofacial Radiology			<b>Subject ID</b>	
<b>Instructors</b>	KURABAYASHI TORU, WATANABE HIROSHI, OBAYASHI NAOTO, YOSHINO NORIO, NAKAMURA SHIN				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Laboratories of Oral and Maxillofacial Radiology (Dental building, 12th floor)					
<b>Course Purpose and Outline</b>					
To obtain enough knowledge for safe and effective use of ionizing radiation in dentistry					
<b>Course Objective(s)</b>					
To understand the characteristics of advanced imaging modalities and how to interpret their images					
<b>Lecture Style</b>					
The format depends on the instructor who teaches the students.					
<b>Course Outline</b>					
Goals/outline: Main objective is to provide students opportunity to study advanced imaging modalities including digital imaging, cone-beam CT, multi-detector row CT and MRI.					
<b>Grading System</b>					
The attitude of the students will be evaluated.					
<b>Prerequisite Reading</b>					
Participants should have enough knowledge of oral and maxillofacial radiology of the undergraduate level.					
<b>TextBook</b>					
歯科放射線学／岡野友宏ほか 編集: 医歯薬出版, 2018 White and Pharoah's Oral Radiology, 8th ed.／Maliya and Lam: Elsevier/Mosby, 2018					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Students who chose this course are asked to send email to the following address before May 8th: Prof. Kurabayashi: kura.orad@tmd.ac.jp					
<b>Email</b>					
KURABAYASHI TORU:kura.oral@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KURABAYASHI TORU:Students can send me email at any time.					

<b>Lecture No</b>	041061				
<b>Subject title</b>	Practice of Oral and Maxillofacial Radiology			<b>Subject ID</b>	
<b>Instructors</b>	KURABAYASHI TORU, WATANABE HIROSHI, OBAYASHI NAOTO, YOSHINO NORIO, NAKAMURA SHIN				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Oral Radiology Clinic (Dental building, B1 floor)					
<b>Course Purpose and Outline</b>					
To obtain enough knowledge for effective use of ionizing radiation in dentistry					
<b>Course Objective(s)</b>					
To understand operation methods and clinical usefulness of CBCT and obtain interpreting skills of their images					
<b>Lecture Style</b>					
The format depends on the instructor who teaches the students.					
<b>Course Outline</b>					
Goals/Outline: The goals of the practice are mainly to understand the usefulness of CBCT for dental use and obtain the professional skills of interpreting CBCT images of clinical cases.					
<b>Grading System</b>					
The attitude and the presentation skill of the students will be evaluated.					
<b>Prerequisite Reading</b>					
Participants should have enough knowledge of radiology of the undergraduate level.					
<b>Reference Materials</b>					
歯科放射線学／岡野友宏ほか 編集: 医歯薬出版, 2018 White and Pharoah's Oral Radiology, 8th ed.／Maliya and Lam: Elsevier/Mosby, 2018					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Students who chose this course are asked to send email to the following address before May 8th. Prof. Kurabayashi: kura.orad@tmd.ac.jp					
<b>Email</b>					
KURABAYASHI TORU:kura.oral@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KURABAYASHI TORU:Students can send me email at any time.					

<b>Lecture No</b>	041062				
<b>Subject title</b>	Laboratory practice of Oral and Maxillofacial Radiology			<b>Subject ID</b>	
<b>Instructors</b>	KURABAYASHI TORU, WATANABE HIROSHI, OBAYASHI NAOTO, YOSHINO NORIO, NAKAMURA SHIN				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Oral Radiology Clinic (Dental building, B1 floor)					
<b>Course Purpose and Outline</b>					
To obtain enough knowledge for effective use of ionizing radiation in dentistry					
<b>Course Objective(s)</b>					
To understand clinical usefulness of MRI/MDCT and obtain interpreting skills of their images					
<b>Lecture Style</b>					
The format depends on the instructor who teaches the students.					
<b>Course Outline</b>					
Goals/Outline: The goals of the practice are mainly to understand the usefulness of MRI/MDCT in oral and maxillofacial region and obtain the professional skills of interpreting their images of clinical cases.					
<b>Grading System</b>					
The attitude and the presentation skill of the students will be evaluated.					
<b>Prerequisite Reading</b>					
Participants should have enough knowledge of radiology of the undergraduate level.					
<b>Reference Materials</b>					
歯科放射線学／岡野友宏ほか 編集: 医歯薬出版, 2018 White and Pharoah's Oral Radiology, 8th ed.／Maliya and Lam: Elsevier/Mosby, 2018					
<b>Important Course Requirements</b>					
None					
<b>Reference URL</b>					
Students who chose this course are asked to send email to the following address before May 8th. Prof. Kurabayashi: kura.orad@tmd.ac.jp					
<b>Email</b>					
KURABAYASHI TORU:kura.oral@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KURABAYASHI TORU:Students can send me email at any time.					

<b>Lecture No</b>	041063				
<b>Subject title</b>	Lecture of Dental Anesthesiology and Orofacial Pain Management	<b>Subject ID</b>			
<b>Instructors</b>	WAKITA RIYO, NISHIYAMA AKIRA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Learners must confirm the venues before attending the seminar, conferences and lectures, because the different places may be used					
<b>Course Purpose and Outline</b>					
Learners will have knowledge concerning systemic management of dental patients, they are local anesthesia, general anesthesia, sedation, safe management of the dental patients. Also what is called dental anesthesiology will be endorsed. For these purposes, basic life sciences such as physiology and biochemistry are focused in the field.					
Additionally, learning the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, motor paralysis and temporomandibular disorders in the orofacial area.					
<b>Course Objective(s)</b>					
Physical evaluations, such as diagnostic methods, laboratory examinations, medical interviews and their practical methods are the main points. From what are derived from the information, prepare tactics will be chosen for systemic management. Also emergency cases can be managed after the program.					
Additionally, learning on the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, abnormal movement, motor paralysis and temporomandibular disorders in the orofacial area, in particular, mechanism of pain, neuropathic pain, so on. Also learning some statistic methods necessary to factor analysis in multifactorial disease.					
<b>Lecture Style</b>					
Learners will be able to attend the seminars, clinical conferences and special lectures available at any time.					
Seminar attendants will present and discuss about their own research process. Clinical conference attendants will be trained in clinical settings in assigned days.					
<b>Course Outline</b>					
Goals/outline:					
Learners will consider generally the basic knowledge of local anesthesia, general anesthesia, psycho-sedation, and systemic management in dentistry, and acquire the pharmacological action and mechanism through discussion, clinical settings and research works. The aims of this course are to clarify the neuro-physiological pain mechanisms and their modulation ways, and to develop the new pain control methods and new local anesthetic methods.					
The other aims are to investigate the pain relative substance and to clarify the occurrence mechanism of refractory pain diseases, and finally to establish the new treatment methods. In addition, lectures on statistics, especially multivariate analysis methods, will be given to clarify the relationship between various factors and persistence or worsening of pain,					
<b>Grading System</b>					
Learners are generally assessed in the base of their attitudes to the lecture, seminar, and discussion including their attendance. Research protocols and relationships of research conferences are also evaluated by repetitions of the related academic conferences.					
<b>Prerequisite Reading</b>					
Learners should have the knowledge of basic dentistry including skill because anesthesiology, pain disorder, chronic pain and TMD for dentistry will be presented. Any introductory textbook can be recommended regarding anesthesiology for dentistry.					
<b>Reference Materials</b>					
Principles and Practice of Anesthesiology, Second Ed, Longnecker et al Mosby					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041064				
<b>Subject title</b>	Practice of Dental Anesthesiology and Orofacial Pain Management	<b>Subject ID</b>			
<b>Instructors</b>	WAKITA RIYO, NISHIYAMA AKIRA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Learners must confirm the venues before attending the seminar, conferences and lectures, because the different places may be used					
<b>Course Purpose and Outline</b>					
Learners will have knowledge concerning systemic management of dental patients, they are local anesthesia, general anesthesia, sedation, safe management of the dental patients. Also what is called dental anesthesiology will be endorsed. For these purposes, basic life sciences such as physiology and biochemistry are focused in the field.					
Additionally, learning the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, motor paralysis and temporomandibular disorders in the orofacial area.					
<b>Course Objective(s)</b>					
Physical evaluations, such as diagnostic methods, laboratory examinations, medical interviews and their practical methods are the main points. From what are derived from the information, prepare tactics will be chosen for systemic management. Also emergency cases can be managed after the program.					
Additionally, learning on the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, abnormal movement, motor paralysis and temporomandibular disorders in the orofacial area, in particular, mechanism of pain, neuropathic pain, so on. Also learning some statistic methods necessary to factor analysis in multifactorial disease.					
<b>Lecture Style</b>					
Learners will be able to attend the seminars, clinical conferences and special lectures available at any time.					
Seminar attendants will present and discuss about their own research process. Clinical conference attendants will be trained in clinical settings in assigned days.					
<b>Course Outline</b>					
Goals/Outline:					
Learners will acquire the physiological and pharmacological basic knowledge and methods in dental clinical settings of local anesthesia, general anesthesia and psycho-sedations, and also learn pathology of chronic pain and paresthesia in the orofacial area including TMD.					
<b>Grading System</b>					
Learners are generally assessed in the base of their attitudes to the lecture, seminar, and discussion including their attendance. Research protocols and relationships of research conferences are also evaluated by repetitions of the related academic conferences.					
<b>Prerequisite Reading</b>					
Learners should have the knowledge of basic dentistry including skill because anesthesiology, pain disorder, chronic pain and TMD for dentistry will be presented. Any introductory textbook can be recommended regarding anesthesiology for dentistry.					
<b>Reference Materials</b>					
Principles and Practice of Anesthesiology, Second Ed, Longnecker et al Mosby					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041065				
<b>Subject title</b>	Laboratory practice of Dental Anesthesiology and Orofacial Pain Management	<b>Subject ID</b>			
<b>Instructors</b>	WAKITA RIYO, NISHIYAMA AKIRA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Learners must confirm the venues before attending the seminar, conferences and lectures, because the different places may be used					
<b>Course Purpose and Outline</b>					
Learners will have knowledge concerning systemic management of dental patients, they are local anesthesia, general anesthesia, sedation, safe management of the dental patients. Also what is called dental anesthesiology will be endorsed. For these purposes, basic life sciences such as physiology and biochemistry are focused in the field.					
Additionally, learning the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, motor paralysis and temporomandibular disorders in the orofacial area.					
<b>Course Objective(s)</b>					
Physical evaluations, such as diagnostic methods, laboratory examinations, medical interviews and their practical methods are the main points. From what are derived from the information, prepare tactics will be chosen for systemic management. Also emergency cases can be managed after the program.					
Additionally, learning on the basis of the diagnosis and treatment of the disease with a pain, abnormal sensation, sensory paralysis, abnormal movement, motor paralysis and temporomandibular disorders in the orofacial area, in particular, mechanism of pain, neuropathic pain, so on. Also learning some statistic methods necessary to factor analysis in multifactorial disease.					
<b>Lecture Style</b>					
Learners will be able to attend the seminars, clinical conferences and special lectures available at any time.					
Seminar attendants will present and discuss about their own research process. Clinical conference attendants will be trained in clinical settings in assigned days.					
<b>Course Outline</b>					
Goals/Outline: The aims of the course are to establish and develop the non-invasive percutaneous and per mucosal drug delivery, and also clarify the pain occurrence mechanism and develop their managements. The reaction to the pain of living body and parafunction such as bruxism will be studied.					
<b>Grading System</b>					
Learners are generally assessed in the base of their attitudes to the lecture, seminar, and discussion including their attendance. Research protocols and relationships of research conferences are also evaluated by repetitions of the related academic conferences.					
<b>Prerequisite Reading</b>					
Learners should have the knowledge of basic dentistry including skill because anesthesiology, pain disorder, chronic pain and TMD for dentistry will be presented. Any introductive textbook can be recommended regarding anesthesiology for dentistry.					
<b>Reference Materials</b>					
Principles and Practice of Anesthesiology, Second Ed, Longnecker et al Mosby					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					



<b>Lecture No</b>	041069					
<b>Subject title</b>	Lecture of Pediatric Dentistry / Special Needs Dentistry			<b>Subject ID</b>		
<b>Instructors</b>	KAKINO SATOKO, KUSUMOTO YASUKA					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6	
<b>Course by the instructor with practical experiences</b>						
Lectures will be partially conducted in English.						
<b>Lecture place</b> Unfixed. The students are advised to make a contact with the instructor in advance.						
<b>Course Purpose and Outline</b>						
<p>In this course, students will search the oro-facial functions, being developed and acquired from newborn period to childhood as well as growth and development of the surrounding tissues and organs in this region. Students will also investigate pathogenesis and pathophysiology of the diseases that disturb development and acquirement of these functions.</p> <p>This course aims to develop theory and methodology not only for the developmental guidance of the oro-facial functions but also for diagnosis, prevention and treatment of related diseases and malfunctions.</p> <p>This course is designed to provide students with opportunity to enhance knowledge about physical, mental and medical conditions of disabilities, and to learn about dental management.</p>						
<b>Course Objective(s)</b> After completion of this course, the students will be able to;						
1) explain the oro-facial functions, such as sucking, mastication, swallowing, and articulation, as well as growth and development of the surrounding tissues and organs in this region.						
2) explain pathogenesis and pathophysiology of the diseases that disturb development and acquirement of these functions.						
3) analyze the oro-facial functions and growth and development of children to develop theory and methodology for the developmental guidance.						
4) analyze pathogenesis and pathophysiology of the diseases that disturb development and acquirement of these functions to develop new methods for the treatment and prevention of the diseases.						
5) Students expand knowledge about physical, mental and medical conditions of disabilities, and consider clinical application.						
<b>Lecture plan</b>						
No	Day	Time	Venue	Topics	授業内容	Instructor
1	6/23	15:00-16:30		発達障害・身体障害	知的能力障害・脳性麻痺 自閉症スペクトラム障害・ Down 症候群	KUSUMOTO YASUKA
2	6/30	15:00-16:30		障害者の歯科治療と口腔保健指導	行動調整法	KUSUMOTO YASUKA
<b>Lecture Style</b> Seminar style						
<b>Course Outline</b> Goals/outline:						
<p>This lecture will guide students to understand the oro-facial functions, such as sucking, mastication, swallowing, and articulation, being developed and acquired from newborn period to childhood as well as growth and development of the surrounding tissues and organs in this region. Students are also taught pathogenesis and pathophysiology of the diseases that disturb development and acquirement of these functions. Students will study theory and methodology not only for the developmental guidance of the oro-facial functions but also for diagnosis, prevention and treatment of related diseases and malfunctions.</p>						
<b>Grading System</b> Be assessed by the attendance/activities in the class and the research planning of each student. Any research report or paper presentation in a meeting will also be used for the comprehensive assessment and grading.						
Lectures on evaluation of neurodevelopmental disorders (intellectual disability, autism spectrum disorder, etc.), and physical disability (cerebral palsy, systemic disease, visual and hearing disorders, etc.), and the methods for management of these disabilities will be given.						
<b>Prerequisite Reading</b> The students need to read the text books prior to the lectures. The presentation file using in the lecture will be distributed in each lecture. Please join in the discussion actively on every lecture.						
<b>Reference Materials</b> Dean, JA, Avery, "Dentistry for the Children and Adolescent", Mosby Elsevier, 2016 Casamassimo, P, "Pediatric Dentistry Infancy Through Adolescence 5th Ed." Elsevier Saunders, 2013.						
<b>Important Course Requirements</b> None						
<b>Note(s) to Students</b> None						

<b>Lecture No</b>	041070				
<b>Subject title</b>	Practice of Pediatric Dentistry / Special Needs Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	KAKINO SATOKO, KUSUMOTO YASUKA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Unfixed. The students are advised to make a contact with the instructor in advance.					
<b>Course Purpose and Outline</b>					
<p>In this course, students will search the oro-facial functions, being developed and acquired from newborn period to childhood as well as growth and development of the surrounding tissues and organs in this region. Students will also investigate pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions.</p> <p>This course aims to develop theory and methodology not only for the developmental guidance of the oro-facial functions but also for diagnosis, prevention and treatment of related diseases and malfunctions.</p> <p>This course is designed to provide students with opportunity to enhance knowledge about physical, mental and medical conditions of disabilities, and to learn about dental management.</p>					
<b>Course Objective(s)</b>					
<p>After completion of this course, the students will be able to:</p> <ol style="list-style-type: none"> <li>1) explain the oro-facial functions, such as sucking, mastication, swallowing, and articulation, as well as growth and development of the surrounding tissues and organs in this region.</li> <li>2) explain pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions.</li> <li>3) analyze the oro-facial functions and growth and development of children to develop theory and methodology for the developmental guidance.</li> <li>4) analyze pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions to develop new methods for the treatment and prevention of the diseases.</li> <li>5) Students expand knowledge about physical, mental and medical conditions of disabilities, and consider clinical application.</li> </ol>					
<b>Lecture Style</b>					
Seminar style					
<b>Course Outline</b>					
<p>Goals/outline:</p> <p>The comprehensive dental practice for child patients will guide student to understand the developmental processes of the oro-facial functions, and to study the outline of the method for diagnosis, prevention and treatment of the related diseases and malfunctions. The practice will also provide students to learn theory and method for the developmental guidance of these functions in the clinical viewpoints.</p> <p>Students join the clinical work at Special Care Clinic to master diagnosis, treatment planning and behavior management for patients with special needs.</p>					
<b>Grading System</b>					
<p>Be assessed by the attendance/activities in the class and the research planning of each student. Any research report or paper presentation in a meeting will also be used for the comprehensive assessment and grading.</p>					
<b>Prerequisite Reading</b>					
<p>The students need to read the text books prior to the lectures. The presentation file using in the lecture will be distributed in each lecture. Please join in the discussion actively on every lecture.</p>					
<b>Reference Materials</b>					
<p>Dean, JA, Avery, "Dentistry for the Children and Adolescent", Mosby Elsevier, 2016</p> <p>Casamassimo, P, "Pediatric Dentistry Infancy Through Adolescence 5th Ed." Elsevier Saunders, 2013.</p>					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041071				
<b>Subject title</b>	Laboratory practice of Pediatric Dentistry / Special Needs Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	KAKINO SATOKO, KUSUMOTO YASUKA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Unfixed. The students are advised to make a contact with the instructor in advance.					
<b>Course Purpose and Outline</b>					
<p>In this course, students will search the oro-facial functions, being developed and acquired from newborn period to childhood as well as growth and development of the surrounding tissues and organs in this region. Students will also investigate pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions.</p> <p>This course aims to develop theory and methodology not only for the developmental guidance of the oro-facial functions but also for diagnosis, prevention and treatment of related diseases and malfunctions.</p> <p>This course is designed to provide students with opportunity to enhance knowledge about physical, mental and medical conditions of disabilities, and to learn about dental management.</p>					
<b>Course Objective(s)</b>					
<p>After completion of this course, the students will be able to:</p> <ol style="list-style-type: none"> <li>1) explain the oro-facial functions, such as sucking, mastication, swallowing, and articulation, as well as growth and development of the surrounding tissues and organs in this region.</li> <li>2) explain pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions.</li> <li>3) analyze the oro-facial functions and growth and development of children to develop theory and methodology for the developmental guidance.</li> <li>4) analyze pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions to develop new methods for the treatment and prevention of the diseases.</li> </ol> <p>Students expand knowledge about physical, mental and medical conditions of disabilities, and consider clinical application.</p>					
<b>Lecture Style</b> Seminar style					
<b>Course Outline</b>					
<p>Goals/outline:</p> <p>The students will analyze the developmental processes of the oro-facial functions as well as the growth processes of the related organs by the morphological, physiological and biological aspects to develop the method for the developmental guidance of these functions. The students also analyze pathogenesis and pathophysiology of the diseases that disturb development and acquisition of these functions to develop new methods for the treatment and prevention of the diseases.</p> <p>Students participate in research concerning patients with special needs, and learn the basic methods and skills for experimentation</p>					
<b>Grading System</b>					
<p>Be assessed by the attendance/activities in the class and the research planning of each student. Any research report or paper presentation in a meeting will also be used for the comprehensive assessment and grading.</p>					
<b>Prerequisite Reading</b>					
<p>The students need to read the text books prior to the lectures. The presentation file using in the lecture will be distributed in each lecture. Please join in the discussion actively on every lecture.</p>					
<b>Reference Materials</b>					
<p>Dean, JA, Avery, "Dentistry for the Children and Adolescent", Mosby Elsevier, 2016</p> <p>Casamassimo, P, "Pediatric Dentistry Infancy Through Adolescence 5th Ed." Elsevier Saunders, 2013.</p>					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041072				
<b>Subject title</b>	Lecture of Orthodontic Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO TAKASHI, MATSUMOTO YOSHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b> Contact to the person in charge beforehand.					
<b>Course Purpose and Outline</b>					
<p>Orthodontic Science is one of the dental sciences which propose to control teeth, periodontium, and craniofacial growth and development in equilibrium with the whole body, and also deals with the prevention and/or treatment of malocclusion and related disorders, by which the alteration of maxillofacial function with aging could be kept to the most suitable condition.</p> <p>The purpose of this course is for a doctoral student to master basic and the clinical method for orthodontic research, and to be able to be accepted papers. Moreover, the purpose of this course is to educate orthodontists who have knowledge and clinical technique about basic and clinical orthodontic science.</p> <ol style="list-style-type: none"> <li>1) To explain the unhealthy physiological condition of malocclusion and deepen the scientific basis for orthodontic treatment.</li> <li>2) To understand the biological reaction and adaptation of occlusal tissues to mechanical stresses such as occlusal force or orthodontic force, and also the changes with aging.</li> <li>3) To explain the art for controlling the morphologic and functional problems of occlusion in orthodontic treatment, from the view points of biomaterials and biomechanics.</li> <li>4) To enlighten the social dentistry for the needs and demands of orthodontic treatment.</li> </ol>					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1) To acquire suitable and sufficient learning and thinking ability about orthodontic study and reach the capability and knowledge to promote each subject of research logically</li> <li>2) To acquire sufficient knowledge to apply for the certified doctor of Japan Orthodontic Society, and clinical experience by obtaining suitable and sufficient learning and experience about orthodontic treatment</li> </ol>					
<b>Lecture Style</b>					
Generally in a small class.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
Goals/Outline:					
Available programs:					
Lecture Apr. 14- Feb. 16 every Tuesday, 9:30-12:00					
Special Lecture as needed					
Seminar as needed					
<b>Grading System</b>					
Students will be judged and evaluated comprehensively according to the participation in discussion, argument, exercise, research practice, presentation and speech. In addition, students will be evaluated comprehensively based on the details of research, the grade of the involvement in the various researches or research meetings and the number of presentation in an academic society.					
<b>Prerequisite Reading</b>					
Prepare in advance when a reference book or paper is instructed.					
<b>TextBook</b> Contemporary Orthodontics 6th edition / Proffit WR: Mosby, 2018					
<b>Reference Materials</b>					
Other reference book and papers will be instructed each time.					
<b>Important Course Requirements</b>					
Please offer in advance when inevitably absent.					
<b>Note(s) to Students</b> The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.					

<b>Lecture No</b>	041073				
<b>Subject title</b>	Practice of Orthodontic Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO TAKASHI, MATSUMOTO YOSHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b> Contact to the person in charge beforehand.					
<b>Course Purpose and Outline</b>					
<p>Orthodontic Science is one of the dental sciences which propose to control teeth, periodontium, and craniofacial growth and development in equilibrium with the whole body, and also deals with the prevention and/or treatment of malocclusion and related disorders, by which the alteration of maxillofacial function with aging could be kept to the most suitable condition.</p> <p>The purpose of this course is for a doctoral student to master basic and the clinical method for orthodontic research, and to be able to be accepted papers. Moreover, the purpose of this course is to educate orthodontists who have knowledge and clinical technique about basic and clinical orthodontic science.</p> <ol style="list-style-type: none"> <li>1) To explain the unhealthy physiological condition of malocclusion and deepen the scientific basis for orthodontic treatment.</li> <li>2) To understand the biological reaction and adaptation of occlusal tissues to mechanical stresses such as occlusal force or orthodontic force, and also the changes with aging.</li> <li>3) To explain the art for controlling the morphologic and functional problems of occlusion in orthodontic treatment, from the view points of biomaterials and biomechanics.</li> <li>4) To enlighten the social dentistry for the needs and demands of orthodontic treatment.</li> </ol>					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1) To acquire suitable and sufficient learning and thinking ability about orthodontic study and reach the capability and knowledge to promote each subject of research logically</li> <li>2) To acquire sufficient knowledge to apply for the certified doctor of Japan Orthodontic Society, and clinical experience by obtaining suitable and sufficient learning and experience about orthodontic treatment</li> </ol>					
<b>Lecture Style</b> Generally in a small class.					
<b>Course Outline</b> Check with the teacher in charge for the program which is not specifically scheduled.					
<p>Goals/Outline:</p> <p>To understand the alteration of occlusal function and morphology, and to explain the pathological condition of malocclusion from the viewpoint of physiology, biomechanics, biology and sociology.</p> <p>Available programs:</p> <p>Training for clinical examination as needed</p> <p>Clinical practice (see patients) 4.5 hour/week</p> <p>Clinical study by observation (treatments, diagnoses) every Tuesday and Friday, 9:00–12:00</p> <p>Clinical Conference as needed</p> <p>Training for diagnosis and treatment planning (basic skill, typodont) as needed</p> <p>Seminar for Sociology as needed</p> <p>Department Seminar every Wednesday and Friday, 17:00–19:00</p>					
<b>Grading System</b> Students will be judged and evaluated comprehensively according to the participation in discussion, argument, exercise, research practice, presentation and speech. In addition, students will be evaluated comprehensively based on the details of research, the grade of the involvement in the various researches or research meetings and the number of presentation in an academic society.					
<b>Prerequisite Reading</b> Prepare in advance when a reference book or paper is instructed.					
<b>TextBook</b> Contemporary Orthodontics 6th edition / Proffit WR: Mosby, 2018					
<b>Reference Materials</b> Other reference book and papers will be instructed each time.					
<b>Important Course Requirements</b> Please offer in advance when inevitably absent.					
<b>Note(s) to Students</b> The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.					

<b>Lecture No</b>	041074				
<b>Subject title</b>	Laboratory practice of Orthodontic Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO TAKASHI, MATSUMOTO YOSHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
Contact to the person in charge beforehand.					
<b>Course Purpose and Outline</b>					
Orthodontic Science is one of the dental sciences which propose to control teeth, periodontium, and craniofacial growth and development in equilibrium with the whole body, and also deals with the prevention and/or treatment of malocclusion and related disorders, by which the alteration of maxillofacial function with aging could be kept to the most suitable condition.					
The purpose of this course is for a doctoral student to master basic and the clinical method for orthodontic research, and to be able to be accepted papers. Moreover, the purpose of this course is to educate orthodontists who have knowledge and clinical technique about basic and clinical orthodontic science.					
1) To explain the unhealthy physiological condition of malocclusion and deepen the scientific basis for orthodontic treatment.					
2) To understand the biological reaction and adaptation of occlusal tissues to mechanical stresses such as occlusal force or orthodontic force, and also the changes with aging.					
3) To explain the art for controlling the morphologic and functional problems of occlusion in orthodontic treatment, from the view points of biomaterials and biomechanics.					
4) To enlighten the social dentistry for the needs and demands of orthodontic treatment.					
<b>Course Objective(s)</b>					
1) To acquire suitable and sufficient learning and thinking ability about orthodontic study and reach the capability and knowledge to promote each subject of research logically					
2) To acquire sufficient knowledge to apply for the certified doctor of Japan Orthodontic Society, and clinical experience by obtaining suitable and sufficient learning and experience about orthodontic treatment					
<b>Lecture Style</b> Generally in a small class.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
Goals/Outline:					
To understand the procedure of biological reaction and adaptation of occlusal system to the orthodontic stimuli, including the influence of aging, and to provide the control of the surroundings of the occlusal system.					
Available programs:					
Progress meeting as needed					
Research seminar as needed					
<b>Grading System</b>					
Students will be judged and evaluated comprehensively according to the participation in discussion, argument, exercise, research practice, presentation and speech. In addition, students will be evaluated comprehensively based on the details of research, the grade of the involvement in the various researches or research meetings and the number of presentation in an academic society.					
<b>Prerequisite Reading</b> Prepare in advance when a reference book or paper is instructed.					
<b>TextBook</b> Contemporary Orthodontics 6th edition / Proffit WR: Mosby, 2018					
<b>Reference Materials</b> Other reference book and papers will be instructed each time.					
<b>Important Course Requirements</b> Please offer in advance when inevitably absent.					
<b>Note(s) to Students</b> The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.					

<b>Lecture No</b>	041075				
<b>Subject title</b>	Lecture of Cariology and Operative Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	TAGAMI JIYUNJI, OTSUKI MASAYUKI, NAKAJIMA MASATOSHI, HIRAISHI Noriko, YOSHIKAWA TAKAKO, INOUE GO, HOSAKA KEIICHI, TAKAHASHI RENA, Yu Kadota, Yoh En, Hidenori Hamba, Yasushi Shimada, TAGAMI Atsuko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
English is used in all lectures.					
<b>Lecture place</b> Please ask a contact person.					
<b>Course Purpose and Outline</b> To learn about diagnosis, prevention and treatment of dental caries and other diseases of dental hard tissues and the related dental materials and devices and to learn research methods of these fields.					
<b>Course Objective(s)</b> To be able to explain diseases of dental hard tissues To be able to explain prevention and treatment of diseases of dental hard tissues To be able to explain materials and devices for prevention and treatment of dental hard tissues To be able to explain and perform the research for those fields					
<b>Lecture Style</b> English is used in all lectures.					
<b>Course Outline</b> Goals/outline: The goal of this course is to acquire the knowledge about the dental caries including diagnosis, prevention, treatment and restorative materials and to integrate it based on operative dentistry.					
<b>Grading System</b> Scored by attendance, examination and presentation					
<b>Prerequisite Reading</b> Related articles and textbook should be read before lecture.					
<b>Reference Materials</b> Fundamentals of Operative Dentistry, Summitt JB et.al. Art & Science of Operative Dentistry, Roberson TM et. Al.					
<b>Important Course Requirements</b> The score is evaluated based on attendance of the lecture, examination, presentation and publication of reserch.					
<b>Note(s) to Students</b> To take Lecture is required for participation in Practice and Lab.					
<b>Reference URL</b> WebClass <a href="https://lib02.tmd.ac.jp/webclass/login.php">https://lib02.tmd.ac.jp/webclass/login.php</a>					

<b>Lecture No</b>	041076				
<b>Subject title</b>	Practice of Cariology and Operative Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	TAGAMI JIYUNJI, OTSUKI MASAYUKI, NAKAJIMA MASATOSHI, HIRAISHI Noriko, YOSHIKAWA TAKAKO, INOUE GO, HOSAKA KEIICHI, TAKAHASHI RENA, Yu Kadota, Yoh En, Hidenori Hamba, Yasushi Shimada, TAGAMI Atsuko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
English is used in all lectures.					
<b>Lecture place</b> Please ask a contact person.					
<b>Course Purpose and Outline</b> To learn about diagnosis, prevention and treatment of dental caries and other diseases of dental hard tissues and the related dental materials and devices and to learn research methods of these fields.					
<b>Course Objective(s)</b> To be able to explain diseases of dental hard tissues To be able to explain prevention and treatment of diseases of dental hard tissues To be able to explain materials and devices for prevention and treatment of dental hard tissues To be able to explain and perform the research for those fields					
<b>Lecture Style</b> Practice and Lab are organized in small group.					
<b>Course Outline</b> Goals/Outline: The goal of this course is to understand basic and clinical research about cariology and operative dentistry and to form a research project of own research.					
<b>Grading System</b> Scored by attendance and attitude.					
<b>Prerequisite Reading</b> Related articles and textbook should be read before lecture.					
<b>Reference Materials</b> Fundamentals of Operative Dentistry, Summitt JB et.al. Art & Science of Operative Dentistry, Roberson TM et. Al.					
<b>Important Course Requirements</b> The score is evaluated based on attendance of the lecture, examination, presentation and publication of research.					
<b>Note(s) to Students</b> To take Lecture is required for participation in Practice and Lab.					



<b>Lecture No</b>	041077				
<b>Subject title</b>	Laboratory practice of Cariology and Operative Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	TAGAMI JIYUNJI, OTSUKI MASAYUKI, NAKAJIMA MASATOSHI, HIRAIISHI Noriko, YOSHIKAWA TAKAKO, INOUE GO, HOSAKA KEIICHI, TAKAHASHI RENA, Yu Kadota, Yoh En, Hidenori Hamba, Yasushi Shimada, TAGAMI Atsuko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
English is used in all lectures.					
<b>Lecture place</b> Please ask a contact person.					
<b>Course Purpose and Outline</b> To learn about diagnosis, prevention and treatment of dental caries and other diseases of dental hard tissues and the related dental materials and devices and to learn research methods of these fields.					
<b>Course Objective(s)</b> To be able to explain diseases of dental hard tissues To be able to explain prevention and treatment of diseases of dental hard tissues To be able to explain materials and devices for prevention and treatment of dental hard tissues To be able to explain and perform the research for those fields					
<b>Lecture Style</b> Practice and Lab are organized in small group.					
<b>Course Outline</b> Goals/Outline: The goal of this course is to master the experimental technique to perform own project.					
<b>Grading System</b> Scored by attendance, examination and presentation					
<b>Prerequisite Reading</b> Related articles and textbook should be read before lecture.					
<b>Reference Materials</b> Fundamentals of Operative Dentistry, Summitt JB et al. Art & Science of Operative Dentistry, Roberson TM et. Al.					
<b>Important Course Requirements</b> The score is evaluated based on attendance of the lecture, examination, presentation and publication of reserch.					
<b>Note(s) to Students</b> To take Lecture is required for participation in Practice and Lab.					

<b>Lecture No</b>	041078				
<b>Subject title</b>	Lecture of Fixed Prosthodontics	<b>Subject ID</b>			
<b>Instructors</b>	MIURA HIROYUKI, YOSHIDA KEIICHI, NOZAKI KOSUKE, KOMADA WATARU, SHIN CHIHARU, OTAKE SHIHO, OMORI SATOSHI, NEMOTO REINA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Refer to contact person					
<b>Course Purpose and Outline</b> Based on up-to-date latest research, Students learn and discuss the crown restoration adapted to the stomatognathic function and the biocompatible materials in this course.					
<b>Course Objective(s)</b> Acquisition of the crown restoration adapted to the stomatognathic function Understanding of latest biomaterials in the crown restoration					
<b>Lecture Style</b> Small group instruction					
<b>Course Outline</b> Goals/outline: Integrated learning of matters related to recover and maintain proper eating functions. Commentary from a biological standpoint on the methods for recovering from functional and cosmetic disturbances of oral and maxillofacial area caused by defect and loss of teeth					
<b>Grading System</b> The attitude toward the lecture, practical works, exercise and research training and the participation situations, such as announcements or presentations, are comprehensively evaluated. In addition, synthetic evaluation is performed based on the details of research or the level of involvement to the researches.					
<b>Prerequisite Reading</b> In the case of handouts were distributed beforehand, these documents read thoroughly					
<b>Reference Materials</b> Refer to the handouts distributed					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041079				
<b>Subject title</b>	Practice of Fixed Prosthodontics	<b>Subject ID</b>			
<b>Instructors</b>	MIURA HIROYUKI, YOSHIDA KEIICHI, NOZAKI KOSUKE, KOMADA WATARU, SHIN CHIHARU, OTAKE SHIHO, OMORI SATOSHI, NEMOTO REINA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Refer to contact person					
<b>Course Purpose and Outline</b> Based on up-to-date latest research, Students learn and discuss the crown restoration adapted to the stomatognathic function and the biocompatible materials in this course.					
<b>Course Objective(s)</b> Acquisition of the crown restoration adapted to the stomatognathic function Understanding of latest biomaterials in the crown restoration					
<b>Lecture Style</b> Small group instruction					
<b>Course Outline</b> Goals/Outline: Learning of mandibular movements and reproducibility of mandibular movements on the articulator Learning of mechanism of semi-adjustable articulator and its effect on occlusal surface configuration of prosthetics					
<b>Grading System</b> The attitude toward the lecture, practical works, exercise and research training and the participation situations, such as announcements or presentations, are comprehensively evaluated. In addition, synthetic evaluation is performed based on the details of research or the level of involvement to the researches.					
<b>Prerequisite Reading</b> In the case of handouts were distributed beforehand, these documents read thoroughly					
<b>Reference Materials</b> Refer to the handouts distributed					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041080				
<b>Subject title</b>	Laboratory practice of Fixed Prosthodontics			<b>Subject ID</b>	
<b>Instructors</b>	MIURA HIROYUKI, YOSHIDA KEIICHI, NOZAKI KOSUKE, KOMADA WATARU, SHIN CHIHARU, OTAKE SHIHO, OMORI SATOSHI, NEMOTO REINA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Refer to contact person					
<b>Course Purpose and Outline</b> Based on up-to-date latest research, Students learn and discuss the crown restoration adapted to the stomatognathic function and the biocompatible materials in this course.					
<b>Course Objective(s)</b> Acquisition of the crown restoration adapted to the stomatognathic function Understanding of latest biomaterials in the crown restoration					
<b>Lecture Style</b> Small group instruction					
<b>Course Outline</b> Goals/Outline: Learning of objective diagnosis method of oral functions Learning of experimental methodology for measurements of mandibular movements, and masticatory efficiency and functional testing of occlusal functions (tooth contact, tooth displacement, occlusal force)					
<b>Grading System</b> The attitude toward the lecture, practical works, exercise and research training and the participation situations, such as announcements or presentations, are comprehensively evaluated. In addition, synthetic evaluation is performed based on the details of research or the level of involvement to the researches.					
<b>Prerequisite Reading</b> In the case of handouts were distributed beforehand, these documents read thoroughly					
<b>Reference Materials</b> Refer to the handouts distributed					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041081				
<b>Subject title</b>	Lecture of Pulp Biology and Endodontics			<b>Subject ID</b>	
<b>Instructors</b>	OKJI TAKASHI, SUNAKAWA MITSUHIRO, KAWASHIMA NOBUYUKI, KANEKO Tomoatsu, EBIHARA ARATA, WATANABE SATOSHI, TAZAWA Kenrto				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
The lectures are presented in 3rd Lecture Room on the 2nd floor of Building 7 (Faculty of Dentistry and Animal Research Center Building). The venues for the other programs will be announced during the lecture course.					
<b>Course Purpose and Outline</b>					
This course aims to provide students with current knowledge about (i) pathobiology of pulpal and periradicular diseases, (ii) pulp regeneration and (iii) advanced strategies for endodontic diagnosis and treatment, in order to improve students' clinical problem-solving ability.					
<b>Course Objective(s)</b>					
After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicular diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.					
<b>Lecture Style</b>					
All lectures are conducted in English. Lectures may be held as live TV lectures linked to foreign universities. Sufficient question and discussion time is allocated for the student to actively engage in the above programs.					
<b>Course Outline</b>					
The lectures deal with current knowledge on (i) immunological and pathophysiological mechanisms involved in the development of pulpal and periradicular diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) clinical topics in endodontics, such as diagnostic imaging, vital pulp therapy and application of lasers. Available programs: Lecture (every Friday from December to February, 10:00~12:00) Special Lecture (Thursday; details will be announced) Journal Club (every Thursday, 17:00~18:00)					
<b>Grading System</b>					
Grade-point evaluation (4, 3, 2, 1, 0) is made for each student at the end of the course, based on the efforts made by the student toward the lecture.					
<b>Prerequisite Reading</b>					
Students should confirm the basic knowledge prior to each class, referring to related papers and references shown below.					
<b>Reference Materials</b>					
1. Seltzer and Bender's Dental Pulp. ed. by Hargreaves KM, Goodis H & Tay FR, 2nd ed., Quintessence Publishing, 2012. 2. Pathways of the Pulp. ed. by Cohen S, Hargreaves KM, Keiser K, 11th ed., Mosby, 2016. 3. Essential Endodontology. ed. by Ørstavik D & Pitt Ford T, Blackwell-Munksgaard, 2nd ed., 2008.					
<b>Email</b>					
OKJI TAKASHI:Kawashima.n.endo@tmd.ac.jp (N. Kawashima)					

<b>Lecture No</b>	041082				
<b>Subject title</b>	Practice of Pulp Biology and Endodontics	<b>Subject ID</b>			
<b>Instructors</b>	OKJI TAKASHI, SUNAKAWA MITSUHIRO, KAWASHIMA NOBUYUKI, KANEKO Tomoatsu, EBIHARA ARATA, WATANABE SATOSHI, TAZAWA Kennto				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
The venues will be announced during the lecture course.					
<b>Course Purpose and Outline</b>					
This course aims to provide students with current knowledge about (i) pathobiology of pulpal and perradicular diseases, (ii) pulp regeneration and (iii) advanced strategies for endodontic diagnosis and treatment, in order to improve students' clinical problem-solving ability.					
<b>Course Objective(s)</b>					
After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicular diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.					
<b>Lecture Style</b>					
Partial classes are taught in English. Sufficient question and discussion time is allocated for the student to actively engage in the above programs.					
<b>Course Outline</b>					
All students are asked to exercise endodontic problem-solving of various clinical cases, including diagnosis and management of dental pain, preservation of the tooth pulp, strategies to deal with the complex root canal system, and surgical endodontics.					
Available program:					
Clinical conference (every Thursday, 18:00~19:00)					
<b>Grading System</b>					
Grade-point evaluation (4, 3, 2, 1, 0) is made for each student at the end of the course, based on the efforts made by the student.					
<b>Prerequisite Reading</b>					
Students should confirm the basic knowledge prior to each class, referring to related papers and references shown below.					
<b>Reference Materials</b>					
1. Seltzer and Bender's Dental Pulp. ed. by Hargreaves KM, Goodis H & Tay FR, 2nd ed., Quintessence Publishing, 2012.					
2. Pathways of the Pulp. ed. by Cohen S, Hargreaves KM, Keiser K, 11th ed., Mosby, 2016.					
3. Essential Endodontology. ed. by Ørstavik D & Pitt Ford T, Blackwell-Munksgaard, 2nd ed., 2008.					
<b>Email</b>					
OKJI TAKASHI:Kawashima.n.endo@tmd.ac.jp (N. Kawashima)					

<b>Lecture No</b>	041083				
<b>Subject title</b>	Laboratory practice of Pulp Biology and Endodontics	<b>Subject ID</b>			
<b>Instructors</b>	OKJI TAKASHI, SUNAKAWA MITSUHIRO, KAWASHIMA NOBUYUKI, KANEKO Tomoatsu, EBIHARA ARATA, WATANABE SATOSHI, TAZAWA Kennto				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
The venues will be announced during the lecture course.					
<b>Course Purpose and Outline</b>					
This course aims to provide students with current knowledge about (i) pathobiology of pulpal and perradicular diseases, (ii) pulp regeneration and (iii) advanced strategies for endodontic diagnosis and treatment, in order to improve students' clinical problem-solving ability.					
<b>Course Objective(s)</b>					
After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicular diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.					
<b>Lecture Style</b>					
Partial classes are taught in English. Sufficient question and discussion time is allocated for the student to actively engage in the above programs.					
<b>Course Outline</b>					
Students can participate in research programs, such as laser application to endodontics and immunohistochemistry. Available program: Participation in a research group as needed.					
<b>Grading System</b>					
Grade-point evaluation (4, 3, 2, 1, 0) is made for each student at the end of the course, based on the efforts made by the student.					
<b>Prerequisite Reading</b>					
Students should confirm the basic knowledge prior to each class, referring to related papers and references shown below.					
<b>Reference Materials</b>					
1. Seltzer and Bender's Dental Pulp. ed. by Hargreaves KM, Goodis H & Tay FR, 2nd ed., Quintessence Publishing, 2012. 2. Pathways of the Pulp. ed. by Cohen S, Hargreaves KM, Keiser K, 11th ed., Mosby, 2016. 3. Essential Endodontology. ed. by Ørstavik D & Pitt Ford T, Blackwell-Munksgaard, 2nd ed., 2008.					
<b>Email</b>					
OKJI TAKASHI:Kawashima.n.endo@tmd.ac.jp (N. Kawashima)					

<b>Lecture No</b>	041084				
<b>Subject title</b>	Lecture of Removable Partial Prosthodontics			<b>Subject ID</b>	
<b>Instructors</b>	WAKABAYASHI NORIYUKI, FUEKI KENJI, UENO TAKESHI, WADA JUNICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
English and Japanese will be used in the lectures. The language will be chosen based on students' ability.					
<b>Lecture place</b>					
Dental Building North, 11F Removable Partial Prosthodontics Meeting Room Check <a href="http://www.tmd.ac.jp/pro/index.html">http://www.tmd.ac.jp/pro/index.html</a> for verification.					
<b>Course Purpose and Outline</b>					
The purpose of the Removable Partial Prosthodontics course is to provide advanced knowledge in specialty of Prosthodontics and related research. The postgraduate students who are enrolled concurrently in wide range of oral health sciences are welcomed to our class.					
<b>Course Objective(s)</b>					
The course objectives are to gain fundamental knowledge about the Prosthodontics research methodology and its updated trend that are benefit for individual research directions.					
<b>Lecture Style</b>					
All lectures except for special lectures are in English. Every candidate has to address his or her opinion freely to the others.					
<b>Course Outline</b>					
Aims/outline: Professor and associate professors of Removable Partial Prosthodontics provides lectures on their specialty research areas in Prosthodontics. Following lecture titles outline the content of this special course; "Two points of research view for tooth loss", "Clinical evaluation of masticatory performance", "Clinical research design", "Biomaterials research in Prosthodontics", "Introduction to stress analysis" and "Measurement and analysis of jaw movement". Goals/Objectives: The program objectives are to provide our concept for Prosthodontics research and to equip students to critically analyze individual research directions.					
<b>Grading System</b>					
Comprehensive assessment is planned based on the presence, practice and labo-work and the completion of the theme. At least 4 presences of all 7 lectures above are necessary to finish this course.					
<b>Prerequisite Reading</b>					
Visit our website for latest published articles: <a href="http://www.tmd.ac.jp/pro/Research/Research.html">http://www.tmd.ac.jp/pro/Research/Research.html</a>					
<b>Reference Materials</b>					
Designing Clinical Research: Hulley et al., 4th edit, 2013, Lippincott Williams & Wilkins					
<b>Note(s) to Students</b>					
Notice to our website for change of schedule and lecture hall.					
<b>Instructor's Contact Information</b>					
WAKABAYASHI NORIYUKI:For appointment, contact by email to wakabayashi.rpro@tmd.ac.jp					



<b>Lecture No</b>	041085				
<b>Subject title</b>	Practice of Removable Partial Prosthodontics	<b>Subject ID</b>			
<b>Instructors</b>	WAKABAYASHI NORIYUKI, FUEKI KENJI, UENO TAKESHI, WADA JUNICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b> Building No.3, 3F Prosthodontic Demonstration Room Check our website for latest schedule <a href="http://www.tmd.ac.jp/pro/index.html">http://www.tmd.ac.jp/pro/index.html</a>					
<b>Course Purpose and Outline</b> The purpose of the Removable Partial Prosthodontics course is to provide advanced knowledge in specialty of Prosthodontics and related research. The postgraduate students who are enrolled concurrently in wide range of oral health sciences are welcomed to our class.					
<b>Course Objective(s)</b> The course objectives are to gain fundamental knowledge about the prosthodontic treatment for partially edentulous patients according to basic training and discussion over the case presentations.					
<b>Lecture Style</b> All classes are taught in Japanese. Every candidate has to address his or her opinion freely to the others.					
<b>Course Outline</b> Practices and discussions on clinical diagnosis, decision-making, and prosthodontic treatment procedures through basic training and case presentations.					
<b>Grading System</b> Comprehensive assessment is planned based on the presence, practice and labo-work and the completion of the theme. At least 4 presences of all 6 lectures above are necessary to finish this course.					
<b>Prerequisite Reading</b> Visit our website for latest published articles: <a href="http://www.tmd.ac.jp/pro/Research/Research.html">http://www.tmd.ac.jp/pro/Research/Research.html</a>					
<b>Reference Materials</b> パーシャルデンチャー活用力：ライフコースに沿った基本から使いこなしまで／和田淳一郎, 高市敦士, 若林則幸著, 和田, 淳一郎, 高市, 敦士, 若林, 則幸.; 医歯薬出版, 2016					
<b>Note(s) to Students</b> Notice to our website for change of schedule and lecture hall.					
<b>Instructor's Contact Information</b> WAKABAYASHI NORIYUKI: For appointment, contact by email to wakabayashi.pro@tmd.ac.jp					

<b>Lecture No</b>	041086				
<b>Subject title</b>	Laboratory practice of Removable Partial Prosthodontics			<b>Subject ID</b>	
<b>Instructors</b>	WAKABAYASHI NORIYUKI, FUEKI KENJI, UENO TAKESHI, WADA JUNICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are given in English.					
<b>Lecture place</b>					
Building 7, 3F Prosthodontic Lecture Room					
<b>Course Purpose and Outline</b>					
The purpose of this course is to provide fundamental knowledge for research related to research ethics, research protocol, statistical analysis, oral/poster presentation and paper preparation.					
<b>Course Objective(s)</b>					
The goals of this course are to gain fundamental knowledge about research ethics, research protocol, statistical analysis, oral/poster presentation and paper preparation.					
<b>Lecture Style</b>					
All lectures are given in Japanese. The course materials are provided in Japanese and English.					
<b>Course Outline</b>					
Fundamental knowledge about research ethics, research protocol, statistical analysis, oral/poster presentation and paper preparation will be given.					
<b>Grading System</b>					
Comprehensive assessment is planned based on the presence, practice and the completion of the theme. At least 4 presences of all 6 lectures above are necessary to finish this course.					
<b>Prerequisite Reading</b>					
Visit our website for latest published articles: <a href="http://www.tmd.ac.jp/pro/Research/Research.html">http://www.tmd.ac.jp/pro/Research/Research.html</a>					
<b>Reference Materials</b>					
医学的研究のデザイン：研究の質を高める疫学的アプローチ／Stephen B. Hulley [ほか] 著；木原雅子, 木原正博訳,Hulley, Stephen B.,Cummings, Steven R.,Browner, Warren S.,Grady, Deborah G.,Newman, Thomas B.,木原, 雅子,木原, 正博.:メディカル・サイエンス・インターナショナル, 2014 今日から使える医療統計／新谷歩著,新谷, 歩.:医学書院, 2015 必ずアクセプトされる医学英語論文完全攻略 50 の鉄則／康永秀生 著,康永, 秀生.:金原出版, 2016 Designing Clinical Research／Stephen B. Hulley:Lippincott Williams & Wilkins, 2013					
<b>Note(s) to Students</b>					
Notice to our website for change of schedule and lecture hall.					
<b>Instructor's Contact Information</b>					
WAKABAYASHI NORIYUKI:For appointment, contact by email to wakabayashi.rpro@tmd.ac.jp					

<b>Lecture No</b>	041087				
<b>Subject title</b>	Lecture of Oral Implantology and Regenerative Dental Medicine	<b>Subject ID</b>			
<b>Instructors</b>	SHIOTA MAKOTO, TACHIKAWA NORIKO, KURODA SHINJI, NAKATA HIDEMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Dental Hospital, 7th floor), Center for Experimental Animals					
<b>Course Purpose and Outline</b>					
Goals/outline: Oral rehabilitation with dental implants (dental implant treatment) for partially or fully edentulous patients has been effective and predictable. The students will be able to learn the characteristics of dental implant treatment and dental implant materials and to renew knowledge concerning all steps in dental implant treatment including clinical examinations, treatment planning, implant surgery, prosthodontics procedures and maintenance. In dental implant treatment bone augmentation and soft tissue management are frequently required. In this course, regenerative treatments, which relate to dental implant treatment, will be presented and discussed. Especially, future possibility of regenerative medicine in dental field will be discussed. The purposes of this course are to understand current dental implant treatment and the related regenerative dental medicine and to predict the future directions of researches in this field.					
<b>Course Objective(s)</b>					
The objectives of this program is to be possible to explain the scientific background the merits and the demerits of modern dental implant treatment and the detail of the related augmentation techniques of soft and hard tissues.					
<b>Lecture Style</b>					
Lectures by the instructors and presentations by the participants regarding the given subjects					
<b>Course Outline</b>					
The purpose of this program to understand the current dental implant treatment, clinical applications and resresearches of the related tissue regenerations.  Available programs: Lecture(Latter Semester): Oct. 17- Mar. 19 Thursday 18:30 - 20:30 Seminar and Journal Club ①Tuesday 18:00 - 19:00, Monday 18:00 -19:00 ②Friday (2nd, 4th) 8:00 - 9:00					
<b>Grading System</b>					
based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.					
<b>Prerequisite Reading</b>					
Knowledges in cell biology, biological material science, oral anatomy, phisiology, pharmacology, radiology, internal medicine, oral surgery, periodontology, prosthodontics are required for this program. Read the textbooks of these subjects. Please be able to make a presentation of your related or intersted studies published in international journals briefly (1~2min).					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>•Clinical periodontology and implant dentistry.Jan Lindhe/Wiley-Blackwell</li> <li>•Dental Implant Prosthetics.Carl E.misch/Publisher:Elsevier MOSBY</li> </ul>					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.					

<b>Lecture No</b>	041088				
<b>Subject title</b>	Practice of Oral Implantology and Regenerative Dental Medicine	<b>Subject ID</b>			
<b>Instructors</b>	SHIOTA MAKOTO, TACHIKAWA NORIKO, KURODA SHINJI, NAKATA HIDEMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Dental Hospital, 7th floor), Center for Experimental Animals					
<b>Course Purpose and Outline</b>					
Goals/outline: Oral rehabilitation with dental implants (dental implant treatment) for partially or fully edentulous patients has been effective and predictable. The students will be able to learn the characteristics of dental implant treatment and dental implant materials and to renew knowledge concerning all steps in dental implant treatment including clinical examinations, treatment planning, implant surgery, prosthodontics procedures and maintenance. In dental implant treatment bone augmentation and soft tissue management are frequently required. In this course, regenerative treatments, which relate to dental implant treatment, will be presented and discussed. Especially, future possibility of regenerative medicine in dental field will be discussed. The purposes of this course are to understand current dental implant treatment and the related regenerative dental medicine and to predict the future directions of researches in this field.					
<b>Course Objective(s)</b>					
The objectives of this program is to be possible to explain the scientific background the merits and the demerits of modern dental implant treatment and the detail of the related augmentation techniques of soft and hard tissues.					
<b>Lecture Style</b>					
Lectures by the instructors and presentations by the participants regarding the given subjects					
<b>Course Outline</b>					
Goals/Outline: The purpose of this program is to understand the points in all steps of dental implant treatment: Clinical examinations, treatment planning, surgery, prosthetic procedures and maintenance. Several clinical cases will presented and treatment planning of these cases will be discussed.					
<b>Grading System</b>					
based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.					
<b>Prerequisite Reading</b>					
Knowledges in cell biology, biological material science, oral anatomy, physiology, pharmacology, radiology, internal medicine, oral surgery, periodontology, prosthodontics are required for this program. Read the textbooks of these subjects. Please be able to make a presentation of your related or intersted studies published in international journals briefly (1~2min).					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>• Clinical periodontology and implant dentistry. Jan Lindhe/Wiley-Blackwell</li> <li>• Dental Implant Prosthetics. Carl E. Misch/Publisher: Elsevier MOSBY</li> </ul>					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.					

<b>Lecture No</b>	041089				
<b>Subject title</b>	Laboratory practice of Oral Implantology and Regenerative Dental Medicine	<b>Subject ID</b>			
<b>Instructors</b>	SHIOTA MAKOTO, TACHIKAWA NORIKO, KURODA SHINJI, NAKATA HIDEMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Dental Hospital, 7th floor), Center for Experimental Animals					
<b>Course Purpose and Outline</b>					
Goals/outline: Oral rehabilitation with dental implants (dental implant treatment) for partially or fully edentulous patients has been effective and predictable. The students will be able to learn the characteristics of dental implant treatment and dental implant materials and to renew knowledge concerning all steps in dental implant treatment including clinical examinations, treatment planning, implant surgery, prosthodontics procedures and maintenance. In dental implant treatment bone augmentation and soft tissue management are frequently required. In this course, regenerative treatments, which relate to dental implant treatment, will be presented and discussed. Especially, future possibility of regenerative medicine in dental field will be discussed. The purposes of this course are to understand current dental implant treatment and the related regenerative dental medicine and to predict the future directions of researches in this field.					
<b>Course Objective(s)</b>					
The objectives of this program is to be possible to explain the scientific background the merits and the demerits of modern dental implant treatment and the detail of the related augmentation techniques of soft and hard tissues.					
<b>Lecture Style</b>					
Lectures by the instructors and presentations by the participants regarding the given subjects					
<b>Course Outline</b>					
Goals/Outline: The purposes of this course are to clarify current clinical problems in dental implant treatment and to learn basic concept of planning researches to solve these problems. The researches, which are currently conducted by students in Department of Oral Implantology and Regenerative Dental Medicine, will be presented. The participants of this course will have chances to see animal experiments concerning dental implants and the related regenerative medicine.					
<b>Grading System</b>					
based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.					
<b>Prerequisite Reading</b>					
Knowledges in cell biology, biological material science, oral anatomy, physiology, pharmacology, radiology, internal medicine, oral surgery, periodontology, prosthodontics are required for this program. Read the textbooks of these subjects. Please be able to make a presentation of your related or intersted studies published in international journals briefly (1~2min).					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>• Clinical periodontology and implant dentistry. Jan Lindhe/Wiley-Blackwell</li> <li>• Dental Implant Prosthetics. Carl E. Misch/Publisher: Elsevier MOSBY</li> </ul>					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.					

<b>Lecture No</b>	041090				
<b>Subject title</b>	Lecture of Plastic and Reconstructive Surgery I	<b>Subject ID</b>			
<b>Instructors</b>	MORI HIROKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
Grabb and Smith's plastic surgery / Thome, Charles, Chung, Kevin C., Grabb, William C., Smith, James Walter, : Wolters Kluwer / Lippincott Williams & Wilkins Health, 2014					
Essentials of Plastic Surgery, Second Edition / Jeffrey E. Janis ed. : Thieme Medical Pub, 2014					
<b>Reference Materials</b>					
Plastic Surgery: 6-Volume Set, 4e / Peter C. Neligan : Elsevier, 2017					
<b>Reference URL</b>					
<a href="http://www.tmd.ac.jp/med/plas/">http://www.tmd.ac.jp/med/plas/</a>					
<b>Email</b>					
moriplas@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon-Fri 8:00-20:00					

<b>Lecture No</b>	041091				
<b>Subject title</b>	Practice of Plastic and Reconstructive Surgery I	<b>Subject ID</b>			
<b>Instructors</b>	MORI HIROKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
Grabb and Smith's plastic surgery / Thome, Charles, Chung, Kevin C., Grabb, William C., Smith, James Walter, : Wolters Kluwer / Lippincott Williams & Wilkins Health, 2014					
Essentials of Plastic Surgery 2nd ed / Essentials of Plastic Surgery : Thieme Medical Pub, 2014					
<b>Reference Materials</b>					
Plastic Surgery: 6–Volume Set, 4e / Peter C. Neligan : Elsevier					
<b>Reference URL</b>					
<a href="http://www.tmd.ac.jp/med/plas/">http://www.tmd.ac.jp/med/plas/</a>					
<b>Email</b>					
moriplas@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon–Fri 8:00–20:00					

<b>Lecture No</b>	041092				
<b>Subject title</b>	Laboratory practice of Plastic and Reconstructive Surgery I	<b>Subject ID</b>			
<b>Instructors</b>	MORI HIROKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
Grabb and Smith's plastic surgery / Thome, Charles, Chung, Kevin C., Grabb, William C., Smith, James Walter, : Wolters Kluwer / Lippincott Williams & Wilkins Health, 2014					
Essentials of Plastic Surgery / Janis, Jeffrey E. : Thieme Medical Pub, 2014					
<b>Reference Materials</b>					
Plastic Surgery: 6-Volume Set, 4e / Peter C. Neligan : Elsevier					
<b>Reference URL</b>					
<a href="http://www.tmd.ac.jp/med/plas/">http://www.tmd.ac.jp/med/plas/</a>					
<b>Email</b>					
moriplas@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon-Fri 8:00-20:00					



<b>Lecture No</b>	041093				
<b>Subject title</b>	Lecture of Plastic and Reconstructive Surgery II	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA KENTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Confirm to the instructor in charge before lecture.					
<b>Course Purpose and Outline</b> In plastic surgery, a thinking process to choose surgical procedure is as important as surgery itself. In this course, we lecture on the preoperative treatment, process to choose operative procedures, and postoperative treatment.					
<b>Course Objective(s)</b> Understanding process to choose surgical procedures and practicing them					
<b>Lecture Style</b> Small-group session is adopted in order for intense discussion.					
<b>Course Outline</b> Goals: To recognize meaning and necessity of plastic and reconstructive surgery, and to understand objective disorders and treatments for them. Outline: Explaining the methods of free tissue transfer by using microsurgery. Furthermore, explaining a large variety of reconstructive surgery with the use of free tissue transfer, mainly about head and neck reconstruction and skull base reconstruction. Researching the improvement of reconstructive surgical procedures especially from a perspective of postoperative function.					
<b>Grading System</b> Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.					
<b>Prerequisite Reading</b> Lecture : Participating after reading relevant part of the reference books. Practice: Before practice, think about optimal operative procedures by yourself.					
<b>Reference Materials</b> 1) Grabb & Smith Grabb and Smith's Plastic Surgery (7 HAR/PSC) Thorne, Charles H., M.D. (EDT)/ Chung, Kevin C., M.D. (EDT)/ Gosain, A 2) Plastic Surgery, 3rd ed., in 6 vols. With Expert Consult Premium Edition P.C.Neligan(ed.) 3) Essentials of Plastic Surgery, Second Edition Jeffrey E. Janis ed.					
<b>Important Course Requirements</b> Lecture and practice can become meaningful by prior and post self-learning. Japanese medical license is necessary to participate in an operation or clinical study.					
<b>Note(s) to Students</b> It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.					
<b>Email</b> Kentaro Tanaka, professor E-mail kenta,plas@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday to Friday 9:00-17:00 M&Dtower 9F plastic and reconstructive surgery					

<b>Lecture No</b>	041094				
<b>Subject title</b>	Practice of Plastic and Reconstructive Surgery II	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA KENTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Confirm to the instructor in charge before lecture.					
<b>Course Purpose and Outline</b> In plastic surgery, a thinking process to choose surgical procedure is as important as surgery itself. In this course, we lecture on the preoperative treatment, process to choose operative procedures, and postoperative treatment.					
<b>Course Objective(s)</b> Understanding process to choose surgical procedures and practicing them					
<b>Lecture Style</b> Small-group session is adopted in order for intense discussion.					
<b>Course Outline</b> Goals: To decide a suitable treatment for each disorder, to handle surgical instruments and sutures correctly and to explain selected therapeutic procedures logically and perform them. Outline: Deciding a therapeutic strategy for each case in preoperative conference, and participating in operations.					
<b>Grading System</b> Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.					
<b>Prerequisite Reading</b> Lecture: Participating after reading relevant part of the reference books. Practice: Before practice, think about optimal operative procedures by yourself.					
<b>Reference Materials</b> 1) Grabb & Smith Grabb and Smith's Plastic Surgery (7 HAR/PSC) Thorne, Charles H., M.D. (EDT)/ Chung, Kevin C., M.D. (EDT)/ Gosain, A 2) Plastic Surgery, 3rd ed., in 6 vols. With Expert Consult Premium Edition P.C.Neligan(ed.) 3) Essentials of Plastic Surgery, Second Edition Jeffrey E. Janis ed.					
<b>Important Course Requirements</b> Lecture and practice can become meaningful by prior and post self-learning. Japanese medical license is necessary to participate in an operation or clinical study.					
<b>Note(s) to Students</b> It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.					
<b>Email</b> Kentaro Tanaka, professor E-mail kenta.plas@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday to Friday 9:00–17:00 M&Dtower 9F plastic and reconstructive surgery					

<b>Lecture No</b>	041095				
<b>Subject title</b>	Laboratory practice of Plastic and Reconstructive Surgery II	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA KENTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Confirm to the instructor in charge before lecture.					
<b>Course Purpose and Outline</b>					
In plastic surgery, a thinking process to choose surgical procedure is as important as surgery itself. In this course, we lecture on the preoperative treatment, process to choose operative procedures, and postoperative treatment.					
<b>Course Objective(s)</b> Understanding process to choose surgical procedures and practicing them					
<b>Lecture Style</b> Small-group session is adopted in order for intense discussion.					
<b>Course Outline</b>					
Goals:					
Revealing disease mechanism of objective disorders of plastic and reconstructive surgery, and developing new therapeutic approaches based on experimental results.					
Outline:					
Acquiring techniques for experimentation and analyzing obtained experimental data.					
Participation in a research group: As needed					
Experimentation of plastic and reconstructive surgery					
Contents					
1) Microsurgery, vascularized free tissue transfer, neurotaphy					
2) Development of functional and aesthetic reconstruction following cancer ablation in head and neck					
3) Evaluation of blood supply to various flaps using ICG fluorescence angiography					
4) Does the improvement of capillary patency rate contribute to the preservation of transferred fatty tissue volume ?					
5) Development of ambulatory functional reconstruction for refractory ulcer especially in CLI patients					
6) Objective assessment of facial paralysis, and selection of optimal reconstructive procedure					
<b>Grading System</b> Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.					
<b>Prerequisite Reading</b>					
Lecture : Participating after reading relevant part of the reference books.					
Practice: Before practice, think about optimal operative procedures by yourself.					
<b>Reference Materials</b>					
1) Grabb & Smith Grabb and Smith's Plastic Surgery (7 HAR/PSC)					
Thorne, Charles H., M.D. (EDT)/ Chung, Kevin C., M.D. (EDT)/ Gosain, A					
2) Plastic Surgery, 3rd ed., in 6 vols. With Expert Consult Premium Edition P.C.Neligan(ed.)					
3) Essentials of Plastic Surgery, Second Edition Jeffrey E. Janis ed.					
<b>Important Course Requirements</b>					
Lecture and practice can become meaningful by prior and post self-learning. Japanese medical license is necessary to participate in an operation or clinical study.					
<b>Note(s) to Students</b>					
It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.					
<b>Email</b> Kentaro Tanaka, professor E-mail kenta.plas@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Monday to Friday 9:00–17:00					
M&D tower 9F plastic and reconstructive surgery					

<b>Lecture No</b>	041096				
<b>Subject title</b>	Lecture of Head and Neck Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ASAKAGE TAKAHIRO, ARIIZUMI Yousuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Depend on the programme.					
<b>Course Purpose and Outline</b> Develop excellent human resources of head and neck surgeon. For the purpose, it is needed to understand anatomy, pathology, the way of diagnosis, and treatment strategy. In addition, research about new clinical technique or clinical anatomy.					
<b>Course Objective(s)</b> ① Understand clinical feature of head and neck tumor. ② Acquire diagnosis skills of head and neck tumor. ③ Be able to select the suitable treatment method. ④ Research and development for new knowledge about head and neck anatomy or treatment					
<b>Lecture Style</b> The format comprises a small number of students.					
<b>Course Outline</b> Goals/outline: We mainly deal with head and neck tumours. Lectures are focused on the clinical characteristics and pathogenesis of these head and neck tumours. Furthermore, various treatment strategies for these tumours are shown.					
<b>Grading System</b> The evaluation of results is based on contents of reports, presentations at conference and original articles.					
<b>Prerequisite Reading</b> The knowledge about general otorhinolaryngology and surgical oncology are required.					
<b>Reference Materials</b> not available.					
<b>Important Course Requirements</b> nothing in particular					

<b>Lecture No</b>	041097				
<b>Subject title</b>	Practice of Head and Neck Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ASAKAGE TAKAHIRO, ARIIZUMI Yousuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Depend on the programme.					
<b>Course Purpose and Outline</b> Develop excellent human resources of head and neck surgeon. For the purpose, it is needed to understand anatomy, pathology, the way of diagnosis, and treatment strategy. In addition, research about new clinical technique or clinical anatomy.					
<b>Course Objective(s)</b> ① Understand clinical feature of head and neck tumor. ② Acquire diagnosis skills of head and neck tumor. ③ Be able to select the suitable treatment method. ④ Research and development for new knowledge about head and neck anatomy or treatment					
<b>Lecture Style</b> The format comprises a small number of students.					
<b>Course Outline</b> Goals/Outline: There are three goals: · First, to master the diagnostic techniques for head and neck tumours, by means of physical and endoscopic examinations. · Second, to understand the findings of imaging utilities, such as X-ray, CT, MRI and US. · Third, to properly select the appropriate treatments for head and neck tumours in consideration of function and appearance.					
<b>Grading System</b> The evaluation of results is based on contents of reports, presentations at conference and original articles.					
<b>Prerequisite Reading</b> The knowledge about general otorhinolaryngology and surgical oncology are required.					
<b>Reference Materials</b> not available.					
<b>Important Course Requirements</b> nothing in particular					

<b>Lecture No</b>	041098				
<b>Subject title</b>	Laboratory practice of Head and Neck Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ASAKAGE TAKAHIRO, ARIIZUMI Yousuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Depend on the programme.					
<b>Course Purpose and Outline</b> Develop excellent human resources of head and neck surgeon. For the purpose, it is needed to understand anatomy, pathology, the way of diagnosis, and treatment strategy. In addition, research about new clinical technique or clinical anatomy.					
<b>Course Objective(s)</b> ① Understand clinical feature of head and neck tumor. ② Acquire diagnosis skills of head and neck tumor. ③ Be able to select the suitable treatment method. ④ Research and development for new knowledge about head and neck anatomy or treatment					
<b>Lecture Style</b> The format comprises a small number of students.					
<b>Course Outline</b> Goals/Outline: (1) Anatomy of the skull base. (2) Development of new surgical techniques in cancer treatment. (3) Clinical application of new devices in endoscopic examination. (4) Surgical treatment of paediatric head and neck tumours.					
<b>Grading System</b> The evaluation of results is based on contents of reports, presentations at conference and original articles.					
<b>Prerequisite Reading</b> The knowledge about general otorhinolaryngology and surgical oncology are required.					
<b>Reference Materials</b> not available.					
<b>Important Course Requirements</b> nothing in particular					

<b>Lecture No</b>	041099				
<b>Subject title</b>	Lecture of Radiation Therapeutics and Oncology	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIMURA RYOICHI, TODA KAZUMA, NAKAGAWA KEIKO, KOJIMA MIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Check for charge instructors beforehand, because it's different depending on programs.					
<b>Course Purpose and Outline</b>					
To understand the influence of radiation on the body or tumor and the optimal radiation therapy.					
<b>Course Objective(s)</b>					
① Explain about external beam radiatiotherapy, brachytherapy, and radiopharmaceutical therapy					
② Explain about the multimodal therapy including raditation therapy.					
③ Propose the optimal raditation therapy plan according to each malignant tumor.					
<b>Lecture Style</b>					
Small number system is employed.					
A chance of discussion is held aggressively.					
<b>Course Outline</b>					
Goals/Outline					
Postgraduate courses are made to study clinical radiation medicine to become specialist in oncology					
<b>Grading System</b>					
Estimated overall based on the participation situation to the lectures and the practices and the study contents.					
<b>Prerequisite Reading</b>					
Understand the base of radiation biology and physics.					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
YOSHIMURA RYOICHI:ysmmrad@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
YOSHIMURA RYOICHI:No office hour.					
Please contact by e-mail.					

<b>Lecture No</b>	041100				
<b>Subject title</b>	Practice of Radiation Therapeutics and Oncology	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIMURA RYOICHI, TODA KAZUMA, NAKAGAWA KEIKO, KOJIMA MIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Check for charge instructors beforehand, because it's different depending on programs.					
<b>Course Purpose and Outline</b>					
To understand the influence of radiation on the body or tumor and the optimal radiation therapy.					
<b>Course Objective(s)</b>					
① Explain about external beam radiatiotherapy, brachytherapy, and radiopharmaceutical therapy					
② Explain about the multimodal therapy including raditation therapy.					
③ Propose the optimal raditation therapy plan according to each malignant tumor.					
<b>Lecture Style</b>					
Small number system is employed.					
A chance of discussion is held aggressively.					
<b>Course Outline</b>					
Goals/Outline:					
Students of our section are expected to obtain a doctorate degree by presenting thesis					
<b>Grading System</b>					
Estimated overall based on the participation situation to the lectures and the practices and the study contents.					
<b>Prerequisite Reading</b>					
Understand the base of radiation biology and physics.					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
YOSHIMURA RYOICHI:ysmmrad@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
YOSHIMURA RYOICHI:No office hour.					
Please contact by e-mail.					



<b>Lecture No</b>	041101				
<b>Subject title</b>	Laboratory practice of Radiation Therapeutics and Oncology	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIMURA RYOICHI, TODA KAZUMA, NAKAGAWA KEIKO, KOJIMA MIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Check for charge instructors beforehand, because it's different depending on programs.					
<b>Course Purpose and Outline</b>					
To understand the influence of radiation on the body or tumor and the optimal radiation therapy.					
<b>Course Objective(s)</b>					
① Explain about external beam radiatiotherapy, brachytherapy, and radiopharmaceutical therapy					
② Explain about the multimodal therapy including raditation therapy.					
③ Propose the optimal raditation therapy plan according to each malignant tumor.					
<b>Lecture Style</b>					
Small number system is employed.					
A chance of discussion is held aggressively.					
<b>Course Outline</b>					
Goals/Outline:					
Postgraduate courses are made to do retrospective study analyzing the effect of radiation therapy and prognostic factors, and to do planning of the prospective study based on the result of the retrospective study.					
<b>Grading System</b>					
Estimated overall based on the participation situation to the lectures and the practices and the study contents.					
<b>Prerequisite Reading</b>					
Understand the base of radiation biology and physics.					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
YOSHIMURA RYOICHI:ysmmrad@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
YOSHIMURA RYOICHI:No office hour.					
Please contact by e-mail.					

<b>Lecture No</b>	041102				
<b>Subject title</b>	Lecture of Maxillofacial Anatomy	<b>Subject ID</b>			
<b>Instructors</b>	SHIBATA SHIYUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Maxillofacial Anatomy (6th floor, in MD tower)					
<b>Course Purpose and Outline</b> In order to take ability of assess biological phenomena from the viewpoints of morphology, we teach various structures in maxillofacial regions from the standpoints of gross anatomy, histology, and molecular biology. In addition, we teach methodology of organ/tissue culture, light and electron microscopy, and molecular biology.					
<b>Course Objective(s)</b> 1) To explain the structural features and developmental process of maxilla and mandible. 2) To explain structural features and developmental process of teeth. 3) To explain the structure and developmental process of temporomandibular joints including articular disc and condylar cartilage. 4) To understand the process of making samples of light and electron microscopy. 5) To understand the methods of organ culture of tooth germ, bone and cartilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.					
<b>Lecture Style</b> Teachers present their own experimental data, and discuss topics presented.					
<b>Course Outline</b> Goals/outline: To obtain the ability of appreciating various biological reactions morphologically, lecturers explain the function of various oral organs from the viewpoints of morphology. Further, lecturers explain their structural features using light and electron microscopy.  Available programs: Lecture Oct. 10– Dec. 19 Thursday 13:00–15:00 Seminar (1) Wednesday 9:30–11:00 or 10:30–12:00					
<b>Grading System</b> Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.					
<b>Prerequisite Reading</b> Confirm contents of schedule which is distributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.					
<b>Reference Materials</b> 1) Wakita M et al. ed "Oral Histology and Embryology" (ISHIYAKU PUBLISHERS, inc) 2) Wakita M et al. ed "Oral Anatomy" (ISHIYAKU PUBLISHERS, inc) 3) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house – USA					
<b>Important Course Requirements</b> none					
<b>Note(s) to Students</b> Correspond to contact person before you take a course.					
<b>Email</b> SHIBATA SHIYUNICHI: sshibata.mfa@tmd.ac.jp					
<b>Instructor's Contact Information</b> SHIBATA SHIYUNICHI: Any time ( Need pre-correspondence). M&D tower 6F					

<b>Lecture No</b>	041103				
<b>Subject title</b>	Practice of Maxillofacial Anatomy	<b>Subject ID</b>			
<b>Instructors</b>	SHIBATA SHIYUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Maxillofacial Anatomy (6th floor, in MD tower)					
<b>Course Purpose and Outline</b> In order to take ability of assess biological phenomena from the viewpoints of morphology, we teach various structures in maxillofacial regions from the standpoints of gross anatomy, histology, and molecular biology. In addition, we teach methodology of organ/tissue culture, light and electron microscopy, and molecular biology.					
<b>Course Objective(s)</b> 1) To explain the structural features and developmental process of maxilla and mandible. 2) To explain structural features and developmental process of teeth. 3) To explain the structure and developmental process of temporomandibular joints including articular disc and condylar cartilage. 4) To understand the process of making samples of light and electron microscopy. 5) To understand the methods of organ culture of tooth germ, bone and cartilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.					
<b>Lecture Style</b> Teachers present their own experimental data, and discuss topics presented.					
<b>Course Outline</b> Goals/Outline: Learn how to make samples for histological observations, execute practical procedures, and observe samples practically. Next, investigate references related to findings obtained and make a discussion, then present their data.  Available programs: Seminar (2) Wednesday 13:00–14:30					
<b>Grading System</b> Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.					
<b>Prerequisite Reading</b> Confirm contents of schedule which is distributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.					
<b>Reference Materials</b> 1) Wakita M et al. ed "Oral Histology and Embryology" (ISHIYAKU PUBLISHERS, inc) 2) Wakita M et al. ed "Oral Anatomy" (ISHIYAKU PUBLISHERS, inc) 3) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house – USA					
<b>Important Course Requirements</b> none					
<b>Note(s) to Students</b> Correspond to contact person before you take a course.					
<b>Email</b> SHIBATA SHIYUNICHI:sshibata.mfa@tmd.ac.jp					
<b>Instructor's Contact Information</b> SHIBATA SHIYUNICHI:Any time ( Need pre-correspondence). M&D tower 6F					

<b>Lecture No</b>	041104				
<b>Subject title</b>	Laboratory practice of Maxillofacial Anatomy	<b>Subject ID</b>			
<b>Instructors</b>	SHIBATA SHIYUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Maxillofacial Anatomy (6th floor, in MD tower)					
<b>Course Purpose and Outline</b> In order to take ability of assess biological phenomena from the viewpoints of morphology, we teach various structures in maxillofacial regions from the standpoints of gross anatomy, histology, and molecular biology. In addition, we teach methodology of organ/tissue culture, light and electron microscopy, and molecular biology.					
<b>Course Objective(s)</b> 1) To explain the structural features and developmental process of maxilla and mandible. 2) To explain structural features and developmental process of teeth. 3) To explain the structure and developmental process of temporomandibular joints including articular disc and condylar cartilage. 4) To understand the process of making samples of light and electron microscopy. 5) To understand the methods of organ culture of tooth germ, bone and cartilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.					
<b>Lecture Style</b> Teachers present their own experimental data, and discuss topics presented.					
<b>Course Outline</b> Goals/Outline: Plan experimental system to investigate development, growth, and regeneration of oral tissues (tooth germ, periodontal tissues, jaw bone etc.), the execute it. To evaluate results, various techniques including making histological sections, staining, and taking pictures should be mastered.  Available programs: Seminar (3) First Tuesday 9:00–10:30					
<b>Grading System</b> Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.					
<b>Prerequisite Reading</b> Confirm contents of schedule which is distributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.					
<b>Reference Materials</b> 1) Wakita M et al. ed "Oral Histology and Embryology" (ISHIYAKU PUBLISHERS, inc) 2) Wakita M et al. ed "Oral Anatomy" (ISHIYAKU PUBLISHERS, inc) 3) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house – USA					
<b>Important Course Requirements</b> none					
<b>Note(s) to Students</b> Correspond to contact person before you take a course.					
<b>Email</b> SHIBATA SHIYUNICHI:sshibata.mfa@tmd.ac.jp					
<b>Instructor's Contact Information</b> SHIBATA SHIYUNICHI:Any time ( Need pre-correspondence). M&D tower 6F					

<b>Lecture No</b>	041105				
<b>Subject title</b>	Lecture of Cognitive Neurobiology	<b>Subject ID</b>			
<b>Instructors</b>	USUI Nobuo				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Please contact the instructor in advance.					
<b>Course Purpose and Outline</b> To understand complex brain functions, both basic knowledge in the textbooks and advanced knowledge associated with specific research topics are important. Lectures and practice are designed to help students understand how higher brain functions, such as motor, visual, and sensory functions, are represented in the cerebral cortex.					
<b>Course Objective(s)</b> The aim of this course is to understand the basic knowledge and concepts for cortical mechanisms underlying higher brain functions through the lectures and practice.					
<b>Lecture Style</b> In a small group (up to 4) for technical reasons.					
<b>Course Outline</b> Basic training of the data collection and analysis for functional magnetic resonance imaging (fMRI) technique.					
<b>Grading System</b> Evaluation is to be made based on the attendance rate, the contents of discussion, and reports submitted. When students are involved in research practice, presentation in meetings and symposia is also be evaluated.					
<b>Prerequisite Reading</b> Reading textbooks for neuroscience in advance is desirable (ex. Physiology of Behavior, 11 th Ed. by N. R. Carlson, Pearson Education, Inc, 2013).					
<b>Reference Materials</b> 神経科学テキスト：脳と行動／カールソン [著], 泰羅雅登 監訳, 中村克樹 監訳, カールソン, ニール・R, 泰羅 雅登, 中村 克樹.: 丸善出版, 2013 Related handouts and monographs will be given in the lectures.					
<b>Important Course Requirements</b> none					
<b>Email</b> usui.cnb@tmd.ac.jp					
<b>Instructor's Contact Information</b> Send an email to Nobuo Usui to make an appointment.					

<b>Lecture No</b>	041106				
<b>Subject title</b>	Practice of Cognitive Neurobiology	<b>Subject ID</b>			
<b>Instructors</b>	USUI Nobuo				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Please contact the instructor in advance.					
<b>Course Purpose and Outline</b> To understand complex brain functions, both basic knowledge in the textbooks and advanced knowledge associated with specific research topics are important. Lectures and practice are designed to help students understand how higher brain functions, such as motor, visual, and sensory functions, are represented in the cerebral cortex.					
<b>Course Objective(s)</b> The aim of this course is to understand the basic knowledge and concepts for cortical mechanisms underlying higher brain functions through the lectures and practice.					
<b>Lecture Style</b> In a small group (up to 4) for technical reasons.					
<b>Course Outline</b> Practice covers fMRI, psychophysical experiments and others.					
<b>Grading System</b> Evaluation is to be made based on the attendance rate, the contents of discussion, and reports submitted. When students are involved in research practice, presentation in meetings and symposia is also be evaluated.					
<b>Prerequisite Reading</b> Reading textbooks for neuroscience in advance is desirable (ex. Physiology of Behavior, 11 th Ed. by N. R. Carlson, Pearson Education, Inc, 2013).					
<b>Reference Materials</b> 神経科学テキスト：脳と行動／カールソン [著]、泰羅雅登 監訳、中村克樹 監訳、カールソン、ニール・R、泰羅 雅登、中村 克樹、丸善出版、2013 Related handouts and monographs will be given in the lectures.					
<b>Important Course Requirements</b> none					
<b>Email</b> usui.cnb@tmd.ac.jp					
<b>Instructor's Contact Information</b> Send an email to Nobuo Usui to make an appointment.					

<b>Lecture No</b>	041107				
<b>Subject title</b>	Laboratory practice of Cognitive Neurobiology			<b>Subject ID</b>	
<b>Instructors</b>	USUI Nobuo				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Please contact the instructor in advance.					
<b>Course Purpose and Outline</b> To understand complex brain functions, both basic knowledge in the textbooks and advanced knowledge associated with specific research topics are important. Lectures and practice are designed to help students understand how higher brain functions, such as motor, visual, and sensory functions, are represented in the cerebral cortex.					
<b>Course Objective(s)</b> The aim of this course is to understand the basic knowledge and concepts for cortical mechanisms underlying higher brain functions through the lectures and practice.					
<b>Lecture Style</b> In a small group (up to 4) for technical reasons.					
<b>Course Outline</b> Students can attend to one of the following research projects. On-going research themes include (1) motor control by cerebral cortex, (2) visual depth perception, (3) cortical representation of body images.					
<b>Grading System</b> Evaluation is to be made based on the attendance rate, the contents of discussion, and reports submitted. When students are involved in research practice, presentation in meetings and symposia is also be evaluated.					
<b>Prerequisite Reading</b> Reading textbooks for neuroscience in advance is desirable (ex. Physiology of Behavior, 11 th Ed. by N. R. Carlson, Pearson Education, Inc, 2013).					
<b>Reference Materials</b> 神経科学テキスト：脳と行動／カールソン [著], 泰羅雅登 監訳, 中村克樹 監訳, カールソン, ニール・R. 泰羅 雅登, 中村 克樹.: 丸善出版, 2013 Related handouts and monographs will be given in the lectures.					
<b>Important Course Requirements</b> none					
<b>Email</b> usui.cnb@tmd.ac.jp					
<b>Instructor's Contact Information</b> Send an email to Nobuo Usui to make an appointment.					

<b>Lecture No</b>	041108				
<b>Subject title</b>	Lecture of Molecular Craniofacial Embryology	<b>Subject ID</b>			
<b>Instructors</b>	ISEKI SACHIKO, IKEDA MASAOKI, TAKECHI MASAKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
留学生在が履修登録した場合は英語で行う /When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
The office of Molecular Craniofacial Embryology laboratory Please contact the instructor					
<b>Course Purpose and Outline</b>					
Understanding of basic molecular mechanisms of craniofacial development and tissue regeneration					
<b>Course Objective(s)</b>					
Achievement of understanding in methods and strategy to study molecular craniofacial embryology and tissue regeneration					
<b>Lecture Style</b>					
Lectures and practices are held to a group of small number of students. Since laboratory works are carried out individually, it is advised to contact each instructor about the detail.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
<b>Grading System</b>					
Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course.					
<b>Prerequisite Reading</b>					
<b>Email</b>					
ISEKI SACHIKO:s.iseki.emb@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
ISEKI SACHIKO:On demand (appointment required)					



<b>Lecture No</b>	041109				
<b>Subject title</b>	Practice of Molecular Craniofacial Embryology	<b>Subject ID</b>			
<b>Instructors</b>	ISEKI SACHIKO, IKEDA MASAOKI, TAKECHI MASAKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Lecture place</b>					
The office of Molecular Craniofacial Embryology Contact the course organizer					
<b>Course Purpose and Outline</b>					
Understanding of basic molecular mechanisms of craniofacial development and tissue regeneration					
<b>Course Objective(s)</b>					
Instructors and lab members present “Research Progress” including basic methods of experimental developmental biology and recent genetic engineering techniques to study molecular mechanisms of craniofacial morphogenesis and the regeneration as well as craniofacial malformations associated with gene mutations.					
<b>Lecture Style</b>					
Lectures and practices are held to a group of small number of students.					
<b>Course Outline</b>					
Please contact the instructor					
<b>Grading System</b>					
Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course.					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
1. Cranofacial Embryogenetics and Development by Geoffrey H. Sperber People's Medical Publishing House USA, Ltd. 2. Developmental Biology Scott F. Gilbert Sinauer					
<b>Email</b>					
ISEKI SACHIKO:s.iseki.emb@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
ISEKI SACHIKO:On demand (appointment required)					

<b>Lecture No</b>	041110				
<b>Subject title</b>	Laboratory practice of Molecular Craniofacial Embryology	<b>Subject ID</b>			
<b>Instructors</b>	ISEKI SACHIKO, IKEDA MASAAKI, TAKECHI MASAKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
同じ内容の英語授業を別日程で開講している / Same classes are offered in English on different schedules.					
<b>Prerequisite Reading</b>					
<b>Email</b>					
ISEKI SACHIKO:s.iseki.emb@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
ISEKI SACHIKO:On demand (appointment required)					

<b>Lecture No</b>	041111				
<b>Subject title</b>	Lecture of Cellular Physiological Chemistry	<b>Subject ID</b>			
<b>Instructors</b>	NAKAHAMA KENICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Venue depends on each program, students are requested to contact the instructors for each program.					
<b>Course Purpose and Outline</b>					
Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Course Objective(s)</b>					
Understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Lecture Style</b>					
Lectures and practices are held to a group of small number of students. Since laboratory works are carried out individually, it is advised to contact each instructor about the detail.					
<b>Grading System</b>					
Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course. Furthermore, experimental problem-solving skills are evaluated in Lab meeting or the presentation in scientific society					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041112				
<b>Subject title</b>	Practice of Cellular Physiological Chemistry	<b>Subject ID</b>			
<b>Instructors</b>	NAKAHAMA KENICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Venue depends on each program, students are requested to contact the instructors for each program.					
<b>Course Purpose and Outline</b> Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Course Objective(s)</b> Understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Lecture Style</b> Lectures and practices are held to a group of small number of students. Since laboratory works are carried out individually, it is advised to contact each instructor about the detail.					
<b>Course Outline</b> Goals: To understand how to investigate the mechanism of various diseases onset and development. Outlines: The experimental techniques will be retrieve the goal mentioned above.					
<b>Grading System</b> Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course. Furthermore, experimental problem-solving skills are evaluated in Lab meeting or the presentation in scientific society					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> None					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041113				
<b>Subject title</b>	Laboratory practice of Cellular Physiological Chemistry	<b>Subject ID</b>			
<b>Instructors</b>	NAKAHAMA KENICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Venue depends on each program, students are requested to contact the instructors for each program.					
<b>Course Purpose and Outline</b>					
Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Course Objective(s)</b>					
Understanding of pathological and physiological conditions by cellular and molecular methods.					
<b>Lecture Style</b>					
Lectures and practices are held to a group of small number of students. Since laboratory works are carried out individually, it is advised to contact each instructor about the detail.					
<b>Course Outline</b>					
Goals: To equip the science sense Outlines: After studying isolation and culture procedure of the cell from a living body, the pathogenic mechanism of various diseases onset and the target of the drugs are analyzed using these cultured cells. Through the reading the journals, planning of an experimental design, method and carrying out research training by themselves are studied and mastering to make an experiment note and an English paper.					
<b>Grading System</b>					
Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course. Furthermore, experimental problem-solving skills are evaluated in Lab meeting or the presentation in scientific society					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041114				
<b>Subject title</b>	Lecture of Maxillofacial Surgery	<b>Subject ID</b>			
<b>Instructors</b>	YODA Tetsuya, MORITA KEIICHI, YOSHITAKE HIROYUKI, NAKAKUKI KOICHI, TAKAHARA Namiaki, TOMOMATSU Nobuyoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Each lecture is given in the different venue. Please ask the instructor and confirm the location of the venue.					
1) Ward rounds: 8F Ward in Dental Hospital					
2) Preoperative Conference: 9F Conference Room					
3) CLP Clinic: 6F					
4) FD Conference, Tumor Clinic: 6F					
5) Seminar for Graduate students, Special lecture, Journal Club: at any time.					
<b>Course Purpose and Outline</b>					
<ul style="list-style-type: none"> <li>▪ To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.</li> <li>▪ To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.</li> <li>▪ To train self-problem solving skills.</li> </ul>					
<b>Course Objective(s)</b>					
<ul style="list-style-type: none"> <li>▪ To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions</li> <li>▪ To explain the diagnosis, treatment, and prevention for these diseases</li> <li>▪ To select the most suitable treatment strategies for each cases</li> <li>▪ To establish the study plan and interpret the data appropriately.</li> <li>▪ To explain the preparation and technique of the presentation and article writing.</li> </ul>					
<b>Lecture Style</b>					
In principle, small group system is applied. And independency of the participants is respected.					
<b>Course Outline</b>					
Goals/outline:					
This lecture focused on diagnosis, treatment and prevention of congenital and acquired disease in the oral and maxillofacial region. In addition, you can study about recent diagnosis and treatment strategies of this field.					
<b>Grading System</b>					
General evaluation is based on the attendance situation for the above-mentioned lectures, practices, and labs. Study content is also a subject for the estimation.					
<b>Prerequisite Reading</b>					
Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.					
<b>Reference Materials</b>					
Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041115				
<b>Subject title</b>	Practice of Maxillofacial Surgery	<b>Subject ID</b>			
<b>Instructors</b>	YODA Tetsuya, MORITA KEIICHI, YOSHITAKE HIROYUKI, NAKAKUKI KOICHI, TAKAHARA Namiaki, TOMOMATSU Nobuyoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Each lecture is given in the different venue. Please ask the instructor and confirm the location of the venue.					
1) Ward rounds: 8F Ward in Dental Hospital					
2) Preoperative Conference: 9F Conference Room					
3) CLP Clinic: 6F					
4) FD Conference, Tumor Clinic: 6F					
5) Seminar for Graduate students, Special lecture, Journal Club: at any time.					
<b>Course Purpose and Outline</b>					
<ul style="list-style-type: none"> <li>▪ To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.</li> <li>▪ To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.</li> <li>▪ To train self-problem solving skills.</li> </ul>					
<b>Course Objective(s)</b>					
<ul style="list-style-type: none"> <li>▪ To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions</li> <li>▪ To explain the diagnosis, treatment, and prevention for these diseases</li> <li>▪ To select the most suitable treatment strategies for each cases</li> <li>▪ To establish the study plan and interpret the data appropriately.</li> <li>▪ To explain the preparation and technique of the presentation and article writing.</li> </ul>					
<b>Lecture Style</b>					
In principle, small group system is applied. And independency of the participants is respected.					
<b>Course Outline</b>					
Goals/Outline:					
Goals of this practice are to understand the etiology, diagnosis, choice of examination, laboratory data, and choice of optimum treatment for the diseases in the oral and maxillofacial region including Cleft Lip and palate, Facial Deformity and Oral and Maxillofacial tumor, and so on. Moreover, you can increase the knowledge about surgery using biomaterials and surgical reconstruction with anastomosis technique.					
<b>Grading System</b>					
General evaluation is based on the attendance situation for the above-mentioned lectures, practices, and labs. Study content is also a subject for the estimation.					
<b>Prerequisite Reading</b>					
Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.					
<b>Reference Materials</b>					
Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041116				
<b>Subject title</b>	Laboratory practice of Maxillofacial Surgery			<b>Subject ID</b>	
<b>Instructors</b>	YODA Tetsuya, MORITA KEIICHI, YOSHITAKE HIROYUKI, NAKAKUKI KOICHI, TAKAHARA Namiaki, TOMOMATSU Nobuyoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Each lecture is given in the different venue. Please ask the instructor and confirm the location of the venue.					
1) Ward rounds: 8F Ward in Dental Hospital					
2) Preoperative Conference: 9F Conference Room					
3) CLP Clinic: 6F					
4) FD Conference, Tumor Clinic: 6F					
5) Seminar for Graduate students, Special lecture, Journal Club: at any time.					
<b>Course Purpose and Outline</b>					
<ul style="list-style-type: none"> <li>▪ To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.</li> <li>▪ To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.</li> <li>▪ To train self-problem solving skills.</li> </ul>					
<b>Course Objective(s)</b>					
<ul style="list-style-type: none"> <li>▪ To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions</li> <li>▪ To explain the diagnosis, treatment, and prevention for these diseases</li> <li>▪ To select the most suitable treatment strategies for each cases</li> <li>▪ To establish the study plan and interpret the data appropriately.</li> <li>▪ To explain the preparation and technique of the presentation and article writing.</li> </ul>					
<b>Lecture Style</b>					
In principle, small group system is applied. And independency of the participants is respected.					
<b>Course Outline</b>					
Goals/Outline:					
Goals of these Labs are to learn the methods for study planning, study performing, evaluation methods, conference presentation and thesis writing.					
<b>Grading System</b>					
General evaluation is based on the attendance situation for the above-mentioned lectures, practices, and labs. Study content is also a subject for the estimation.					
<b>Prerequisite Reading</b>					
Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.					
<b>Reference Materials</b>					
Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					



<b>Lecture No</b>	041117				
<b>Subject title</b>	Lecture of Maxillofacial Orthognathics			<b>Subject ID</b>	
<b>Instructors</b>	MORIYAMA KEIJI, OGAWA TAKUYA, HIGASHIHORI NORIHISA, TSUJI MICHIKO, MIYAMOTO JUN, KOBAYASHI YUKIHO, MATSUMOTO Tsutomu, UEZONO Masayoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Information will be provided from the instructor beforehand.					
<b>Course Purpose and Outline</b>					
The purpose of this program of Maxillofacial Orthognathics is to provide information related to craniofacial growth and development, and stomatognathic function in order to develop basic knowledge and skills for the treatment of the patients with a wide variety of malocclusion. It also provides valuable information of diagnosis, and treatment planning, for orthodontic and orthognathic therapies of the patients with jaw deformities and congenital craniofacial anomalies.					
<b>Course Objective(s)</b>					
The objectives of the program are to explain not only the mechanism to cause congenital anomalies and growth abnormalities of the musculoskeletal system in craniofacial region, but also diagnosis and treatment planning.					
<b>Lecture Style</b>					
a small group					
<b>Course Outline</b>					
This course aims to provide an advanced understanding of the anomalies in craniofacial region caused by prenatal or postnatal growth abnormalities from the aspect of the clinical dentistry. In addition, it provides valuable knowledge on genetic background in various congenital diseases, and the latest information of diagnosis and treatment planning.					
Available programs:					
Course Lecture, Apr, 2020 – Mar, 2021 – Fridays 8:00~9:00					
Special Lecture, May 15, May 22, 2020 17:00~					
Seminar, Apr, 2020 – Mar, 2021 17:00~19:00 – Fridays					
<b>Grading System</b>					
Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.					
<b>Prerequisite Reading</b>					
Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b>					
Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY • Orthodontics Current Principles & Techniques 6th Ed., T.M.Grabner, ELSEVIER/MOSBY • Contemporary Treatment of Dentofacial Deformity, W.R.Proffit, MOSBY • Gorlin's Syndrome of the Head and Neck, 5th Ed., Hennekam/Krantz/Allanson, Oxford University • Atlas of Orthodontic Treatment for Patients with Birth Defects, T.Kuroda, Needham Press					
<b>Important Course Requirements</b>					
nothing in particular					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041118				
<b>Subject title</b>	Practice of Maxillofacial Orthognathics	<b>Subject ID</b>			
<b>Instructors</b>	MORIYAMA KEIJI, OGAWA TAKUYA, HIGASHIHORI NORIHISA, TSUJI MICHIKO, MIYAMOTO JUN, KOBAYASHI YUKIHO, MATSUMOTO Tsutomu, UEZONO Masayoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Information will be provided from the instructor beforehand.					
<b>Course Purpose and Outline</b>					
The purpose of this program of Maxillofacial Orthognathics is to provide information related to craniofacial growth and development, and stomatognathic function in order to develop basic knowledge and skills for the treatment of the patients with a wide variety of malocclusion. It also provides valuable information of diagnosis, and treatment planning, for orthodontic and orthognathic therapies of the patients with jaw deformities and congenital craniofacial anomalies.					
<b>Course Objective(s)</b>					
The objectives of the program are to explain not only the mechanism to cause congenital anomalies and growth abnormalities of the musculoskeletal system in craniofacial region, but also diagnosis and treatment planning.					
<b>Lecture Style</b>					
a small group					
<b>Course Outline</b>					
Comprehensive care by a team of specialists including maxillofacial surgeons, orthodontists, prosthodontists, speech therapists etc. is needed for the treatment of the patients with cleft lip and palate and other craniofacial anomalies. The Graduate Program provides the clinical education of orthodontics as a part of the multi-disciplinary approach for such patients.					
Available programs:					
Clinical meeting,            Schedule will be informed by instructors.					
Professor diagnosis,        Tuesdays and Fridays					
FD conference,              15:00~16:00 – every other Friday					
CLP conference,             15:00~16:00 – Friday					
<b>Grading System</b>					
Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.					
<b>Prerequisite Reading</b>					
Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b>					
Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY • Orthodontics Current Principles & Techniques 6th Ed., T.M.Grabner, ELSEVER/MOSBY • Contemporary Treatment of Dentofacial Deformity, W.R.Proffit, MOSBY • Gorlin's Syndrome of the Head and Neck, 5th Ed., Hennekam/Krantz/Allanson, Oxford University • Atlas of Orthodontic Treatment for Patients with Birth Defects, T.Kuroda, Needham Press					
<b>Important Course Requirements</b>					
nothing in particular					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041119				
<b>Subject title</b>	Laboratory practice of Maxillofacial Orthognathics			<b>Subject ID</b>	
<b>Instructors</b>	MORIYAMA KEIJI, OGAWA TAKUYA, HIGASHIHORI NORIHISA, TSUJI MICHIKO, MIYAMOTO JUN, KOBAYASHI YUKIHO, MATSUMOTO Tsutomu, UEZONO Masayoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Information will be provided from the instructor beforehand.					
<b>Course Purpose and Outline</b>					
The purpose of this program of Maxillofacial Orthognathics is to provide information related to craniofacial growth and development, and stomatognathic function in order to develop basic knowledge and skills for the treatment of the patients with a wide variety of malocclusion. It also provides valuable information of diagnosis, and treatment planning, for orthodontic and orthognathic therapies of the patients with jaw deformities and congenital craniofacial anomalies.					
<b>Course Objective(s)</b>					
The objectives of the program are to explain not only the mechanism to cause congenital anomalies and growth abnormalities of the musculoskeletal system in craniofacial region, but also diagnosis and treatment planning.					
<b>Lecture Style</b>					
a small group					
<b>Course Outline</b>					
The laboratory research course provides education on basic and clinical sciences of craniofacial growth and development, such as molecular biology and molecular genetics of congenital anomalies. It also includes clinical and epidemiological studies on a wide variety of malocclusion and orthodontic treatment. Available programs: Participation in research group, voluntary					
<b>Grading System</b>					
Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.					
<b>Prerequisite Reading</b>					
Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.					
<b>Reference Materials</b>					
Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY • Orthodontics Current Principles & Techniques 6th Ed., T.M.Grabner, ELSEVER/MOSBY • Contemporary Treatment of Dentofacial Deformity, W.R.Proffit, MOSBY • Gorlin's Syndrome of the Head and Neck, 5th Ed., Hennekam/Krantz/Allanson, Oxford University • Atlas of Orthodontic Treatment for Patients with Birth Defects, T.Kuroda, Needham Press					
<b>Important Course Requirements</b>					
nothing in particular					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041120				
<b>Subject title</b>	Lecture of Maxillofacial Prosthetics	<b>Subject ID</b>			
<b>Instructors</b>	SUMITA YUKA, HATSUTORI MARIKO, OTOMARU TAKAFUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Practice and Lab: Clinic for Maxillofacial Prosthetics 6F Dental Hospital Building (Please confirm by e-mail in prior)					
<b>Course Purpose and Outline</b>					
Department of Maxillofacial Prosthetic is the special unit of the prosthodontic and/or prosthetic treatment for patients with defects in oral and/or maxillofacial regions.					
<b>Course Objective(s)</b>					
The main objective of this course is to provide students with opportunity to gain sound understanding of the restoration of functional and esthetic disorders of oral and/or maxillofacial areas that are caused by congenital developmental or acquired diseases by means of the high-advanced dental and medical cares.					
<b>Lecture Style</b>					
Lecture and discussion. Every candidate has to address their own opinion freely to the others.					
<b>Course Outline</b>					
Goals/Outline: In order to master the treatment planning and the prosthetics diagnosis for the maxillofacial patients, join the clinical work at 6F clinic room of dental hospital building, Yushima Campus.					
<b>Grading System</b>					
Comprehensive assessment is done including attendance for lectures, practice and lab work. Attendance 50% , Attitude 30%, Report 20%					
<b>Prerequisite Reading</b>					
Please read textbooks in prior to attend the class.					
<b>TextBook</b>					
Maxillofacial Rehabilitation: Prosthodontic and Surgical Management of Cancer-Related, Acquired, and Congenital Defects of the Head and Neck /III Beumer, John: Quintessence Pub Co, 2011					
<b>Reference Materials</b>					
Maxillofacial Rehabilitation 3rd edition Quintessence book written by John Beumer III					
<b>Important Course Requirements</b>					
Attend the classes 2/3 over.					
<b>Note(s) to Students</b>					
If necessary, please contact us by e-mail. yuka.mfp@tmd.ac.jp					
<b>Email</b>					
SUMITA YUKA:yuka.mfp@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SUMITA YUKA:Mon-Fri 16:00-17:00 Dept. room for Maxillofacial prosthodontics, 2nd floor, 10th building.					

<b>Lecture No</b>	041121				
<b>Subject title</b>	Practice of Maxillofacial Prosthetics	<b>Subject ID</b>			
<b>Instructors</b>	SUMITA YUKA, HATSUTORI MARIKO, OTOMARU TAKAFUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Practice and Lab: Clinic for Maxillofacial Prosthetics 6F Dental Hospital Building (Please confirm by e-mail in prior)					
<b>Course Purpose and Outline</b>					
Department of Maxillofacial Prosthetic is the special unit of the prosthodontic and/or prosthetic treatment for patients with defects in oral and/or maxillofacial regions.					
<b>Course Objective(s)</b>					
The main objective of this course is to provide students with opportunity to gain sound understanding of the restoration of functional and esthetic disorders of oral and/or maxillofacial areas that are caused by congenital developmental or acquired diseases by means of the high-advanced dental and medical cares.					
<b>Lecture Style</b>					
Lecture and discussion. Every candidate has to address their own opinion freely to the others.					
<b>Course Outline</b>					
Goals/Outline: In order to master the treatment planning and the prosthetics diagnosis for the maxillofacial patients, join the clinical work at 6F clinic room of dental hospital building, Yushima Campus.					
<b>Grading System</b>					
Comprehensive assessment is done including attendance for lectures, practice and lab work. Attendance 50% , Attitude 30%, Report 20%					
<b>Prerequisite Reading</b>					
Please read textbooks in prior to attend the class.					
<b>TextBook</b>					
Maxillofacial Rehabilitation: Prosthodontic and Surgical Management of Cancer-Related, Acquired, and Congenital Defects of the Head and Neck /III Beumer, John: Quintessence Pub Co, 2011					
<b>Reference Materials</b>					
Maxillofacial Rehabilitation 3rd edition Quintessence book written by John Beumer III					
<b>Important Course Requirements</b>					
Attend the classes 2/3 over.					
<b>Note(s) to Students</b>					
If necessary, please contact us by e-mail. yuka.mfp@tmd.ac.jp					
<b>Email</b>					
SUMITA YUKA:yuka.mfp@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SUMITA YUKA:Mon-Fri 16:00-17:00 Dept. room for Maxillofacial prosthodontics, 2nd floor, 10th building.					

<b>Lecture No</b>	041122				
<b>Subject title</b>	Laboratory practice of Maxillofacial Prosthetics			<b>Subject ID</b>	
<b>Instructors</b>	SUMITA YUKA, HATSUTORI MARIKO, OTOMARU TAKAFUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Practice and Lab: Clinic for Maxillofacial Prosthetics 6F Dental Hospital Building (Please confirm by e-mail in prior)					
<b>Course Purpose and Outline</b>					
Department of Maxillofacial Prosthetic is the special unit of the prosthodontic and/or prosthetic treatment for patients with defects in oral and/or maxillofacial regions.					
<b>Course Objective(s)</b>					
To master the research planning and the methods.					
<b>Lecture Style</b>					
Lecture and discussion. Every candidate has to address their own opinion freely to the others.					
<b>Course Outline</b>					
To master the research planning and the methods.					
<b>Grading System</b>					
Comprehensive assessment is done including attendance for lectures, practice and lab work. Attendance 50% , Attitude 30%, Report 20%					
<b>Prerequisite Reading</b>					
Please read textbooks in prior to attend the class.					
<b>TextBook</b>					
Maxillofacial Rehabilitation: Prosthodontic and Surgical Management of Cancer-Related, Acquired, and Congenital Defects of the Head and Neck /III Beumer, John: Quintessence Pub Co, 2011					
<b>Reference Materials</b>					
Maxillofacial Rehabilitation 3rd edition Quintessence book written by John Beumer III					
<b>Important Course Requirements</b>					
Attend the classes 2/3 over.					
<b>Note(s) to Students</b>					
If necessary, please contact us by e-mail. yuka.mfp@tmd.ac.jp					
<b>Email</b>					
SUMITA YUKA:yuka.mfp@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SUMITA YUKA:Mon-Fri 16:00-17:00 Dept. room for Maxillofacial prosthodontics, 2nd floor, 10th building.					

<b>Lecture No</b>	041123				
<b>Subject title</b>	Lecture of Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	NAKATA TAKAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Cell biology laboratory (18F M&D tower)					
<b>Course Purpose and Outline</b> the course covers introduction to modern cell biology.					
<b>Course Objective(s)</b> Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.					
<b>Lecture Style</b> Small group (less than 5 participants)					
<b>Course Outline</b> Goals/outline: Principles and techniques of cell biology will be reviewed from historical point of view. Emphases are made on the fine structure of the cells and the power of microscopy.					
<b>Grading System</b> Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).					
<b>Prerequisite Reading</b> nothing special					
<b>Reference Materials</b> molecular biology of the cell.					
<b>Important Course Requirements</b> nothing special					
<b>Note(s) to Students</b> nothing special					
<b>Email</b> info.cbio@tmd.ac.jp					
<b>Instructor's Contact Information</b> 10:00-17:00 Cell biology laboratory (18F M&D tower)					

<b>Lecture No</b>	041124				
<b>Subject title</b>	Practice of Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	NAKATA TAKAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Cell biology laboratory (18F M&D tower)					
<b>Course Purpose and Outline</b> the course covers introduction to modern cell biology.					
<b>Course Objective(s)</b> Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.					
<b>Lecture Style</b> Small group (less than 5 participants)					
<b>Course Outline</b> Goals/Outline Participants will learn how to design experiments and evaluate the results under the supervision of our staffs, using the data of on-going projects in our lab.					
<b>Grading System</b> Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).					
<b>Prerequisite Reading</b> nothing special					
<b>Reference Materials</b> molecular biology of the cell.					
<b>Important Course Requirements</b> nothing special					
<b>Note(s) to Students</b> nothing special					
<b>Email</b> info.cbio@tmd.ac.jp					
<b>Instructor's Contact Information</b> 10:00–17:00 Cell biology laboratory (18F M&D tower)					



<b>Lecture No</b>	041125				
<b>Subject title</b>	Laboratory practice of Cell Biology			<b>Subject ID</b>	
<b>Instructors</b>	NAKATA TAKAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Cell biology laboratory (18F M&D tower)					
<b>Course Purpose and Outline</b> the course covers introduction to modern cell biology.					
<b>Course Objective(s)</b> Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.					
<b>Lecture Style</b> Small group (less than 5 participants)					
<b>Course Outline</b> Goals/Outline: Basic cell biology techniques will be presented including cell culture, transfection, and light-microscopy					
<b>Grading System</b> Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).					
<b>Prerequisite Reading</b> nothing special					
<b>Reference Materials</b> molecular biology of the cell.					
<b>Important Course Requirements</b> nothing special					
<b>Note(s) to Students</b> nothing special					
<b>Email</b> info.cbio@tmd.ac.jp					
<b>Instructor's Contact Information</b> 10:00–17:00 Cell biology laboratory (18F M&D tower)					

<b>Lecture No</b>	041126				
<b>Subject title</b>	Lecture of Medical Biochemistry	<b>Subject ID</b>			
<b>Instructors</b>	HATA YUTAKA, IWASA HIROAKI, MATSUZAKI KYOKO, MARUYAMA JUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced when scheduled.					
<b>Course Purpose and Outline</b>					
The key words of our current studies are as follows: ageing, cancer, sarcopenia, drug development, signal transduction, tumor suppressor, and <i>Caenorhabditis elegans</i> . The details are described as follows. We give lectures about our current studies to graduate students and others, and provide graduate students with the opportunity to participate in them.					
<b>Course Objective(s)</b>					
The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important issues of life science in the next decades.					
<b>Lecture Style</b>					
Please consult the contact person.					
<b>Course Outline</b>					
Goals/outline: We are studying the tumor suppressive Hippo pathway and RASSF proteins. They are instrumental in the regulation of cell proliferation, cell polarity, cell differentiation and cell death. They are implicated in various human diseases and could be new therapeutic targets. As TAZ, the co-transcriptional factor which is regulated by the Hippo pathway, plays a pivotal role in the skeletal muscle homeostasis, we are developing TAZ activators as drugs to prevent and treat sarcopenia (skeletal muscle atrophy with ageing). Furthermore, in order to facilitate the evaluation of the candidate drugs, we are aiming to generate the mouse models that mimic human progeria diseases and develop sarcopenia in a short time. We have also launched a project to study frailty (a common geriatric syndrome that causes poor health outcomes in elderly people) in <i>Caenorhabditis elegans</i> .					
<b>Grading System</b>					
The grading is based on the commitment to the research and the seminars.					
<b>Prerequisite Reading</b>					
Please read the standard textbooks, such as "Molecular Biology of the Cell".					
<b>Reference Materials</b>					
<a href="http://www.tmd.ac.jp/english/mbc/index.html">http://www.tmd.ac.jp/english/mbc/index.html</a>					
<b>Important Course Requirements</b>					
All participants are requested to be punctual and actively participate in discussion.					
<b>Note(s) to Students</b>					
Please do not hesitate to get more detailed information directly from Professor Hata if you are interested in this course.					

<b>Lecture No</b>	041127				
<b>Subject title</b>	Practice of Medical Biochemistry	<b>Subject ID</b>			
<b>Instructors</b>	HATA YUTAKA, IWASA HIROAKI, MATSUZAKI KYOKO, MARUYAMA JUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> To be announced when scheduled.					
<b>Course Purpose and Outline</b> The key words of our current studies are as follows: ageing, cancer, sarcopenia, drug development, signal transduction, tumor suppressor, and Caenorhabditis elegans. The details are described as follows. We give lectures about our current studies to graduate students and others, and provide graduate students with the opportunity to participate in them.					
<b>Course Objective(s)</b> The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important issues of life science in the next decades.					
<b>Lecture Style</b> Please consult the contact person.					
<b>Course Outline</b> Goals/Outline: To gain a wide knowledge of cancer biology and epigenetic changes underlying various human diseases through the study on Hippo pathway, RASSF, and stress granules.					
<b>Grading System</b> The grading is based on the commitment to the research and the seminars.					
<b>Prerequisite Reading</b> Please read the standard textbooks, such as "Molecular Biology of the Cell".					
<b>Reference Materials</b> <a href="http://www.tmd.ac.jp/english/mbc/index.html">http://www.tmd.ac.jp/english/mbc/index.html</a>					
<b>Important Course Requirements</b> All participants are requested to be punctual and actively participate in discussion.					
<b>Note(s) to Students</b> Please do not hesitate to get more detailed information directly from Professor Hata if you are interested in this course.					

<b>Lecture No</b>	041128				
<b>Subject title</b>	Laboratory practice of Medical Biochemistry			<b>Subject ID</b>	
<b>Instructors</b>	HATA YUTAKA, IWASA HIROAKI, MATSUZAKI KYOKO, MARUYAMA JUNICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced when scheduled.					
<b>Course Purpose and Outline</b>					
The key words of our current studies are as follows: ageing, cancer, sarcopenia, drug development, signal transduction, tumor suppressor, and <i>Caenorhabditis elegans</i> . The details are described as follows. We give lectures about our current studies to graduate students and others, and provide graduate students with the opportunity to participate in them.					
<b>Course Objective(s)</b>					
The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important issues of life science in the next decades.					
<b>Lecture Style</b>					
Please consult the contact person.					
<b>Course Outline</b>					
Goals/Outline: To perform biochemical, molecular biological, and cell biological experiments.					
<b>Grading System</b>					
The grading is based on the commitment to the research and the seminars.					
<b>Prerequisite Reading</b>					
Please read the standard textbooks, such as "Molecular Biology of the Cell".					
<b>Reference Materials</b>					
<a href="http://www.tmd.ac.jp/english/mbc/index.html">http://www.tmd.ac.jp/english/mbc/index.html</a>					
<b>Important Course Requirements</b>					
All participants are requested to be punctual and actively participate in discussion.					
<b>Note(s) to Students</b>					
Please do not hesitate to get more detailed information directly from Professor Hata if you are interested in this course.					

<b>Lecture No</b>	041129				
<b>Subject title</b>	Lecture of Joint Surgery and Sports Medicine	<b>Subject ID</b>			
<b>Instructors</b>	KOGA HIDEYUKI, MIYATAKE Kazumasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Venues are different according to the program.					
<b>Course Purpose and Outline</b> To understand the anatomy, physiological function, and disease of joint tissue. To understand the process of articular cartilage degeneration and discuss the current topics for joint regeneration therapy. To learn technics for isolation, expansion and differentiation of tissue derived mesenchymal stem cells in adults.					
<b>Course Objective(s)</b> Clinical: The goal of this course is to train graduate students in the majority to become established orthopedic surgeons who have expertise in joint related diseases and who have abundant experience to decide the most effective treatment against joint diseases. Science: The goal of this course is to train graduate students to acquire experimental skills related to cell transplantation therapy, such as isolation and maintenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).					
<b>Lecture Style</b> Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.					
<b>Course Outline</b> Goals/outline: Bone and joint system which support living body consists of bone, cartilage, tendon, ligament, and muscle tissues. These tissues with these own characteristic maintain function from an early development to death. These tissues go through the distinctive process of degeneration and healing against diminished ability to maintain function and injury. Clarification of the background of the tissue degeneration, prevention of these degeneration, treatment procedure, and promotion and control of the healing are studied.					
<b>Grading System</b> Gradings are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b> At least two to three research themes will be picked up for each student. Students will be required to understand the background, purpose, and significance of each research theme and must plan the experiments (staffs will help this process).					
<b>Reference Materials</b> For scientific topics, please refer to "Stem Cells, Arthritis and Rheumatology, and Osteoarthritis and Cartilage. For clinical topics, please refer to American Journal of Sports Medicine, Arthroscopy, Clinical Orthopedics and Related Research, Arthroplasty, and KSSTA Journal.					
<b>Important Course Requirements</b> Each graduate student will be carefully mentored from staffs and senior students with regard to his/her PhD research themes. All students must join and discuss their research progresses at least once a month.					

<b>Lecture No</b>	041130				
<b>Subject title</b>	Practice of Joint Surgery and Sports Medicine	<b>Subject ID</b>			
<b>Instructors</b>	KOGA HIDEYUKI, MIYATAKE Kazumasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Venues are different according to the program.					
<b>Course Purpose and Outline</b> To understand the anatomy, physiological function, and disease of joint tissue. To understand the process of articular cartilage degeneration and discuss the current topics for joint regeneration therapy. To learn technics for isolation, expansion and differentiation of tissue derived mesenchymal stem cells in adults.					
<b>Course Objective(s)</b> Clinical: The goal of this course is to train graduate students in the majority to become established orthopedic surgeons who have expertise in joint related diseases and who have abundant experience to decide the most effective treatment against joint diseases. Science: The goal of this course is to train graduate students to acquire experimental skills related to cell transplantation therapy, such as isolation and maintenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).					
<b>Lecture Style</b> Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.					
<b>Course Outline</b> Goals/Outline: The pathology and problems of the representative disease and injuries of bone, cartilage, tendon, ligament, and muscle tissues are studied, and diagnostic technique by physical examination, image studies, and pathology will be acquired. Diagnostic methods, examination procedures, and treatment procedure for bone and joint disease and injuries will be acquired, and therapeutic strategy and practice against bone and joint disease and injuries are studied.					
<b>Grading System</b> Gradings are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b> At least two to three research themes will be picked up for each student. Students will be required to understand the background, purpose, and significance of each research theme and must plan the experiments (staffs will help this process).					
<b>Reference Materials</b> For scientific topics, please refer to "Stem Cells, Arthritis and Rheumatology, and Osteoarthritis and Cartilage. For clinical topics, please refer to American Journal of Sports Medicine, Arthroscopy, Clinical Orthopedics and Related Research, Arthroplasty, and KSSTA Journal.					
<b>Important Course Requirements</b> Each graduate student will be carefully mentored from staffs and senior students with regard to his/her PhD research themes. All students must join and discuss their research progresses at least once a month.					

<b>Lecture No</b>	041131				
<b>Subject title</b>	Laboratory practice of Joint Surgery and Sports Medicine			<b>Subject ID</b>	
<b>Instructors</b>	KOGA HIDEYUKI, MIYATAKE Kazumasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Venues are different according to the program.					
<b>Course Purpose and Outline</b>					
To understand the anatomy, physiological function, and disease of joint tissue. To understand the process of articular cartilage degeneration and discuss the current topics for joint regeneration therapy. To learn technics for isolation, expansion and differentiation of tissue derived mesenchymal stem cells in adults.					
<b>Course Objective(s)</b>					
Clinicals: The goal of this course is to train graduate students in the majority to become established orthopedic surgeons who have expertise in joint related diseases and who have abundant experience to decide the most effective treatment against joint diseases. Science: The goal of this course is to train graduate students to acquire experimental skills related to cell transplantation therapy, such as isolation and maintenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).					
<b>Lecture Style</b>					
Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.					
<b>Course Outline</b>					
Goals/Outline:					
Following studies have been extensively carried out in our laboratory with various biological and molecular biological techniques:					
<ul style="list-style-type: none"> <li>- Establishment of separation and proliferation of mesenchymal stem cells</li> <li>- Elucidation of biological properties of mesenchymal stem cells</li> <li>- Development of treatment of joint cartilage injury using mesenchymal stem cells</li> <li>- Mechanism and treatment of joint pain</li> <li>- Development of knee and hip arthroplasty which accommodates Japanese</li> <li>- Promotion of anatomical knee anterior cruciate ligament reconstruction</li> </ul>					
<b>Grading System</b>					
Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b>					
At least two to three research themes will be picked up for each student. Students will be required to understand the background, purpose, and significance of each research theme and must plan the experiments (staffs will help this process).					
<b>Reference Materials</b>					
For scientific topics, please refer to "Stem Cells, Arthritis and Rheumatology, and Osteoarthritis and Cartilage. For clinical topics, please refer to American Journal of Sports Medicine, Arthroscopy, Clinical Orthopedics and Related Research, Arthroplasty, and KSSTA Journal.					
<b>Important Course Requirements</b>					
Each graduate student will be carefully mentored from staffs and senior students with regard to his/her PhD research themes. All students must join and discuss their research progresses at least once a month.					

<b>Lecture No</b>	041132				
<b>Subject title</b>	Lecture of Biostructural Science	<b>Subject ID</b>			
<b>Instructors</b>	TABATA MAKOTO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					



<b>Lecture No</b>	041133				
<b>Subject title</b>	Practice of Biostructural Science	<b>Subject ID</b>			
<b>Instructors</b>	TABATA MAKOTO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041134				
<b>Subject title</b>	Laboratory practice of Biostructural Science	<b>Subject ID</b>			
<b>Instructors</b>	TABATA MAKOTO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041135				
<b>Subject title</b>	Lecture of Pharmacology	<b>Subject ID</b>			
<b>Instructors</b>	EZURA YOICHI, TAMURA YUKIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Laboratory rooms for the pharmacology (M & D tower, 7th floor, north side #N-718/713) Seminar and lecture rooms of M & D tower 6th floor					
<b>Course Purpose and Outline</b>					
Knowledge about hard tissue pharmacology is acquired through experimental studies in vivo, discussing the pharmacological actions exerted on bones and teeth.					
<b>Course Objective(s)</b>					
The goal of this class is to acquire information about pharmacological and histomorphometric approach, skills for hard tissue processing, and overall knowledge related to bones and teeth, and to be a person who can argue in the interdisciplinary field of studies in English.					
<b>Lecture Style</b>					
Make small number of member to perform research theme independently.					
<b>Course Outline</b>					
Goals/outline: Make lectures concerning the drugs that affect the formation and resorption process of hard tissues such as bone and teeth and also provide information about the necessary techniques for hard tissue research.					
<b>Grading System</b>					
An overall assessment (grading) is performed based on the following points; 1) the participating rate of lectures, special lectures, and seminars, 2) the attitude toward academic meetings, 3) the submission of report on the indicated subjects, 4) frequency of presentation at academic meetings, 5) the behavior in class including the practical training.					
<b>Prerequisite Reading</b>					
Learning fundamentals of Pharmacology and Tissue Engineering is requirement.					
<b>Reference Materials</b>					
ラング・デール薬理学／H.P.Rang, J.M.Ritter, R.J.Flower, G.Henderson 原著,渡邊直樹 監訳,Rang, H. P.,Ritter, J. M.,Flower, Rod J,渡邊 直樹, pub. 2018,:エルゼビア・ジャパン, 2018 RANG & DELE`s Pharmacology Eight Edition. ELSEVIER Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism. Wiley-Blackwell					
<b>Important Course Requirements</b>					
It is better to make brush-up both the ICT levels for document retrieval and the English conversation skill.					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
EZURA YOICHI:ezura.mph@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
EZURA YOICHI:Wed 16:00-18:00					

<b>Lecture No</b>	041136				
<b>Subject title</b>	Practice of Pharmacology	<b>Subject ID</b>			
<b>Instructors</b>	EZURA YOICHI, TAMURA YUKIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Lecture place</b>					
Laboratory rooms for the pharmacology (M&D tower, 7th floor, north side) Seminar and lecture rooms of M&D tower					
<b>Course Purpose and Outline</b>					
Practical knowledge about hard tissue pharmacology will be acquired through in vivo experiments and discussion focusing on the pharmacological actions exerted on bones and teeth.					
<b>Course Objective(s)</b>					
The goal of this class is to acquire knowledge and skills about hard tissue pharmacology by learning how to analyze the morphological, biochemical and molecular biological changes in hard tissues in response to various pharmacological stimuli. Students are expected to be able to argue subjects in the interdisciplinary field of biological science in English.					
<b>Lecture Style</b>					
Small class teaching with a few members aiming individual research themes.					
<b>Course Outline</b>					
The lectures focus on the topics corresponding to the research themes. Articles related to the individual themes will be chosen and will be discussed about the background, methods, results, and the authors points of the reports. The final goal of the class is to make the students to be able to plan, conduct, obtain the data, analyze, and summarize them by themselves.					
<b>Grading System</b>					
An overall assessment (grading) is performed based on the following points; 1) the participating rate of lectures, special lectures, and seminars, 2) the attitude toward academic meetings, 3) the submission of report on the indicated subjects, 4) frequency of presentation at academic meetings, 5) the behavior in class including the practical training.					
<b>Prerequisite Reading</b>					
Learning fundamentals of Pharmacology and Tissue Engineering is requirement.					
<b>Reference Materials</b>					
ラング・デール薬理学／H.P.Rang, J.M.Ritter, R.J.Flower, G.Henderson 原著,渡邊直樹 監訳,Rang, H. P,Ritter, J. M,Flower, Rod J,渡邊 直樹, pub. 2018,.:エルゼビア・ジャパン, 2018 RANG & DELE`s Pharmacology Eight Edition. ELSEVIER Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism. Wiley-Blackwell					
<b>Note(s) to Students</b>					
The "Bone Club" will be held only in English. Brush-up your ICT levels for document retrieval and discussion in English.					
<b>Email</b>					
EZURA YOICHI:ezura.mph@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
EZURA YOICHI:Wed 16:00-18:00					

<b>Lecture No</b>	041137				
<b>Subject title</b>	Laboratory practice of Pharmacology	<b>Subject ID</b>			
<b>Instructors</b>	EZURA YOICHI, TAMURA YUKIHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Lecture place</b>					
Laboratory rooms for the pharmacology (M&D tower, 7th floor, north side) Seminar and lecture rooms of M&D tower					
<b>Course Purpose and Outline</b>					
Knowledge about hard tissue pharmacology will be acquired through experimental studies in vivo, discussing the pharmacological actions exerted on bones and teeth. Students are expected to perform initiative research work with assistance from the tutors.					
<b>Course Objective(s)</b>					
The goal of this class is to acquire skills on bone and tooth researches including hard tissue processing, and to be able to argue scientifically in English.					
<b>Lecture Style</b>					
Small number of members will perform research work separately according to the given themes.					
<b>Course Outline</b>					
Join a research group to learn the techniques for hard tissue research. Final goal is to become able to perform experiments using these techniques and to be able to evaluate the research data.					
<b>Grading System</b>					
An overall assessment (grading) is performed based on the following points; 1) the participating rate of lectures, special lectures, and seminars, 2) the attitude toward academic meetings, 3) the submission of report on the indicated subjects, 4) frequency of presentation at academic meetings, 5) the behavior in class including the practical training.					
<b>Prerequisite Reading</b>					
Fundamentals of Pharmacology and Tissue Engineering must be learned before joining the class.					
<b>TextBook</b>					
ラング・デール薬理学／H.P.Rang, J.M.Ritter, R.J.Flower, G.Henderson 原著,渡邊直樹 監訳,Rang, H. P.,Ritter, J. M.,Flower, Rod J,渡邊 直樹, pub. 2018.; エルゼビア・ジャパン, 2018					
<b>Reference Materials</b>					
RANG & DELE`s Pharmacology Eight Edition. ELSEVIER Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism. Wiley-Blackwell					
<b>Important Course Requirements</b>					
Students need the ability to search the literature on demand.					
<b>Email</b>					
EZURA YOICHI:ezura.mph@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
EZURA YOICHI:Wed 16:00-18:00					

<b>Lecture No</b>	041138				
<b>Subject title</b>	Lecture of Connective Tissue Regeneration	<b>Subject ID</b>			
<b>Instructors</b>	SHINOMURA TAMAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Connective tissues such as cartilage, bone, skin, and so on are characterized by the presence of abundant extracellular matrix. Therefore, their functions are highly dependent on the properties of their extracellular matrix. So, first of all, biochemical and molecular biological properties of extracellular matrix will be explained. Then, on that basis, we will have a better understanding of molecular background of how functional properties of each tissue are raised.					
<b>Course Objective(s)</b>					
To understand the properties of connective tissues and their functions, it is essential for us to understand the behavior of extracellular matrix molecules. So, the goal of this course is to give you basic knowledge of extracellular matrix necessary for studying connective tissues and to give you skills that you will need to read any paper related to your own study with ease.					
<b>Lecture Style</b>					
In an intimate setting, we want to have frank discussions with students as much as possible.					
<b>Course Outline</b>					
Goals/outline: Connective tissues including cartilage, bone, skin, oral tissues, and so on are characterized by the presence of abundant extracellular matrix, ECM. Therefore, to gain a better understanding of these tissues, it is essential for us to know the molecular background of ECM. The lecture will concentrate especially on the molecular properties of cartilage matrix and the regulation of their genes during cartilage tissue formation. In addition to ECM molecules, we will be focused on the transcription factors that control the chondrogenic differentiation and the expression of cartilage characteristic ECM molecules such as type II collagen and aggrecan. After gaining the understanding of molecular mechanisms underlying a cartilage tissue formation, we would like to discuss the challenges for the future in the field of hard tissues regeneration.					
<b>Grading System</b>					
The participation rate in programs will weigh heavily (80%) in grade calculations. The comprehensive evaluation will be conducted based on the active participation in the programs (20%).					
<b>Prerequisite Reading</b>					
You are required to learn a very basic knowledge of glycobiology by yourself using a textbook such as Biochemistry (eds: Lubert Stryer et. al) as a reference.					
<b>TextBook</b>					
ストライヤー生化学／Jeremy M. Berg, John L. Tymoczko, Lubert Stryer 著, Berg, Jeremy M., Tymoczko, John L., Stryer, Lubert, 入村, 達郎, 岡山, 博人, 清水, 孝雄: 東京化学同人, 2013					
<b>Reference Materials</b>					
Biochemistry. 7th ed. (eds: Lubert Stryer et. al) W.H. Freeman and Company, New York, 2012 Molecular Cell Biology. 7th ed. (eds: Harver Lodish et. al) W.H. Freeman and Company, New York, 2013					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b> None					
<b>Email</b> tshinomura.trg@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon / Wed / Fri, PM. 4:00-PM. 6:00, M & D Tower 7F (north side) Department of Connective Tissue Regeneration					

<b>Lecture No</b>	041139				
<b>Subject title</b>	Practice of Connective Tissue Regeneration	<b>Subject ID</b>			
<b>Instructors</b>	SHINOMURA TAMAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Connective tissues such as cartilage, bone, skin, and so on are characterized by the presence of abundant extracellular matrix. Therefore, their functions are highly dependent on the properties of their extracellular matrix. So, first of all, biochemical and molecular biological properties of extracellular matrix will be explained. Then, on that basis, we will have a better understanding of molecular background of how functional properties of each tissue are raised.					
<b>Course Objective(s)</b>					
To understand the properties of connective tissues and their functions, it is essential for us to understand the behavior of extracellular matrix molecules. So, the goal of this course is to give you basic knowledge of extracellular matrix necessary for studying connective tissues and to give you skills that you will need to read any paper related to your own study with ease.					
<b>Lecture Style</b>					
In an intimate setting, we want to have frank discussions with students as much as possible.					
<b>Course Outline</b>					
Goals/Outline: Based on the latest research developments of cartilage, specific and general discussions will be held to invent and to stimulate new research.					
<b>Grading System</b>					
The participation rate in programs will weigh heavily (80%) in grade calculations. The comprehensive evaluation will be conducted based on the active participation in the programs (20%).					
<b>Prerequisite Reading</b>					
You are required to learn a very basic knowledge of glycobiology by yourself using a textbook such as Biochemistry (eds: Lubert Stryer et. al) as a reference.					
<b>Reference Materials</b>					
Biochemistry. 7th ed. (eds: Lubert Stryer et. al) W.H. Freeman and Company, New York, 2012 Molecular Cell Biology. 7th ed. (eds: Harver Lodish et. al) W.H. Freeman and Company, New York, 2013					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
t.shinomura.trg@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon / Wed / Fri, PM. 4:00–PM. 6:00, M & D Tower 7F (north side) Department of Connective Tissue Regeneration					

<b>Lecture No</b>	041140				
<b>Subject title</b>	Laboratory practice of Connective Tissue Regeneration	<b>Subject ID</b>			
<b>Instructors</b>	SHINOMURA TAMAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Connective tissues such as cartilage, bone, skin, and so on are characterized by the presence of abundant extracellular matrix. Therefore, their functions are highly dependent on the properties of their extracellular matrix. So, first of all, biochemical and molecular biological properties of extracellular matrix will be explained. Then, on that basis, we will have a better understanding of molecular background of how functional properties of each tissue are raised.					
<b>Course Objective(s)</b>					
To understand the properties of connective tissues and their functions, it is essential for us to understand the behavior of extracellular matrix molecules. So, the goal of this course is to give you basic knowledge of extracellular matrix necessary for studying connective tissues and to give you skills that you will need to read any paper related to your own study with ease.					
<b>Lecture Style</b>					
In an intimate setting, we want to have frank discussions with students as much as possible.					
<b>Course Outline</b>					
Goals/Outline: Students can acquire basic technology related to the regulation of gene expression using established chondrogenic cell lines.					
<b>Grading System</b>					
The participation rate in programs will weigh heavily (80%) in grade calculations. The comprehensive evaluation will be conducted based on the active participation in the programs (20%).					
<b>Prerequisite Reading</b>					
You are required to learn a very basic knowledge of glycobiology by yourself using a textbook such as Biochemistry (eds: Lubert Stryer et. al) as a reference.					
<b>Reference Materials</b>					
Biochemistry. 7th ed. (eds: Lubert Stryer et. al) W.H. Freeman and Company, New York, 2012 Molecular Cell Biology. 7th ed. (eds: Harver Lodish et. al) W.H. Freeman and Company, New York, 2013					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
t.shinomura.trg@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Mon / Wed / Fri, PM. 4:00–PM. 6:00, M & D Tower 7F (north side) Department of Connective Tissue Regeneration					



<b>Lecture No</b>	041141				
<b>Subject title</b>	Lecture of Biochemistry	<b>Subject ID</b>			
<b>Instructors</b>	WATABE TETSURO, YOKOYAMA MIKI, INOUE KATAJINAANNA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Since cancer is the leading cause of deaths in Japan, we need to develop novel therapeutic strategies. Recent studies have shown that tumor is composed not only of cancer cells but also various types of stromal cells including blood and lymphatic vessels that induce tumor progression and metastasis. In order to explore the mechanisms how these components are involved in the formation and progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.					
<b>Course Objective(s)</b>					
Understand the molecular mechanisms underlying cancer progression					
Understand the mechanisms that govern the formation of blood and lymphatic vessels					
Discuss the heterogeneity within plasma membranes and its physiological significance.					
Discuss the components of extracellular matrix (ECM) with the focus on proteoglycans.					
<b>Lecture Style</b>					
Small group seminars					
<b>Course Outline</b>					
Background, recent progress, physiological importance, experimental approaches and unresolved problems of cancer, vascular formation, membrane structures and proteoglycans in ECM are explained.					
<b>Grading System</b>					
Attendance to lectures, seminars, laboratory practices is evaluated. In addition, research progress or presentation at the meeting is also evaluated totally.					
<b>Prerequisite Reading</b>					
Please attend a class with some information of your research materials.					
<b>Reference Materials</b>					
Check with the teacher in charge for the program.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
WATABE TETSURO:t-watabe.bch@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
WATABE TETSURO:Mon ~ Fri (AM 10:00-PM5:00)					
M&D Tower N706					

<b>Lecture No</b>	041142				
<b>Subject title</b>	Practice of Biochemistry	<b>Subject ID</b>			
<b>Instructors</b>	WATABE TETSURO, YOKOYAMA MIKI, INOUE KATAJINAANNA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Since cancer is the leading cause of deaths in Japan, we need to develop novel therapeutic strategies. Recent studies have shown that tumor is composed not only of cancer cells but also various types of stromal cells including blood and lymphatic vessels that induce tumor progression and metastasis. In order to explore the mechanisms how these components are involved in the formation and progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.					
<b>Course Objective(s)</b>					
Understand the molecular mechanisms underlying cancer progression					
Understand the mechanisms that govern the formation of blood and lymphatic vessels					
Discuss the heterogeneity within plasma membranes and its physiological significance.					
Discuss the components of extracellular matrix (ECM) with the focus on proteoglycans.					
<b>Lecture Style</b>					
Small group seminars					
<b>Course Outline</b>					
Based on the recent progresses on the biomolecules, specific and general discussions will be held to invent and to stimulate new research.					
<b>Grading System</b>					
Attendance to lectures, seminars, laboratory practices is evaluated. In addition, research progress or presentation at the meeting is also evaluated totally.					
<b>Prerequisite Reading</b>					
Please attend a class with some information of your research materials.					
<b>Reference Materials</b>					
Check with the teacher in charge for the program.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
WATABE TETSURO:t-watabe.bch@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
WATABE TETSURO: Mon ~ Fri (AM 10:00-PM5:00)					
M&D Tower N706					

<b>Lecture No</b>	041143				
<b>Subject title</b>	Laboratory practice of Biochemistry			<b>Subject ID</b>	
<b>Instructors</b>	WATABE TETSURO, YOKOYAMA MIKI, INOUE KATAJINAANNA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Since a venue depends on the program, please ask a contact person before taking part in the course.					
<b>Course Purpose and Outline</b>					
Since cancer is the leading cause of deaths in Japan, we need to develop novel therapeutic strategies. Recent studies have shown that tumor is composed not only of cancer cells but also various types of stromal cells including blood and lymphatic vessels that induce tumor progression and metastasis. In order to explore the mechanisms how these components are involved in the formation and progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.					
<b>Course Objective(s)</b>					
Understand the molecular mechanisms underlying cancer progression					
Understand the mechanisms that govern the formation of blood and lymphatic vessels					
Discuss the heterogeneity within plasma membranes and its physiological significance.					
Discuss the components of extracellular matrix (ECM) with the focus on proteoglycans.					
<b>Lecture Style</b>					
Small group seminars					
<b>Course Outline</b>					
Students are required to present experimental data for discussion, which will be a crucial step to evaluate and improve the research progress.					
<b>Grading System</b>					
Attendance to lectures, seminars, laboratory practices is evaluated. In addition, research progress or presentation at the meeting is also evaluated totally.					
<b>Prerequisite Reading</b>					
Please attend a class with some information of your research materials.					
<b>Reference Materials</b>					
Check with the teacher in charge for the program.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
WATABE TETSURO:t-watabe.bch@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
WATABE TETSURO: Mon ~ Fri (AM 10:00-PM5:00)					
M&D Tower N706					

<b>Lecture No</b>	041144				
<b>Subject title</b>	Lecture of Cell Signaling	<b>Subject ID</b>			
<b>Instructors</b>	NAKASHIMA TOMOKI, HAYASHI MIKHITO, ONO TAKEHITO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b>					
Students will learn the basis of the life science by understanding the fundamental mechanism of intracellular signal transduction that regulates a variety of cellular functions including cell survival, death, proliferation and differentiation.					
<b>Course Objective(s)</b>					
Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.					
<b>Lecture Style</b>					
Participatory class by a small group.					
<b>Course Outline</b>					
Goals/outline: Students will learn the basis of the life science by understanding the fundamental mechanism of intracellular signal transduction that regulates a variety of cellular functions including cell survival, death, proliferation and differentiation. In addition, students will learn the molecular bases of disease therapies by understanding the abnormalities of intra- and/or intercellular signal transduction pathways underlying pathological conditions.					
<b>Grading System</b>					
Based on the attendance rate and presentation in lecture and scientific meeting, we perform a general evaluation.					
<b>Prerequisite Reading</b>					
Under the supervision of staffs, students will prepare review presentation of scientific journal.					
<b>Reference Materials</b>					
Dynamics of Bone and Cartilage Metabolism (Academic Press)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Limited number: none Please contact the instructor in charge before the course.					

<b>Lecture No</b>	041145				
<b>Subject title</b>	Practice of Cell Signaling	<b>Subject ID</b>			
<b>Instructors</b>	NAKASHIMA TOMOKI, HAYASHI MIKIHITO, ONO TAKEHITO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b> Students will learn the basis of the life science by understanding the fundamental mechanism of intracellular signal transduction that regulates a variety of cellular functions including cell survival, death, proliferation and differentiation.					
<b>Course Objective(s)</b> Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.					
<b>Lecture Style</b> Participatory class by a small group.					
<b>Course Outline</b> Goals/Outline: Students will experience the experimental and analytical process of advanced science. Under the supervision of staffs, students will join the analysis of data obtained from experiments. Our major research interests include: 1. Signal transduction mechanisms that regulate the differentiation of osteoclast, osteoblast and osteocytes important cell lineages that regulate bone remodeling. 2. Regulation of bone remodeling by molecules in the immune and locomotive systems. 3. Signal transduction in bone destructive diseases and development of clinical applications.					
<b>Grading System</b> Based on the attendance rate and presentation in lecture and scientific meeting, we perform a general evaluation.					
<b>Prerequisite Reading</b> Under the supervision of staffs, students will prepare review presentation of scientific journal.					
<b>Reference Materials</b> Dynamics of Bone and Cartilage Metabolism (Academic Press)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Limited number: none Please contact the instructor in charge before the course.					

<b>Lecture No</b>	041146				
<b>Subject title</b>	Laboratory practice of Cell Signaling	<b>Subject ID</b>			
<b>Instructors</b>	NAKASHIMA TOMOKI, HAYASHI MIKIHITO, ONO TAKEHITO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b> Students will learn the basis of the life science by understanding the fundamental mechanism of intracellular signal transduction that regulates a variety of cellular functions including cell survival, death, proliferation and differentiation.					
<b>Course Objective(s)</b> Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.					
<b>Lecture Style</b> Participatory class by a small group.					
<b>Course Outline</b> Goals/Outline: Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.					
<b>Grading System</b> Based on the attendance rate and presentation in lecture and scientific meeting, we perform a general evaluation.					
<b>Prerequisite Reading</b> Under the supervision of staffs, students will prepare review presentation of scientific journal.					
<b>Reference Materials</b> Dynamics of Bone and Cartilage Metabolism (Academic Press)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Limited number: none Please contact the instructor in charge before the course.					

<b>Lecture No</b>	041147				
<b>Subject title</b>	Lecture of Periodontology I			<b>Subject ID</b>	
<b>Instructors</b>	WATA Takanori, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, IKEDA Yuuichi, TSUMANUMA Yuuka				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Demonstration room of Hozon-Kyosei at 5th floor of Building No.7					
<b>Course Purpose and Outline</b>					
The purpose of this course is to clarify the edges and problems of the current periodontal research. In order to achieve this, it is necessary to collect the current information and update of this field, clarify the problems that need to be addressed now and in the future, and develop novel methods towards solving those problems.					
<b>Course Objective(s)</b>					
1. To be able to explain the mechanisms of the initiation of periodontal diseases. 2. To be able to explain the association between periodontal and systemic diseases. 3. To be able to explain the current status of periodontal regenerative therapy.					
<b>Lecture Style</b>					
As much as possible, employ small class size, and scheduled discussion time, in order to promote mutual understanding.					
<b>Course Outline</b>					
Goals/outline: The goal of this course is to acquire the current knowledge about periodontology including etiology, host-parasite interactions, oral microbiology, periodontal medicine, regenerative therapy.					
Available programs: Lecture April 10th – July 17th Every Friday 9:30–12:00 Special Lecture As needed (Details will be announced)					
<b>Grading System</b>					
Grading will be performed by analytic evaluation of attendance/performance in lecture.					
<b>Prerequisite Reading</b>					
Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.					
<b>Reference Materials</b>					
Journal of Periodontology Journal of Clinical Periodontology Journal of Periodontal Research Journal of Dental Research Periodontology 2000					
<b>Important Course Requirements</b>					
Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b>					
Check with the teacher in charge of the details of the course schedule and lecture hall.					

<b>Lecture No</b>	041148				
<b>Subject title</b>	Practice of Periodontology I	<b>Subject ID</b>			
<b>Instructors</b>	IWATA Takanori, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, IKEDA Yuuichi, TSUMANUMA Yuuka				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Demonstration room of Hozon-Kyosei at 5th floor of Building No.7					
<b>Course Purpose and Outline</b>					
The purpose of this course is to clarify the edges and problems of the current periodontal research. In order to achieve this, it is necessary to collect the current information and update in this field, clarify the problems that need to be addressed now and in the future, and develop novel methods towards solving those problems.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1. To be able to explain the mechanisms of the initiation of periodontal diseases.</li> <li>2. To be able to explain the association between periodontal and systemic diseases.</li> <li>3. To be able to explain the current status of periodontal regenerative therapy.</li> <li>4. To be able to make a comprehensive treatment and prevention plans for periodontal disease, and practicing the treatment.</li> </ol>					
<b>Lecture Style</b>					
Seminar style. We will set a forum for discussion to promote a full understanding of the contents.					
<b>Course Outline</b>					
Goals/Outline:					
The goal of this seminar is to learn the comprehensive periodontal treatment through the clinical cases. This practice also provide students to acquire knowledge about the current trends in periodontitis/periodontics researches. We will also discuss novel research approaches.					
Available program:					
Clinical conference    Every Friday    16:30~17:30					
Journal Club    Every Friday    17:30~18:30					
<b>Grading System</b>					
Grading will be performed by the analytic evaluation of attendance/performance in lecture.					
<b>Prerequisite Reading</b>					
Students will need to collect novel information from the current periodontal research using Pub Med, Medline, and the Internet.					
<b>Reference Materials</b>					
Journal of Periodontology					
Journal of Clinical Periodontology					
Journal of Periodontal Research					
Journal of Dental Research					
Periodontology 2000					
<b>Important Course Requirements</b>					
Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b>					
To take Lecture is required for participation in Practice and Lab.					



<b>Lecture No</b>	041149				
<b>Subject title</b>	Laboratory practice of Periodontology I			<b>Subject ID</b>	
<b>Instructors</b>	IWATA Takanori, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, IKEDA Yuuichi, TSUMANUMA Yuuka				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Please ask the contact person.					
<b>Course Purpose and Outline</b> The purpose of this course is to learn the experimental approaches for clarifying the unknown mechanisms of periodontal and related diseases through basic and clinical researches. The participants will also attend the researches for developing new treatments and preventive strategies for the diseases.					
<b>Course Objective(s)</b> To be able to explain and perform the research for periodontal diseases and related fields.					
<b>Lecture Style</b> The lab is organized by some groups to do one-on-one instruction.					
<b>Course Outline</b> To solve the unmet periodontal needs, various approaches, such as histology, microbiology, molecular biology, immunology, clinical evaluation, as well as other methods, are introduced in our laboratory. Students will focus on one or some subjects and investigate them based on the sciences above.  Available programs: Participation in a research group occasionally					
<b>Grading System</b> Grading will be performed by analytic evaluation of attendance/performance in lab, as well as analytic evaluation of individual research results.					
<b>Prerequisite Reading</b> Students will need to collect novel information from the current periodontal research using Pub Med, Medline, and the Internet.					
<b>Reference Materials</b> Journal of Periodontology Journal of Clinical Periodontology Journal of Periodontal Research Journal of Dental Research Periodontology 2000					
<b>Important Course Requirements</b> Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b> To take Lecture is required for participation in Practice and Lab.					

<b>Lecture No</b>	041150				
<b>Subject title</b>	Lecture of Periodontology II			<b>Subject ID</b>	
<b>Instructors</b>	AOKI AKIRA, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, SHINOKI TAKESHI, NAGAI SHIGEYUKI, YOSHINO TOSHIAKI, TANIGUCHI YOICHI, TSUBOKAWA MASAKI, TAKAGI TOHRU, KAWAMURA RIE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Class Rooms #1-3 on 1st or 2nd floor of Building No.7 Meeting room, Department of Periodontology on 7th floor of Building No.10					
<b>Course Purpose and Outline</b> The purpose is to clarify the edges and problems of the current current photoperiodontics research. In order to achieve this, it is necessary to: collect the current information from peridental phototherapy and photodiagnosis research; clarify the problems that need to be addressed in the future; develop novel methods towards solving those problems; and refine training for the development of research plans.					
<b>Course Objective(s)</b> 1. To be able to explain the properties of lasers/lights. 2. To be able to explain the effects of lasers/lights on periodontal tissues/cells as well as on periodontitis. 3. To be able to explain the mechanism of antimicrobial photodynamic therapy (a-PDT). 4. To be able to explain the mechanism of optical coherence tomography (OCT).					
<b>Lecture Style</b> As much as possible, employ small class size, and scheduled discussion time, in order to promote mutual understanding.					
<b>Course Outline</b> To educate students with regard to the properties of lasers/lights, the effects of lasers/lights on periodontal tissues/cells as well as periodontitis, the mechanism of antimicrobial photodynamic therapy (a-PDT), the mechanism of optical coherence tomography (OCT), and other related topics profoundly, and to find a solution through discussion research outcomes as to photoperiodontics such as phototherapy and photodiagnosis. Lectures: Sep 4, 18, 25, Oct 2, 9, Nov 13, Fri: 10:00~12:00 am Sep 11, Nov 6, Fri: 17:00~19:00 pm Seminar: Every Friday 16:30~18:30 pm					
<b>Grading System</b> Grading will be performed by analytic evaluation of attendance in lecture.					
<b>Prerequisite Reading</b> Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.					
<b>Reference Materials</b> 歯周治療・インプラント治療における Er:YAG レーザーの使い方／和泉雄一, 青木章, 石川烈編集 ; 和泉雄一 [ほか]執筆和泉, 雄一, 青木, 章, 石川, 烈.: 医学情報社, 2011 Er:YAG レーザーの基礎と臨床／石川烈編, 石川, 烈.: 第一歯科出版, 2011 歯科用レーザー120%活用術 : よくわかる／青木章, 和泉雄一 編著, 青木, 章, 1963-, 和泉, 雄一.: デンタルダイヤモンド社, 2012 一からわかるレーザー歯科治療／加藤純二, 篠木 毅, 栗津 邦男, 守矢佳世子.: 医歯薬出版, 2003 レーザー歯学の手引き／渡辺久/監修: デンタルダイヤモンド社, 2015 Oral laser application／A. Moritz: Quintessence, 2006 Atlas of laser applications in dentistry／Donald Coluzzi, Robert A. Convissar: Quintessence, 2007 Ten lectures on basic science of laser phototherapy／Tiina Karu: Prima Books AB, 2007 Lasers in Surgery and Medicine, Lasers in Medical Science, Photomedicine and Laser Surgery, Journal of Biophotonics, Journal of Periodontology, Journal of Clinical Periodontology, Journal of Periodontal Research, Nature, Nature Medicine, Science					
<b>Important Course Requirements</b> Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b> None					
<b>Email</b> AOKI AKIRA: aoperi@tmd.ac.jp					
<b>Instructor's Contact Information</b> AOKI AKIRA: From Monday to Thursday, 17:00-18:00 pm, 7th floor, 10th building, Room #5					

<b>Lecture No</b>	041151				
<b>Subject title</b>	Practice of Periodontology II	<b>Subject ID</b>			
<b>Instructors</b>	AOKI AKIRA, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, SHINOKI TAKESHI, NAGAI SHIGEYUKI, YOSHINO TOSHIAKI, TANIGUCHI YOICHI, TSUBOKAWA MASAKI, TAKAGI TOHRU, KAWAMURA RIE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Hozon-Kyosei Demonstration Room on 5th floor of Building No.7					
<b>Course Purpose and Outline</b> The purpose is to clarify the edges and problems of the current current photoperiodontics research. In order to achieve this, it is necessary to: collect the current information from periodontal phototherapy and photodiagnosis research; clarify the problems that need to be addressed in the future; develop novel methods towards solving those problems; and refine training for the development of research plans.					
<b>Course Objective(s)</b> 1. To be able to explain the properties of lasers/lights. 2. To be able to explain the effects of lasers/lights on periodontal tissues/cells as well as on periodontitis. 3. To be able to explain the mechanism of antimicrobial photodynamic therapy (a-PDT). 4. To be able to explain the mechanism of optical coherence tomography (OCT).					
<b>Lecture Style</b> As much as possible, employ small class size, and scheduled discussion time, in order to promote mutual understanding.					
<b>Course Outline</b> To collect information, from the literature and Internet, as to current trends in photoperiodontics research. We will also discuss and investigate novel research approaches.					
<b>Grading System</b> Grading will be performed by analytic evaluation of attendance/performance in practice.					
<b>Prerequisite Reading</b> Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.					
<b>Reference Materials</b> Lasers in Surgery and Medicine, Lasers in Medical Science, Photomedicine and Laser Surgery, Journal of Biophotonics, Journal of Periodontology, Journal of Clinical Periodontology, Journal of Periodontal Research, Nature, Nature Medicine, Science					
<b>Important Course Requirements</b> Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b> None					
<b>Email</b> AOKI AKIRA:aoperi@tmd.ac.jp					
<b>Instructor's Contact Information</b> AOKI AKIRA:From Monday to Thursday, 17:00–18:00 pm, 7th floor, 10th building, Room #5					

<b>Lecture No</b>	041152				
<b>Subject title</b>	Laboratory practice of Periodontology II			<b>Subject ID</b>	
<b>Instructors</b>	AOKI AKIRA, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, SHINOKI TAKESHI, NAGAI SHIGEYUKI, YOSHINO TOSHIAKI, TANIGUCHI YOICHI, TSUBOKAWA MASAKI, TAKAGI TOHRU, KAWAMURA RIE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please ask contact persons.					
<b>Course Purpose and Outline</b> To learn the experimental approaches for clarifying the effects of lasers/LEDs on cells/tissues as well as their unknown mechanisms, through basic and clinical researches.					
<b>Course Objective(s)</b> To be able to explain and perform the research for photoperiodontics.					
<b>Lecture Style</b> Lab is organized in small group to do one-on-one instruction.					
<b>Course Outline</b> To clarify the effects of periodontal phototherapy, various approaches, such as histology, microbiology, molecular biology, immunology, clinical evaluation, as well as other methods, are introduced in our laboratory. Students will focus on one or some subjects and investigate them based on the sciences above.					
<b>Grading System</b> Grading will be performed by analytic evaluation of attendance/performance in lab as well as analytic evaluation of individual research results.					
<b>Prerequisite Reading</b> Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.					
<b>Reference Materials</b> Lasers in Surgery and Medicine, Lasers in Medical Science, Photomedicine and Laser Surgery, Journal of Biophotonics, Journal of Periodontology, Journal of Clinical Periodontology, Journal of Periodontal Research, Nature, Nature Medicine, Science					
<b>Important Course Requirements</b> Make sure to attend the course as much as possible. Attendance is important for successful participation and performance in the course. As such, it will play a role in evaluation/grading of the student.					
<b>Note(s) to Students</b> None					
<b>Email</b> AOKI AKIRA:aoperi@tmd.ac.jp					
<b>Instructor's Contact Information</b> AOKI AKIRA:From Monday to Thursday, 17:00–18:00 pm, 7th floor, 10th building, Room #5					

<b>Lecture No</b>	041153				
<b>Subject title</b>	Lecture of Inorganic Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KAWASHITA Masakazu, YOKOI Taishi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Department of Inorganic Materials, Institute of Biomaterials and Bioengineering					
<b>Course Purpose and Outline</b>					
We will discuss recent topics in basic research and clinical applications in the field of inorganic biomaterials such as hydroxyapatite. Focusing on research papers selected from special journals, we will investigate the latest research trends on inorganic biomaterials and discuss the possibility of development of new inorganic biomaterials.					
<b>Course Objective(s)</b>					
To learn about recent topics in fundamental and applied research in the field of inorganic biomaterials, find current problems on your own, and propose solutions for the problems.					
<b>Lecture Style</b>					
All courses are carried out in a small group in order to learn fundmenatal knowledge and skills about inorganic biomaterials.					
<b>Course Outline</b>					
In order to understand significance and role of inorganic biomaterial science in medicine and dentistry, basic science, recent research and development trends of inorganic biomaterials are introduced citing artificial hip joints, dental implants, bone cements, and inorganic biomaterials for cancer treatment as examples.					
<b>Grading System</b>					
Grades based on participation in lecture, practice and lab (80%) and publication in scientific journals and presentation at conference (20%). Lab: The grading is comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b>					
It is desirable to review high-school level chemistry and physics.					
<b>Reference Materials</b>					
1) "Ceramic Biomaterials", edited by M. Okazaki et al., Corona Publishing, 2009 (ISBN-10: 4339070963) (in Japanese) 2) "An Introduction to Bioceramics (Second Edition)", edited by L. Hench, Imperial College Press, 2013 (ISBN-10: 9781908977151)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp					

<b>Lecture No</b>	041154				
<b>Subject title</b>	Practice of Inorganic Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KAWASHITA Masakazu, YOKOI Taishi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Department of Inorganic Materials, Institute of Biomaterials and Bioengineering					
<b>Course Purpose and Outline</b>					
We will discuss recent topics in basic research and clinical applications in the field of inorganic biomaterials such as hydroxyapatite. Focusing on research papers selected from special journals, we will investigate the latest research trends on inorganic biomaterials and discuss the possibility of development of new inorganic biomaterials.					
<b>Course Objective(s)</b>					
To learn about recent topics in fundamental and applied research in the field of inorganic biomaterials, find current problems on your own, and propose solutions for the problems.					
<b>Lecture Style</b>					
All courses are carried out in a small group in order to learn fundamental knowledge and skills about inorganic biomaterials.					
<b>Course Outline</b>					
To search recent research papers on inorganic biomaterials and discuss about the papers in order to develop knowledge on inorganic biomaterials.					
<b>Grading System</b>					
Grades based on participation in lecture, practice and lab (80%) and publication in scientific journals and presentation at conference (20%). Lab: The grading is comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b>					
It is desirable to review high-school level chemistry and physics.					
<b>Reference Materials</b>					
1) "Ceramic Biomaterials", edited by M. Okazaki et al., Corona Publishing, 2009 (ISBN-10: 4339070963) (in Japanese) 2) "An Introduction to Bioceramics (Second Edition)", edited by L. Hench, Imperial College Press, 2013 (ISBN-10: 9781908977151)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp YOKOI Taishi:yokoi.taishi.bcr@tmd.ac.jp					

<b>Lecture No</b>	041155				
<b>Subject title</b>	Laboratory practice of Inorganic Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KAWASHITA Masakazu, YOKOI Taishi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Department of Inorganic Materials, Institute of Biomaterials and Bioengineering					
<b>Course Purpose and Outline</b>					
We will discuss recent topics in basic research and clinical applications in the field of inorganic biomaterials such as hydroxyapatite. Focusing on research papers selected from special journals, we will investigate the latest research trends on inorganic biomaterials and discuss the possibility of development of new inorganic biomaterials.					
<b>Course Objective(s)</b>					
To learn about recent topics in fundamental and applied research in the field of inorganic biomaterials, find current problems on your own, and propose solutions for the problems.					
<b>Lecture Style</b>					
All courses are carried out in a small group in order to learn fundamental knowledge and skills about inorganic biomaterials.					
<b>Course Outline</b>					
Synthesis, structural analysis and property evaluation of inorganic biomaterials will be conducted. Some samples will be soaked in simulated body fluid (SBF) with inorganic ion concentrations approximately equal to those of human blood plasma, and their surface structural change due to the soaking in SBF will be evaluated.					
<b>Grading System</b>					
Grades based on participation in lecture, practice and lab (80%) and publication in scientific journals and presentation at conference (20%). Lab: The grading is comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b>					
It is desirable to review high-school level chemistry and physics.					
<b>Reference Materials</b>					
1) "Ceramic Biomaterials", edited by M. Okazaki et al., Corona Publishing, 2009 (ISBN-10: 4339070963) (in Japanese) 2) "An Introduction to Bioceramics (Second Edition)", edited by L. Hench, Imperial College Press, 2013 (ISBN-10: 9781908977151)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp YOKOI Taishiyokoi.taishi.bcr@tmd.ac.jp					

<b>Lecture No</b>	041156				
<b>Subject title</b>	Lecture of Global Health Promotion			<b>Subject ID</b>	
<b>Instructors</b>	FUJIWARA Takeo, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke, NAWA Nobutoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Lectures will mainly take place in rooms of the Department of Global Health Promotion. Special lectures will be held in auditoriums. For practices and labs, please confirm venue with the instructors.					
<b>Course Purpose and Outline</b> The purpose of this course is to develop the knowledge and skills of the participants to prevent diseases. Participants will: understand broad risk factors from individual factors (e.g., genetic factor) and environmental factors, especially social detremnants, their inter actions; make causal inference applying a life–course perspective on disease onset (e.g., long–term effect of fetus or childhood exposure); perform advanced statistics; acquire attitudes toward social contribution through writeing and publishing scientific papers in international journals. The final goal is that the participants are able to plan and implement health policy or preogram to prevent diseases in a real life setting.					
<b>Course Objective(s)</b> The participants will be able to: 1. explain the risk of disease. 2. verbalize own research question and develop a hypothesis to test it. 3. develop research field or access secondary data to test the hypothesis. 4. explain an epidemiologic study design. 5. calculate a sample size. 6. analyse basic model (multivariate analysis, logistic analysis, etc) and conduct advaced analysis (multilevel analysis, propensity score moatching, multiple imputation, etc) 7. justify the research question logically, in scientific writing in English. 8. develop an intervention (policy or program) and design a study protocol to assess its effectiveness.					
<b>Lecture Style</b> Lectures, group discussions, and team project. English is used if needed					
<b>Course Outline</b> 1.Basics of epidemiology and biostatistics 2.Statistical analysis including basics and high–level 3.Critical appraisal for recent important papers to generate new research question					
<b>Grading System</b> Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge on analysis, and paper writing, as professional of public health field.					
<b>Prerequisite Reading</b> Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.					
<b>Reference Materials</b> Lisa F. Berkman, Ichiro Kawachi, Maria Glymour. Social epidmeiology. 2nd ed. USA: Oxford University Press; 2014. Richard A. Crosby, Ralph J. DiClemente, Laura F. Salazar. Research methods in health promotion. San Francisco: Jossey–Bass Public Health; 2006. Marcello Pagano, Kimberlee Gauvreau. Principles of Biostatistics. 2nd ed. Brooks/Cole; 2000.					
<b>Important Course Requirements</b> Participants are required to have own research question. Instructor's permission are required before course registration					
<b>Note(s) to Students</b> This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays. Harvard School of Public Health joint rsearch program will be offered. Research field can be domestic (i.e. in Japan) or global. Students with any prior background(medicine, dentistry, nutrition, nursing, economics, education, etc) is welcome.					
<b>Instructor's Contact Information</b> FUJIWARA Takeo:Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp					



<b>Lecture No</b>	041157				
<b>Subject title</b>	Practice of Global Health Promotion			<b>Subject ID</b>	
<b>Instructors</b>	FUJIWARA Takeo, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke, NAWA Nobutoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Lectures will mainly take place in rooms of the Department of Global Health Promotion. Special lectures will be held in auditoriums. For practices and labs, please confirm venue with the instructors.					
<b>Course Purpose and Outline</b> The purpose of this course is to develop the knowledge and skills of the participants to prevent diseases. Participants will: understand broad risk factors from individual factors (e.g., genetic factor) and environmental factors, especially social determinants, their interactions; make causal inference applying a life-course perspective on disease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statistics; acquire attitudes toward social contribution through writing and publishing scientific papers in international journals. The final goal is that the participants are able to plan and implement health policy or program to prevent diseases in a real life setting.					
<b>Course Objective(s)</b> The participants will be able to: 1. explain the risk of disease. 2. verbalize own research question and develop a hypothesis to test it. 3. develop research field or access secondary data to test the hypothesis. 4. explain an epidemiologic study design. 5. calculate a sample size. 6. analyse basic model (multivariate analysis, logistic analysis, etc) and conduct advanced analysis (multilevel analysis, propensity score matching, multiple imputation, etc) 7. justify the research question logically, in scientific writing in English. 8. develop an intervention (policy or program) and design a study protocol to assess its effectiveness.					
<b>Lecture Style</b> Lectures, group discussions, and team project. English is used if needed					
<b>Course Outline</b> 1. Learn how to handle statistical software (STATA), using real data. 2. Participate in an epidemiological study in the field (wherever in Japan or elsewhere) 3. Report research progress and discuss how to proceed an epidemiological study					
<b>Grading System</b> Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge on analysis, and paper writing, as professional of public health field.					
<b>Prerequisite Reading</b> Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.					
<b>Reference Materials</b> Lisa F. Berkman, Ichiro Kawachi, Maria Glymour. Social epidemiology. 2nd ed. USA: Oxford University Press; 2014. Richard A. Crosby, Ralph J. DiClemente, Laura F. Salazar. Research methods in health promotion. San Francisco: Jossey-Bass Public Health; 2006. Marcello Pagano, Kimberlee Gauvreau. Principles of Biostatistics. 2nd ed. Brooks/Cole; 2000.					
<b>Important Course Requirements</b> Participants are required to have own research question. Instructor's permission are required before course registration					
<b>Note(s) to Students</b> This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays. Harvard School of Public Health joint research program will be offered. Research field can be domestic (i.e. in Japan) or global. Students with any prior background (medicine, dentistry, nutrition, nursing, economics, education, etc) is welcome.					
<b>Instructor's Contact Information</b> FUJIWARA Takeo: Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp					

<b>Lecture No</b>	041158				
<b>Subject title</b>	Laboratory practice of Global Health Promotion			<b>Subject ID</b>	
<b>Instructors</b>	FUJIWARA Takeo, MORITA AYAKO, TANI Yukako, MATSUYAMA Yuusuke, NAWA Nobutoshi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Lectures will mainly take place in rooms of the Department of Global Health Promotion. Special lectures will be held in auditoriums. For practices and labs, please confirm venue with the instructors.					
<b>Course Purpose and Outline</b> The purpose of this course is to develop the knowledge and skills of the participants to prevent diseases. Participants will: understand broad risk factors from individual factors (e.g., genetic factor) and environmental factors, especially social detremnants, their inter actions; make causal inference applying a life-course perspective on disease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statistics; acquire attitudes toward social contribution through writeing and publishing scientific papers in international journals. The final goal is that the participants are able to plan and implement health policy or preogram to prevent diseases in a real life setting.					
<b>Course Objective(s)</b> The participants will be able to: 1. explain the risk of disease. 2. verbalize own research question and develop a hypothesis to test it. 3. develop research field or access secondary data to test the hypothesis. 4. explain an epidemiologic study design. 5. calculate a sample size. 6. analyse basic model (multivariate analysis, logistic analysis, etc) and conduct advnced analysis (multilevel analysis, propensity score moatching, multiple imputation, etc) 7. justify the research question logically, in scientific writing in English. 8. develop an intervention (policy or program) and design a study protocol to assess its effectiveness.					
<b>Lecture Style</b> Lectures, group discussions, and team project. English is used if needed					
<b>Course Outline</b> 1. Learn how to handle statistical software (STATA), using real data. 2. Participate in an epidemiological study in the field (wherever in Japan or elsewhere) 3. Report research progress and discuss how to proceed an epidemiological study					
<b>Grading System</b> Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge on analysis, and paper writing, as professional of public health field.					
<b>Prerequisite Reading</b> Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.					
<b>Reference Materials</b> Lisa F. Berkman, Ichiro Kawachi, Maria Glymour. Social epidmeiology. 2nd ed. USA: Oxford University Press; 2014. Richard A. Crosby, Ralph J. DiClemente, Laura F. Salazar. Research methods in health promotion. San Francisco: Jossey-Bass Public Health; 2006. Marcello Pagano, Kimberlee Gauvreau. Principles of Biostatistics. 2nd ed. Brooks/Cole; 2000.					
<b>Important Course Requirements</b> Participants are required to have own research question. Instructor's permission are required before course registration					
<b>Note(s) to Students</b> This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays. Harvard School of Public Health joint rsearch program will be offered. Research field can be domestic (i.e. in Japan) or global. Students with any prior background(medicine, dentistry, nutrition, nursing, economics, education, etc) is welcome.					
<b>Instructor's Contact Information</b> FUJIWARA Takeo:Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp					

<b>Lecture No</b>	041159				
<b>Subject title</b>	Lecture of Environmental Parasitology	<b>Subject ID</b>			
<b>Instructors</b>	IWANAGA Shirou, KUMAGAI TAKASHI, SHINNZAWA Naoaki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Conference room and Laboratory of Environmental Parasitology (16th Floor, M & D Tower)					
<b>Course Purpose and Outline</b>					
Parasitic infections are instructed from the view points of global health, biomedical importance, and public health. For these purposes, contents of the lectures include biological aspects of pathogenic parasites, clinicopathological characteristics of parasite infections, and epidemiology/public health of parasitic diseases.					
<b>Course Objective(s)</b>					
(1) Understanding pathogenic parasites of humans. (2) Understanding clinical and pathological and biophysical features of parasitic diseases. (3) Understanding the importance of parasitic diseases in Tropical Medicine and the possible applications for disease control in developing countries.					
<b>Lecture Style</b>					
For Lecture/Seminar, subjects are announced in advance, and students who will attend should have contact with Instructor. For Practice/Experiment, discussion with Instructors should be done in advance, and research protocol should be prepared.					
<b>Course Outline</b>					
Goals/outline: Infectious diseases are most urgent health problem in the 21st Century on the background situations of recent rapid increases in tourism and trading, ecological changes, and/or social infrastructural development. Appearance of drug-resistant pathogens and liable human hosts to infectious diseases are additional important matters. Parasitic infections have unique features in infectious diseases because of the big impact of social culture and human behavior, and those factors make the disease control difficult. In the lecture, the unique host-parasite interactions will be introduced from the view points of in vitro and in vivo analyses, and ecology of parasites, molecular biology, immune responses of the infected hosts and others are also included in the lecture course. All lectures will be done in English.					
<b>Grading System</b>					
Performance at Lecture, Practice and Lab, and the quantity and quality of publications and/or presentations at scientific meetings are evaluated. Research planning, technics, and outputs are considered.					
<b>Prerequisite Reading</b>					
For Journal club, it is needed to read and search reference papers and to summarize the contents of those papers in advance. For Laboratory research, Planning, Methodology, and Results & Discussion should be well described.					
<b>Reference Materials</b>					
No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b>					
It should be noted that pathogenic materials are used in this course. Therefore, each research plan should be approved in advance at committees for ethical/animal experimentation, and/or Biosafety.					
<b>Note(s) to Students</b>					
Nothing particular.					

<b>Lecture No</b>	041160				
<b>Subject title</b>	Practice of Environmental Parasitology	<b>Subject ID</b>			
<b>Instructors</b>	IWANAGA Shirou, KUMAGAI TAKASHI, SHINNZAWA Naoaki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Conference room and Laboratory of Environmental Parasitology (16th Floor, M & D Tower)					
<b>Course Purpose and Outline</b>					
Parasitic infections are instructed from the view points of global health, biomedical importance, and public health. For these purposes, contents of the lectures include biological aspects of pathogenic parasites, clinicopathological characteristics of parasite infections, and epidemiology/public health of parasitic diseases.					
<b>Course Objective(s)</b>					
(1) Understanding pathogenic parasites of humans. (2) Understanding clinical and pathological and biophysical features of parasitic diseases. (3) Understanding the importance of parasitic diseases in Tropical Medicine and the possible applications for disease control in developing countries.					
<b>Lecture Style</b>					
For Lecture/Seminar, subjects are announced in advance, and students who will attend should have contact with Instructor. For Practice/Experiment, discussion with Instructors should be done in advance, and research protocol should be prepared.					
<b>Course Outline</b>					
Goals/Outline: Diagnosis, pathogenesis and prognosis are covered by the use of clinical materials. Approaches are morphology, pathology, molecular biology and others. Philological practice is also covered. All practices will be done in English.					
<b>Grading System</b>					
Performance at Lecture, Practice and Lab, and the quantity and quality of publications and/or presentations at scientific meetings are evaluated. Research planning, technics, and outputs are considered.					
<b>Prerequisite Reading</b>					
For Journal club, it is needed to read and search reference papers and to summarize the contents of those papers in advance. For Laboratory research, Planning, Methodology, and Results & Discussion should be well described.					
<b>Reference Materials</b>					
No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b>					
It should be noted that pathogenic materials are used in this course. Therefore, each research plan should be approved in advance at committees for ethical/animal experimentation, and/or Biosafety.					
<b>Note(s) to Students</b>					
Nothing particular.					

<b>Lecture No</b>	041161				
<b>Subject title</b>	Laboratory practice of Environmental Parasitology			<b>Subject ID</b>	
<b>Instructors</b>	IWANAGA Shirou, KUMAGAI TAKASHI, SHINNZAWA Naoaki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Conference room and Laboratory of Environmental Parasitology (16th Floor, M & D Tower)					
<b>Course Purpose and Outline</b>					
Parasitic infections are instructed from the view points of global health, biomedical importance, and public health. For these purposes, contents of the lectures include biological aspects of pathogenic parasites, clinicopathological characteristics of parasite infections, and epidemiology/public health of parasitic diseases.					
<b>Course Objective(s)</b>					
(1) Understanding pathogenic parasites of humans. (2) Understanding clinical and pathological and biophysical features of parasitic diseases. (3) Understanding the importance of parasitic diseases in Tropical Medicine and the possible applications for disease control in developing countries.					
<b>Lecture Style</b>					
For Lecture/Seminar, subjects are announced in advance, and students who will attend should have contact with Instructor. For Practice/Experiment, discussion with Instructors should be done in advance, and research protocol should be prepared.					
<b>Course Outline</b>					
Goals/Outline: To understand host-parasite interactions, experimental pathological/immunological analyses of parasitic infections.					
<b>Grading System</b>					
Performance at Lecture, Practice and Lab, and the quantity and quality of publications and/or presentations at scientific meetings are evaluated. Research planning, techniques, and outputs are considered.					
<b>Prerequisite Reading</b>					
For Journal club, it is needed to read and search reference papers and to summarize the contents of those papers in advance. For Laboratory research, Planning, Methodology, and Results & Discussion should be well described.					
<b>Reference Materials</b>					
No particular books are designated. Papers and references are guided for each research subject.					
<b>Important Course Requirements</b>					
It should be noted that pathogenic materials are used in this course. Therefore, each research plan should be approved in advance at committees for ethical/animal experimentation, and/or Biosafety.					
<b>Note(s) to Students</b>					
Nothing particular.					

<b>Lecture No</b>	041162				
<b>Subject title</b>	Lecture of Forensic Medicine	<b>Subject ID</b>			
<b>Instructors</b>	UEMURA KOICHI, AKI TOSHIHIKO, UNUMA KANA, FUNAKOSHI TAKESHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Make sure of the venue to the instructor before lecture in each program.					
<b>Course Purpose and Outline</b>					
Understanding of the system for the calrification of cause of death, forensic autopsy, diagnosis of cazuse of dearh, sudden dearh and death from poisoning.					
<b>Course Objective(s)</b>					
To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.					
<b>Lecture Style</b>					
A small number of people					
<b>Course Outline</b>					
Goals/outline: The cases with forensic autopsies, especially judicial autopsies are presented. Students give a decision of the cause of death including murder cases, suicide cases and accidental cases and the intrinsic sudden death, composing of a large majority of unnatural death. Students are also taught the form and contents of a written statement of expert opinion. Sometimes proper cases of forensic autpsy are allowed to observe.					
<b>Grading System</b>					
Participation and struggling in lecture, practice and examination are taken into evaluation.					
<b>Prerequisite Reading</b>					
Undrstanding of basic forensic medicin and, terms					
<b>Reference Materials</b>					
Knight's forensic pathology / Pekka Saukko, Bernard Knight, Saukko, Pekka J, Knight, Bernard, : CRC Press, 2016 事例に学ぶ法医学・医事法 第3版 / 吉田謙一 著, ヨシダケンイチ, : 有斐閣, 2010-09-30 標準法医学 第7版 / 石津日出雄, 高津光洋 監, 池田典昭 他編, イシヅヒデオ, タカツキヒロイケダノリアキ, : 医学書院, 2013-01-01					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
Nothing					
<b>Email</b>					
UEMURA KOICHI:kuemura.legm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
UEMURA KOICHI:The office hours does not be determined in particular, but you are expected after contacting in advance.					

<b>Lecture No</b>	041163				
<b>Subject title</b>	Practice of Forensic Medicine	<b>Subject ID</b>			
<b>Instructors</b>	UEMURA KOICHI, AKI TOSHIHIKO, UNUMA KANA, FUNAKOSHI TAKESHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Make sure of the venue to the instructor before lecture in each program.					
<b>Course Purpose and Outline</b>					
Understanding of the system for the calrification of cause of death, forensic autopsy, diagnosis of cazuse of dearh, sudden dearh and death from poisoning.					
<b>Course Objective(s)</b>					
To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.					
<b>Lecture Style</b>					
A small number of people					
<b>Course Outline</b>					
Goals/Outline: In forensic medicine, medical ethics and civil proceedings that includes medical malpractice, brain death and medical compensation, are taught. Furthermore, Students study about the criminology and situation of the injured or victim through autopsy assistance, making autopsy repot and examinations related to forensic autopsy.					
<b>Grading System</b>					
Participation and struggling in lecture, practice and examination are taken into evaluation.					
<b>Prerequisite Reading</b>					
Undrstanding of basic forensic medicin and, terms					
<b>Reference Materials</b>					
事例に学ぶ法医学・医事法 第3版／吉田謙一 著ヨシダケンイチ.:有斐閣, 2010-09-30 標準法医学 第7版／石津日出雄,高津光洋 監,池田典昭 他編,イヅツヒデオ,タカツアキヒロ,イケダノアキ.:医学書院, 2013-01-01 Knight's forensic pathology／Pekka Saukko, Bernard Knight,Saukko, Pekka J.Knight, Bernard.: CRC Press, 2016					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
Nothing					
<b>Email</b>					
UEMURA KOICHI:kuemura.legm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
UEMURA KOICHI:The office hours does not be determined in particular, but you are expected after contacting in advance.					

<b>Lecture No</b>	041164				
<b>Subject title</b>	Laboratory practice of Forensic Medicine			<b>Subject ID</b>	
<b>Instructors</b>	UEMURA KOICHI, AKI TOSHIHIKO, UNUMA KANA, FUNAKOSHI TAKESHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Make sure of the venue to the instructor before lecture in each program.					
<b>Course Purpose and Outline</b>					
Understanding of the system for the clarification of cause of death, forensic autopsy, diagnosis of cause of death, sudden death and death from poisoning.					
<b>Course Objective(s)</b>					
To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.					
<b>Lecture Style</b>					
A small number of people. Sometimes field work at autopsy.					
<b>Course Outline</b>					
Goals/Outline: Mechanism of toxic effects was examined using cultured cells and experimental animals. In accordance with the novel abused drugs by the changes of society and environment, the methods of detection and identification for toxic substances are tried and developed cooperating with clinical medicine.					
<b>Grading System</b>					
Participation and struggling in lecture, practice and examination are taken into evaluation.					
<b>Prerequisite Reading</b>					
Understanding of basic forensic medicine and, terms					
<b>TextBook</b>					
Knight's forensic pathology / Pekka Saukko, Bernard Knight, Saukko, Pekka J, Knight, Bernard, : CRC Press, 2016 標準法医学 第7版 / 石津日出雄, 高津光洋 監, 池田典昭 他編, イツビデオ, タカツアキヒロ, イケダノアキ, : 医学書院, 2013-01-01 事例に学ぶ法医学・医事法 第3版 / 吉田謙一 著, ヨシダケンイチ, : 有斐閣, 2010-09-30					
<b>Reference Materials</b>					
Forensic medicine, medical law based on forensic autopsy cases. Yuhikaku Boks, Ken-ichi Yoshida (2010/9/25) Standard Textbook Series Forensic Medicine, Igaku-Shoin, Hideo Ishidu, Mituhiro Takatsu (2013/1/1)					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
Nothing					
<b>Email</b>					
UEMURA KOICHI:kuemura.legm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
UEMURA KOICHI: The office hours does not be determined in particular, but you are expected after contacting in advance.					



<b>Lecture No</b>	041165				
<b>Subject title</b>	Lecture of Health Care Management and Planning	<b>Subject ID</b>			
<b>Instructors</b>	KAWAHARA KAZUO, SUGAWA MAKIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.					
<b>Course Purpose and Outline</b>					
To understand the problems faced by public health and welfare, and to understand the determining factors of policies for improvements together with their validity and fitness for purpose.					
<b>Course Objective(s)</b>					
Students are expected to learn how to analyze health and welfare policies adopted domestically and overseas using objective indicators as well as the ability to theoretically and systematically discuss what they think would be the optimal solution.					
<b>Lecture Style</b>					
To introduce the domestic and foreign documents and papers about the latest health and welfare policies. And to analyze, discuss and evaluate these contents.					
<b>Course Outline</b>					
Goals/outline: By analyzing the Japanese healthcare policies and system and by reviewing their interaction with society, the structural characteristics and issues can be clarified. To resolve or find better ways to handle these issues, we conduct research into public health and welfare, and its related disciplinary areas. With the cooperation of active policy makers and personnel from the healthcare departments, the research results can be applied to the present healthcare policies and system. Through this education on collecting data, clarifying issues, analyzing the situation, and evaluating options, students taking this course are expected to grow in their ability to make healthcare policies.					
<b>Grading System</b>					
PhD candidates are evaluated by the aggressiveness to the research subjects and the participation to the lecture and practice. In addition to this, the presentation number of times in the academic meetings.					
<b>Prerequisite Reading</b>					
The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.					
<b>Reference Materials</b>					
① "Medical Care in Japan", Naoki Ikegami and J. C. Campbell (Chuokoron-Shinsha, Inc.)					
② White papers from the Japanese Ministry of Health, Labour and Welfare					
③ "National Health Trends 2014/2015" (Health, Labour and Welfare Statistics Association)					
④ "Ministry of Health and Welfare: 50-year history"					
⑤ "50 Years of Postwar Medical Care", Jiro Arioka (Japan Medical Journal)					
⑥ "Public Policy Studies", Edited by Yukio Adachi and Toshimasa Moriwaki (Minerva Shobo)					
⑦ "A Primer for Policy Analysis", Edith Stokey and Richard Zeckhauser (Keiso Shobo)					
<b>Important Course Requirements</b>					
None in particular					
<b>Note(s) to Students</b> Not particular					
<b>Email</b>					
KAWAHARA KAZUO:Kazuo Kawahara, Department of Health Care Management and Planning; E-mail: kk.hcm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KAWAHARA KAZUO:17:00-21:00 Wednesday M&dD Tower 16Floor, Student Room					

<b>Lecture No</b>	041166				
<b>Subject title</b>	Practice of Health Care Management and Planning	<b>Subject ID</b>			
<b>Instructors</b>	KAWAHARA KAZUO, SUGAWA MAKIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.					
<b>Course Purpose and Outline</b>					
To understand the problems faced by public health and welfare, and to understand the determining factors of policies for improvements together with their validity and fitness for purpose.					
<b>Course Objective(s)</b>					
Students are expected to learn how to analyze health and welfare policies adopted domestically and overseas using objective indicators as well as the ability to theoretically and systematically discuss what they think would be the optimal solution.					
<b>Lecture Style</b>					
To introduce the domestic and foreign documents and papers about the latest health and welfare policies. And to analyze, discuss and evaluate these contents.					
<b>Course Outline</b>					
Goals/Outline: We analyze and discuss the health and welfare policies proposed by the government based on the health statistic data and socio-economic indicators. The goals and objectives of us are to acquire the planning and evaluation skills etc. through these process.					
<b>Grading System</b>					
PhD candidates are evaluated by the aggressiveness to the research subjects and the participation to the lecture and practice. In addition to this, the presentation number of times in the academic meetings.					
<b>Prerequisite Reading</b>					
The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.					
<b>Reference Materials</b>					
① "Medical Care in Japan", Naoki Ikegami and J. C. Campbell (Chuokoron-Shinsha, Inc.)					
② White papers from the Japanese Ministry of Health, Labour and Welfare					
③ "National Health Trends 2014/2015" (Health, Labour and Welfare Statistics Association)					
④ "Ministry of Health and Welfare: 50-year history"					
⑤ "50 Years of Postwar Medical Care", Jiro Arioka (Japan Medical Journal)					
⑥ "Public Policy Studies", Edited by Yukio Adachi and Toshimasa Moriwaki (Minerva Shobo)					
⑦ "A Primer for Policy Analysis", Edith Stokey and Richard Zeckhauser (Keiso Shobo)					
<b>Important Course Requirements</b>					
None in particular					
<b>Note(s) to Students</b>					
Not particular					
<b>Email</b>					
KAWAHARA KAZUO:Kazuo Kawahara, Department of Health Care Management and Planning; E-mail: kk.hcm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
KAWAHARA KAZUO:17:00–21:00 Wednesday M&dD Tower 16Floor, Student Room					

<b>Lecture No</b>	041167				
<b>Subject title</b>	Laboratory practice of Health Care Management and Planning	<b>Subject ID</b>			
<b>Instructors</b>	KAWAHARA KAZUO, SUGAWA MAKIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.					
<b>Course Purpose and Outline</b>					
To understand the problems faced by public health and welfare, and to understand the determining factors of policies for improvements together with their validity and fitness for purpose.					
<b>Course Objective(s)</b>					
Students are expected to learn how to analyze health and welfare policies adopted domestically and overseas using objective indicators as well as the ability to theoretically and systematically discuss what they think would be the optimal solution.					
<b>Lecture Style</b>					
To introduce the domestic and foreign documents and papers about the latest health and welfare policies. And to analyze, discuss and evaluate these contents.					
<b>Course Outline</b>					
Goals/Outline: To discuss the problems in studies which handling by each student can appear us the best way to carry out the studies. The students present the contents of their studies in terms and focusing the problems in their studies. These processes shows the students for the best way to develop their studies.					
<b>Grading System</b>					
PhD candidates are evaluated by the aggressiveness to the research subjects and the participation to the lecture and practice. In addition to this, the presentation number of times in the academic meetings.					
<b>Prerequisite Reading</b>					
The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.					
<b>Reference Materials</b>					
① “Medical Care in Japan”, Naoki Ikegami and J. C. Campbell (Chuokoron–Shinsha, Inc.)					
② White papers from the Japanese Ministry of Health, Labour and Welfare					
③ “National Health Trends 2014/2015” (Health, Labour and Welfare Statistics Association)					
④ “Ministry of Health and Welfare: 50–year history”					
⑤ “50 Years of Postwar Medical Care”, Jiro Arioka (Japan Medical Journal)					
⑥ “Public Policy Studies”, Edited by Yukio Adachi and Toshimasa Moriwaki (Minerva Shobo)					
⑦ “A Primer for Policy Analysis”, Edith Stokey and Richard Zeckhauser (Keiso Shobo)					
<b>Important Course Requirements</b>					
None in particular					
<b>Note(s) to Students</b>					
Not particular					
<b>Email</b>					
KAWAHARA KAZUO:Kazuo Kawahara, Department of Health Care Management and Planning; E–mail: kk.hcm@tmd.ac.jp					
<b>Instructor’s Contact Information</b>					
KAWAHARA KAZUO:17:00–21:00 Wednesday M&dD Tower 16Floor, Student Room					

<b>Lecture No</b>	041168				
<b>Subject title</b>	Lecture of Molecular Epidemiology	<b>Subject ID</b>			
<b>Instructors</b>	MURAMATSU MASA AKI, SATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Conference room of Molecular Epidemiology at 24th Floor of M&D tower					
<b>Course Purpose and Outline</b>					
Learn how human genome research is applied to basic and clinical medicine.					
<b>Course Objective(s)</b>					
To understand how human genome information is related to human diseases.					
<b>Lecture Style</b>					
Lectures will be done in a small group (up to 10 person). Practice and lab will be taught in a one-on-one manner.					
<b>Course Outline</b>					
Goals/outline: To understand genetic and environmental risk factors of common metabolic diseases such as hypertension, diabetes, metabolic syndrome, and atherosclerosis by employing human genomic approach to epidemiology. Gene-environment interaction and epigenetic changes, such as developmental origins of health and disease (DOHaD) that underlie these diseases will also be studied.					
<b>Grading System</b>					
Grading will be done by the attendance and the presentation at the lab meeting, and by the content of the reporting.					
<b>Prerequisite Reading</b>					
Read the first chapter of "Human Genome Epidemiology M.Khoury et al (Oxford press) before attending the class.					
<b>Reference Materials</b>					
Human Genome Epidemiology M.Khoury et al. (Oxford Press) Personal Genomics and Personalized Medicine H.Bolouri (Imperial College Press)					
<b>Email</b>					
MURAMATSU MASA AKI:muramatsu.epi@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MURAMATSU MASA AKI:Every Thursday AM10:00-12:00 M&D Tower 24F Molecular Epidemiology					

<b>Lecture No</b>	041169				
<b>Subject title</b>	Practice of Molecular Epidemiology	<b>Subject ID</b>			
<b>Instructors</b>	MURAMATSU MASA AKI, SATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Conference room of Molecular Epidemiology at 24th Floor of M&D tower					
<b>Course Purpose and Outline</b>					
Learn how human genome research is applied to basic and clinical medicine.					
<b>Course Objective(s)</b>					
To understand how human genome information is related to human diseases.					
<b>Lecture Style</b>					
Lectures will be done in a small group (up to 10 person). Practice and lab will be taught in a one-on-one manner.					
<b>Course Outline</b>					
Goals/Outline: To learn methods for genomic and statistical analysis by relevant computer software using template and actual data-sets,					
<b>Grading System</b>					
Grading will be done by the attendance and the presentation at the lab meeting, and by the content of the reporting.					
<b>Prerequisite Reading</b>					
Read "Personal Genomics and Personalized Medicine H.Bolouri et al (Imperial College Press)" before the lectures					
<b>Reference Materials</b>					
Human Genome Epidemiology M.Khoury et al. (Oxford Press) Personal Genomics and Personalized Medicine H.Bolouri (Imperial College Press)					
<b>Important Course Requirements</b>					
None					
<b>Email</b>					
MURAMATSU MASA AKI:muramatsu.epi@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MURAMATSU MASA AKI:Every Thursday AM10:00–12:00 M&D Tower 24F Molecular Epidemiology					

<b>Lecture No</b>	041170				
<b>Subject title</b>	Laboratory practice of Molecular Epidemiology	<b>Subject ID</b>			
<b>Instructors</b>	MURAMATSU MASA AKI, SATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Laboratory room of Molecular Epidemiology at 24th Floor of M&D tower					
<b>Course Purpose and Outline</b>					
Conduct project research under the guidance of supervisor					
<b>Course Objective(s)</b>					
Conduct individual research project and write an original paper					
<b>Lecture Style</b>					
Lab practice and will be taught in a one-on-one manner.					
<b>Course Outline</b>					
Goals/Outline:					
To learn how to genotype variations such as SNPs and repeat polymorphisms in the human genome.					
To learn how to analyze epigenetic changes, such as DNA methylation and histone modification.					
<b>Grading System</b>					
Grading will be done by the research reports, presentation at meetings, and by the content of the original paper.					
<b>Prerequisite Reading</b>					
Survey papers relevant to the research project					
<b>Email</b>					
MURAMATSU MASA AKI:muramatsu.epi@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MURAMATSU MASA AKI:Every Thursday AM10:00–12:00 M&D Tower 24F Molecular Epidemiology					

<b>Lecture No</b>	041171				
<b>Subject title</b>	Lecture of Research Development			<b>Subject ID</b>	
<b>Instructors</b>	TAKASE KOZO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>	Research Office, Department of Research Development, M&D Tower 16F				
<b>Course Purpose and Outline</b>	Study on development of medical system and hospital management				
<b>Course Objective(s)</b>	Obtaining capability of research and development on medical management				
<b>Lecture Style</b>	small class or seminar				
<b>Course Outline</b>	Goals/outline: The goals supposed in the lecture are mastering the technique of implementation of research development and acquiring the ability of management of projects.				
<b>Grading System</b>	evaluated from the point of view of discussion in the class and reports				
<b>Prerequisite Reading</b>	preparation for curriculum contents of MMA course				
<b>Reference Materials</b>	informed in class				
<b>Important Course Requirements</b>	nothing particular				
<b>Note(s) to Students</b>	Candidates are supposed to be completed "Master of Medical Administration" course, Tokyo Medical and Dental University.				
<b>Email</b>	ktakase.rdev@tmd.ac.jp				

<b>Lecture No</b>	041172				
<b>Subject title</b>	Practice of Research Development	<b>Subject ID</b>			
<b>Instructors</b>	TAKASE KOZO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Research Office, Department of Research Development, M&D Tower 16F					
<b>Course Purpose and Outline</b> Study on development of medical system and hospital management					
<b>Course Objective(s)</b> Obtaining capability of research and development on medical management					
<b>Lecture Style</b> small class or seminar					
<b>Course Outline</b> Goals/Outline: The aim in the practical program is developing the performance of implementation and management of projects.					
<b>Grading System</b> evaluated from the point of view of discussion in the class and reports					
<b>Prerequisite Reading</b> preparation for curriculum contents of MMA course					
<b>Reference Materials</b> informed in class					
<b>Important Course Requirements</b> nothing particular					
<b>Note(s) to Students</b> Candidates are supposed to be completed “Master of Medical Administration” course, Tokyo Medical and Dental University.					
<b>Email</b> ktakase.rdev@tmd.ac.jp					



<b>Lecture No</b>	041173				
<b>Subject title</b>	Laboratory practice of Research Development			<b>Subject ID</b>	
<b>Instructors</b>	TAKASE KOZO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Research Office, Department of Research Development, M&D Tower 16F					
<b>Course Purpose and Outline</b> Study on development of medical system and hospital management					
<b>Course Objective(s)</b> Obtaining capability of research and development on medical management					
<b>Lecture Style</b> small class or seminar					
<b>Grading System</b> evaluated from the point of view of discussion in the class and reports					
<b>Prerequisite Reading</b> preparation for curriculum contents of MMA course					
<b>Reference Materials</b> informed in class					
<b>Important Course Requirements</b> nothing particular					
<b>Note(s) to Students</b> Candidates are supposed to be completed “Master of Medical Administration” course, Tokyo Medical and Dental University.					
<b>Email</b> ktakase.rdev@tmd.ac.jp					

<b>Lecture No</b>	041174				
<b>Subject title</b>	Lecture of Health Policy and Informatics	<b>Subject ID</b>			
<b>Instructors</b>	FUSHIMI KIYOHIDE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Research unit of Health Care Informatics Section					
<b>Course Purpose and Outline</b>					
To obtain the theory, applications and practical knowledge for handling medical information and database management.					
<b>Course Objective(s)</b>					
To understand methodology for analysing case-mix health data and administrative data					
<b>Lecture Style</b>					
lecture and small group discussion					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled. Methodology and application of data handling, data analysis, database management for health data and administrative data from hospitals and the government will be lectured. In addition, basics and application of patient case-mix system and DPC system will be lectured.					
<b>Grading System</b>					
reports, conference presentation, etc.					
<b>Prerequisite Reading</b>					
Health system of Japan					
<b>TextBook</b>					
診療情報による医療評価：DPC データから見る医療の質／松田晋哉, 伏見清秀 編松田, 晋哉, 1960-伏見, 清秀, 1960-.; 東京大学出版会, 2012					

<b>Lecture No</b>	041175				
<b>Subject title</b>	Practice of Health Policy and Informatics	<b>Subject ID</b>			
<b>Instructors</b>	FUSHIMI KIYOHIDE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Research unit of Health Care Informatics Section					
<b>Course Purpose and Outline</b>					
To obtain the theory, applications and practical knowledge for handling medical information and database management.					
<b>Course Objective(s)</b>					
To understand methodology for analysing case-mix health data and administrative data					
<b>Lecture Style</b>					
lecture and small group discussion					
<b>Course Outline</b>					
Practices of data analysis for large-scale health care data bases will be available					
<b>Grading System</b>					
reports, conference presentation, etc.					
<b>Prerequisite Reading</b>					
Health system of Japan					
<b>TextBook</b>					
診療情報による医療評価：DPC データから見る医療の質／松田晋哉, 伏見清秀 編松田, 晋哉, 1960-,伏見, 清秀, 1960-,:東京大学出版会, 2012					

<b>Lecture No</b>	041176				
<b>Subject title</b>	Laboratory practice of Health Policy and Informatics	<b>Subject ID</b>			
<b>Instructors</b>	FUSHIMI KIYOHIDE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b>					
Research unit of Health Care Informatics Section					
<b>Course Purpose and Outline</b>					
To obtain the theory, applications and practical knowledge for handling medical information and database management.					
<b>Course Objective(s)</b>					
To understand methodology for analysing case-mix health data and administrative data					
<b>Lecture Style</b>					
lecture and small group discussion					
<b>Course Outline</b>					
Data analysis using SQL and OPAP database					
<b>Grading System</b>					
reports, conference presentation, etc.					
<b>Prerequisite Reading</b>					
Health system of Japan					
<b>TextBook</b>					
診療情報による医療評価：DPC データから見る医療の質／松田晋哉, 伏見清秀 編松田, 晋哉, 1960-,伏見, 清秀, 1960-,:東京大学出版会, 2012					

<b>Lecture No</b>	041177				
<b>Subject title</b>	Lecture of Life Sciences and Bioethics	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIDA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>					
Schedule of Lectures and seminars will be announced accordingly					
<b>Course Purpose and Outline</b>					
In order to contribute rapid technological advances in medicine and biology in a useful form to society, it is necessary to acquire solid bioethical knowledge that can be applied internationally. We aim to make a qualified judgment based on bioethics in advanced medical research and its practice. We learn about the indispensable research ethics for all fields and practical training on specific research ethical reviews.					
<b>Course Objective(s)</b>					
Learn how to prepare, submit, and discuss the protocol of clinical studies for IRB and REC					
<b>Lecture Style</b>					
Our course will be consisted from no more than 5-6 students. It is highly recommended to actively participate in the debate and discussion.					
<b>Course Outline</b>					
Goals/outline: To learn the importance of ethical consideration based on specific study of three distinct area of the field; Medical Ethics, Research Ethics, and Bioethics.					
<b>Grading System</b>					
Grading will be considered based on the participation of discussion and practical training and its outcome to Lectures, Practices, and Lab works (80%). We also comprehensively evaluate based on the content of research, the involvement in various research and research conferences (20%).					
<b>Prerequisite Reading</b>					
In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Reference Materials</b>					
In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Important Course Requirements</b>					
Bioethics and CITI class on April 27 (FRI) are mandatory					
<b>Note(s) to Students</b>					
Not in particular.					

<b>Lecture No</b>	041178				
<b>Subject title</b>	Practice of Life Sciences and Bioethics	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIDA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>					
Schedule of Lectures and seminars will be announced accordingly					
<b>Course Purpose and Outline</b>					
In order to contribute rapid technological advances in medicine and biology in a useful form to society, it is necessary to acquire solid bioethical knowledge that can be applied internationally. We aim to make a qualified judgment based on bioethics in advanced medical research and its practice. We learn about the indispensable research ethics for all fields and practical training on specific research ethical reviews.					
<b>Course Objective(s)</b>					
Learn how to prepare, submit, and discuss the protocol of clinical studies for IRB and REC					
<b>Lecture Style</b>					
Our course will be consisted from no more than 5–6 students. It is highly recommended to actively participate in the debate and discussion.					
<b>Course Outline</b>					
Goals/Outline: To plan a research project with careful survey of background and previous observation. It is also important to learn a statistics required for medical research.					
<b>Grading System</b>					
Grading will be considered based on the participation of discussion and practical training and its outcome to Lectures, Practices, and Lab works (80%). We also comprehensively evaluate based on the content of research, the involvement in various research and research conferences (20%).					
<b>Prerequisite Reading</b>					
In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Reference Materials</b>					
In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Important Course Requirements</b>					
Bioethics and CITI class on April 27 (FRI) are mandatory					
<b>Note(s) to Students</b>					
Not in particular.					

<b>Lecture No</b>	041179				
<b>Subject title</b>	Laboratory practice of Life Sciences and Bioethics	<b>Subject ID</b>			
<b>Instructors</b>	YOSHIDA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b> Schedule of Lectures and seminars will be announced accordingly					
<b>Course Purpose and Outline</b> In order to contribute rapid technological advances in medicine and biology in a useful form to society, it is necessary to acquire solid bioethical knowledge that can be applied internationally. We aim to make a qualified judgment based on bioethics in advanced medical research and its practice. We learn about the indispensable research ethics for all fields and practical training on specific research ethical reviews.					
<b>Course Objective(s)</b> Learn how to prepare, submit, and discuss the protocol of clinical studies for IRB and REC					
<b>Lecture Style</b> Our course will be consisted from no more than 5–6 students. It is highly recommended to actively participate in the debate and discussion.					
<b>Course Outline</b> Goals/Outline: It is necessary to directly conduct such a medical study with either basic or clinical research theme.					
<b>Grading System</b> Grading will be considered based on the participation of discussion and practical training and its outcome to Lectures, Practices, and Lab works (80%). We also comprehensively evaluate based on the content of research, the involvement in various research and research conferences (20%).					
<b>Prerequisite Reading</b> In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Reference Materials</b> In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.					
<b>Important Course Requirements</b> Bioethics and CITI class on April 27 (FRI) are mandatory					
<b>Note(s) to Students</b> Not in particular.					

<b>Lecture No</b>	041180				
<b>Subject title</b>	Lecture of Forensic Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	SAKURADA KOICHI, UTSUNO HAJIME, ISHII Namiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Forensic Dentistry Office (M&D Tower 8F)					
<b>Course Purpose and Outline</b>					
The purpose of the course is to understand academic field of forensic dentistry and its connection with social life. In particular, by the establishment of two laws for cause of death investigation, in recent years the identification work by the dentist is regarded as important at a crime and a big disaster. Students learn those significant through case reports.					
<b>Course Objective(s)</b>					
By taking this course, students will;					
1) learn the history of the forensic dentistry and be able to understand the social significance.					
2) understand an academic field of the forensic dentistry and be able to draw up its research theme.					
3) understand why dental findings are effective for personal identification, and can explain the connection with the other methods such as DNA typing.					
<b>Lecture Style</b>					
This course is small-group format. Students learn through a lecture and a case report.					
<b>Course Outline</b>					
This is a course for learning about various personal identification methods in the forensic dentistry, including intraoral findings, the morphological characteristics of bones, face image analysis, DNA typing, and so on.					
<b>Grading System</b>					
Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.					
<b>Prerequisite Reading</b>					
Since an instructor gives you some instructions as necessary, please contact to him beforehand.					
<b>Reference Materials</b>					
Forensic Dental Science (1st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hiroshi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)					
<b>Important Course Requirements</b>					
Please note a leak of the personal information such as photographs to treat with a lecture document.					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
SAKURADA KOICHI:sakurada.fde@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SAKURADA KOICHI:Thursday 15:00-17:00 MD Tower 8F Forensic Dentistry Office					



<b>Lecture No</b>	041181				
<b>Subject title</b>	Practice of Forensic Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	SAKURADA KOICHI, UTSUNO HAJIME, ISHII Namiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Lecture place</b> Forensic Dentistry Office (M&D Tower 8F)					
<b>Course Purpose and Outline</b> The purpose of this class is to understand the usefulness of personal identification by dental findings through dental charting using case samples.					
<b>Course Objective(s)</b> By taking this course, students will be able to; 1) make a postmortem dental chart. 2) make a antemortem dental chart. 3) match the postmortem dental chart with the antemortem one.					
<b>Lecture Style</b> This course is small-group format. Students learn through a lecture and a case report.					
<b>Course Outline</b> This is a practical course for individual identification based on dental findings, including dental charting.					
<b>Grading System</b> Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.					
<b>Prerequisite Reading</b> Since an instructor gives you some instructions as necessary, please contact to him beforehand.					
<b>Reference Materials</b> Forensic Dental Science (1st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hiroshi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)					
<b>Important Course Requirements</b> Please note a leak of the personal information such as photographs to treat with a lecture document.					
<b>Note(s) to Students</b> None					
<b>Email</b> SAKURADA KOICHI:sakurada.fde@tmd.ac.jp					
<b>Instructor's Contact Information</b> SAKURADA KOICHI:Thursday 15:00-17:00 MD Tower 8F Forensic Dentistry Office					

<b>Lecture No</b>	041182				
<b>Subject title</b>	Laboratory practice of Forensic Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	SAKURADA KOICHI, UTSUNO HAJIME, ISHII Namiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Forensic Dentistry Lab. (M&D Tower 8F)					
<b>Course Purpose and Outline</b> Students will develop the ability to plan their own research project through a given research theme related to personal identification.					
<b>Course Objective(s)</b> Students will be able to complete a given research theme, and get the ability to draw up their own research theme.					
<b>Lecture Style</b> This course is small-group format. Students learn through experiments.					
<b>Course Outline</b> None this year.					
<b>Grading System</b> Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.					
<b>Prerequisite Reading</b> Since an instructor gives you some instructions as necessary, please contact to him beforehand.					
<b>Reference Materials</b> Forensic Dental Science (1st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hiroshi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)					
<b>Important Course Requirements</b> Please note a leak of the personal information such as photographs to treat with a lecture document.					
<b>Note(s) to Students</b> None					
<b>Email</b> SAKURADA KOICHI:sakurada.fde@tmd.ac.jp					
<b>Instructor's Contact Information</b> SAKURADA KOICHI:Thursday 15:00–17:00 MD Tower 8F Forensic Dentistry Office					

<b>Lecture No</b>	041183				
<b>Subject title</b>	Lecture of Health Care Economics	<b>Subject ID</b>			
<b>Instructors</b>	KAWABUCHI KOICHI, IGARASHI ISAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Office of Health Care Economics					
<b>Course Purpose and Outline</b> Core local hospitals in communities takes on the responsibility of supporting front-line healthcare in the nation. Faced with recent changes in healthcare and long-term care, they long for personnel competent in healthcare management. Call for such personnel is strong among research organizations and public offices as well, looking for those who are proficient in qualitative and quantitative analysis. Therefore, this course aims to train students to be capable in making immediate contribution to the healthcare and welfare field, and to educate future "academic doctors" who can voice their messages in policy making.					
<b>Course Objective(s)</b> To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE					
<b>Lecture Style</b> Study of the following through lectures and research on specific case <ul style="list-style-type: none"> <li>• Research plan (Framework, Literature review, Strategies)</li> <li>• Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)</li> <li>• Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)</li> <li>• Logistic thinking</li> <li>• Others</li> </ul>					
<b>Course Outline</b> Understanding the methods of research on phenomena in health care field through economics point of view The lecture will be centered around such topics as the approach to a research theme in economics and other social sciences (especially empirical studies), how to proceed with the research, and paper writing					
<b>Grading System</b> Will be based on overall achievement including attendance and contributions in lectures and other occasions. Research quality, and the degree of participation in outside opportunities such as presentation at academic conferences will also be reflected in grades					
<b>Prerequisite Reading</b> Koichi Kawabuchi "Mieruka" Iryokeizaigaku Nyumon" ("Introduction to 'Visualized' Healthcare Economics", in Japanese only), Ishiyaku Publishers Inc. Participation in special lectures featured by our office as well as to courses in Basic-Clinical Borderless Education is recommended					
<b>Reference Materials</b> <ul style="list-style-type: none"> <li>• S. B. Merriam and E. L. Simpson "A Guide to Research for Educators and Trainers of Adults" 2nd ed. (Updated), Krieger Publishing, 2000. (Translation in Japanese also available)</li> <li>• J.W. Creswell "Research design: Qualitative, quantitative, and mixed method approaches" 2nd ed., Sage, 2003. (Translation in Japanese also available)</li> <li>• Tuyoshi Kawasaki "Shakaikagaku kei notameno 'Yushuronbun' Sakuseijyutu Puronogakujyuturonbun kara Soturonmade" ("Techniques of Writing 'Excellent Papers' in Social Science from Professional Academic Papers to Graduation Thesis, in Japanese) Keiso Shobo Publishing Co., Ltd., 2010.</li> <li>• S. Folland, A.C. Goodman, M. Stano "The Economics of Health and Health Care" Prentice Hall.</li> <li>• J.M. Wooldridge "Introductory Econometrics; A Modern Approach" South-Western Pub.</li> </ul>					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.					

<b>Lecture No</b>	041184				
<b>Subject title</b>	Practice of Health Care Economics	<b>Subject ID</b>			
<b>Instructors</b>	KAWABUCHI KOICHI, IGARASHI ISAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Office of Health Care Economics					
<b>Course Purpose and Outline</b> Core local hospitals in communities takes on the responsibility of supporting front-line healthcare in the nation. Faced with recent changes in healthcare and long-term care, they long for personnel competent in healthcare management. Call for such personnel is strong among research organizations and public offices as well, looking for those who are proficient in qualitative and quantitative analysis. Therefore, this course aims to train students to be capable in making immediate contribution to the healthcare and welfare field, and to educate future “academic doctors” who can voice their messages in policy making.					
<b>Course Objective(s)</b> To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE					
<b>Lecture Style</b> Study of the following through lectures and research on specific case <ul style="list-style-type: none"> <li>• Research plan (Framework, Literature review, Strategies)</li> <li>• Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)</li> <li>• Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)</li> <li>• Logistic thinking</li> <li>• Others</li> </ul>					
<b>Course Outline</b> Designing and refining of each research plan through presentation and interactive discussion					
<b>Grading System</b> Will be based on overall achievement including attendance and contributions in lectures and other occasions. Research quality, and the degree of participation in outside opportunities such as presentation at academic conferences will also be reflected in grades					
<b>Prerequisite Reading</b> Koichi Kawabuchi “Mieruka’ Iryokeizaigaku Nyumon” (“Introduction to ‘Visualized’ Healthcare Economics”, in Japanese only), Ishiyaku Publishers Inc. Participation in special lectures featured by our office as well as to courses in Basic-Clinical Borderless Education is recommended					
<b>Reference Materials</b> <ul style="list-style-type: none"> <li>• S. B. Merriam and E. L. Simpson “A Guide to Research for Educators and Trainers of Adults” 2nd ed. (Updated), Krieger Publishing, 2000. (Translation in Japanese also available)</li> <li>• J.W. Creswell “Research design: Qualitative, quantitative, and mixed method approaches” 2nd ed., Sage, 2003. (Translation in Japanese also available)</li> <li>• Tuyoshi Kawasaki “Shakaikagaku kei notameno ‘Yushuronbun’ Sakuseijyutu Purogaku juyuturonbun kara Soturonmade” (“Techniques of Writing ‘Excellent Papers’ in Social Science from Professional Academic Papers to Graduation Thesis, in Japanese) Keiso Shobo Publishing Co., Ltd., 2010.</li> <li>• S. Folland, A.C. Goodman, M. Stano “The Economics of Health and Health Care” Prentice Hall.</li> <li>• J.M. Wooldridge “Introductory Econometrics; A Modern Approach” South-Western Pub.</li> </ul>					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.					

<b>Lecture No</b>	041185				
<b>Subject title</b>	Laboratory practice of Health Care Economics	<b>Subject ID</b>			
<b>Instructors</b>	KAWABUCHI KOICHI, IGARASHI ISAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	Office of Health Care Economics				
<b>Course Purpose and Outline</b>					
Core local hospitals in communities takes on the responsibility of supporting front-line healthcare in the nation. Faced with recent changes in healthcare and long-term care, they long for personnel competent in healthcare management. Call for such personnel is strong among research organizations and public offices as well, looking for those who are proficient in qualitative and quantitative analysis. Therefore, this course aims to train students to be capable in making immediate contribution to the healthcare and welfare field, and to educate future “academic doctors” who can voice their messages in policy making.					
<b>Course Objective(s)</b> To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE					
<b>Lecture Style</b>					
Study of the following through lectures and research on specific case					
<ul style="list-style-type: none"> <li>• Research plan (Framework, Literature review, Strategies)</li> <li>• Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)</li> <li>• Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)</li> <li>• Logistic thinking</li> <li>• Others</li> </ul>					
<b>Course Outline</b> Obtain health care economics points of view and master its research methods relevant to individual themes, and proceed to practice writing papers that will be accepted to academic journals					
<b>Grading System</b> Will be based on overall achievement including attendance and contributions in lectures and other occasions. Research quality, and the degree of participation in outside opportunities such as presentation at academic conferences will also be reflected in grades					
<b>Prerequisite Reading</b>					
Koichi Kawabuchi “Mieruka’ Iryokeizaigaku Nyumon” (“Introduction to ‘Visualized’ Healthcare Economics”, in Japanese only), Ishiyaku Publishers Inc. Participation in special lectures featured by our office as well as to courses in Basic-Clinical Borderless Education is recommended					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>• S. B. Merriam and E. L. Simpson “A Guide to Research for Educators and Trainers of Adults” 2nd ed. (Updated), Krieger Publishing, 2000. (Translation in Japanese also available)</li> <li>• J.W. Creswell “Research design: Qualitative, quantitative, and mixed method approaches” 2nd ed., Sage, 2003. (Translation in Japanese also available)</li> <li>• Tuyoshi Kawasaki “Shakaikagaku kei notameno ‘Yushuronbun’ Sakuseijiyutu Purogokujyuturonbun kara Soturonmade” (“Techniques of Writing ‘Excellent Papers’ in Social Science from Professional Academic Papers to Graduation Thesis, in Japanese) Keiso Shobo Publishing Co., Ltd., 2010.</li> <li>• S. Folland, A.C. Goodman, M. Stano “The Economics of Health and Health Care” Prentice Hall.</li> <li>• J.M. Wooldridge “Introductory Econometrics; A Modern Approach” South-Western Pub.</li> </ul>					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b>					
Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.					

<b>Lecture No</b>	041186				
<b>Subject title</b>	Lecture of Dental Education Development	<b>Subject ID</b>			
<b>Instructors</b>	MORIO IKUKO, SEKI NAOKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b> Seminar Room of Dental Education Development (M&D Tower 7F south-side, S-757)					
<b>Course Purpose and Outline</b> To help students understand the research basics concerning education in healthcare professions.					
<b>Course Objective(s)</b> The students will understand and acquire basic elements necessary to conduct research in healthcare professional education.					
<b>Lecture Style</b> Combination of mini-lectures and practice in small groups.					
<b>Course Outline</b> Goals/Outline: To understand the research on healthcare educational contents and acquire knowledge required for conducting educational research in healthcare professions. The theme will cover health care professional education ranging from the undergraduate level to life-long learning, focusing on the integration of medicine and dentistry. Available program (schedule): Lecture January 15, 22, 29 and February 5, 2021 Friday 15:00-					
<b>Grading System</b> Combination of participation in discussion/practice/research. As for Lab activities, research contents, participation in related research and meetings, presentations at scientific meetings are also considered.					
<b>Prerequisite Reading</b> Designated parts in the textbook or literature.					
<b>Reference Materials</b> None					
<b>Important Course Requirements</b> Submission of assignments by deadline					
<b>Note(s) to Students</b> None					

<b>Lecture No</b>	041187				
<b>Subject title</b>	Practice of Dental Education Development	<b>Subject ID</b>			
<b>Instructors</b>	MORIO IKUKO, SEKI NAOKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures/practice are conducted in English.					
<b>Lecture place</b>					
Seminar Room of Dental Education Development (M&D Tower 7F south-side, S-757)					
<b>Course Purpose and Outline</b>					
To help students understand the research basics concerning education in healthcare professions.					
<b>Course Objective(s)</b>					
The students will understand and acquire basic elements necessary to conduct research in healthcare professional education.					
<b>Lecture Style</b>					
Combination of mini-lectures and practice in small groups.					
<b>Course Outline</b>					
Goals/Outline:					
To experience the process of research planning and practice in order to do the following:					
– determine the topic and grasp needs/demands					
– to set objectives					
– to evaluate and analyze data.					
Available programs: January 15, 22, 29 and February 5, 2021 Friday 15:00–					
<b>Grading System</b>					
Combination of participation in discussion/practice/research. As for Lab activities, research contents, participation in related research and meetings, presentations at scientific meetings are also considered.					
<b>Prerequisite Reading</b>					
Designated parts in the textbook or literature					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
Submission of assignments by deadline					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041188				
<b>Subject title</b>	Laboratory practice of Dental Education Development	<b>Subject ID</b>			
<b>Instructors</b>	MORIO IKUKO, SEKI NAOKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures/practice/research are conducted in English (mainly).					
<b>Lecture place</b>					
Laboratory of Dental Education Development (M&D Tower 7F south-side)					
<b>Course Purpose and Outline</b>					
To understand and conduct research concerning education in healthcare professions.					
<b>Course Objective(s)</b>					
The students will understand and acquire basic elements necessary to conduct research in healthcare professional education and conduct own research project.					
<b>Lecture Style</b>					
Combination of mini-lectures and practice in small groups, and research project.					
<b>Course Outline</b>					
Goals/Outline: To find issues surrounding dental workforce education, collect appropriate data, sort them out and discuss possible solutions based on the results of analysis.					
<b>Grading System</b>					
Combination of participation in discussion/practice/research. As for Lab activities, research contents, participation in related research and meetings, presentations at scientific meetings are also considered.					
<b>Prerequisite Reading</b>					
Designated parts in the textbook or literature, self-learning and preparation.					
<b>Important Course Requirements</b>					
Submission of assignments by deadline					



<b>Lecture No</b>	041189				
<b>Subject title</b>	Lecture of Oral Health Promotion	<b>Subject ID</b>			
<b>Instructors</b>	AIDA Jun				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
OHP Library (There is a possibility to be changed depending on the programs and instructors)					
<b>Course Purpose and Outline</b>					
The purpose of the course is to foster dental health professionals who can appropriately deal with the change of trend and environment in dentistry, analyze and solve environmental, social and economic problems related to oral health, and practice and develop oral health promotion at individual and community levels.					
<b>Course Objective(s)</b>					
By taking these courses, students will be able to;					
a. Create a proposal for an oral health promotion program or research at individual and community levels using techniques discussed in the courses.					
b. Plan an oral health promotion program or research by applying social and behavioral theories and techniques.					
c. Develop goals, measurable objectives, and effective intervention strategies for an oral health promotion program or research.					
d. Implement an oral health promotion program or research in the actual field of public health.					
e. Design an evaluation plan using appropriate measurement tools, evaluation approaches, and evaluation designs.					
f. Apply appropriate data analytic methods to report the results of an oral health promotion program or research.					
g. Identify and explain the strengths and limitations of an oral health promotion program or research.					
h. Make necessary changes and improvements to an oral health promotion program or research.					
<b>Lecture Style</b> Small-group format					
<b>Course Outline</b>					
Goals/outline:					
One of the goals of the course is to foster dental health professionals who can appropriately deal with the change of trend and environment in dentistry, analyze and solve environmental, social and economic problems related to oral health, and practice and develop oral health promotion at individual and community levels. Specific topics include prevention of oral diseases, clinical practices of dental public health, basic principles and methods of oral epidemiology, social aspect of oral diseases, primary health care and health promotion in various settings, and oral health promotion within the context of health care and education system.					
Another goal is to teach and discuss oral health issues and problems in the world. The topics include comparison of oral health care services, oral health status, and dental education in various countries from a global perspective. The principles and methods for international cooperative activities in the field of dentistry are also introduced.					
The course consists of didactic lectures, case presentations and discussion sessions.					
<b>Grading System</b> The grading will be made based on the lectures, course participation and research content.					
In addition, the degree of participation in research and study meeting, number of conference participation will be considered for comprehensive evaluation.					
<b>Prerequisite Reading</b> Before taking these courses, students are expected to have a wide range of knowledge not only on natural science but also on social science and humanities.					
<b>Reference Materials</b>					
Oral Health Promotion (Lone Schouw and Anthony Blinkhorn) Oxford Medical Publications					
Asian Perspectives and Evidence on Health Promotion and Education (Takashi Muto et al.) Springer					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> ZAITSU TAKASHI:zaitzu.ohp@tmd.ac.jp					

<b>Lecture No</b>	041190				
<b>Subject title</b>	Practice of Oral Health Promotion	<b>Subject ID</b>			
<b>Instructors</b>	AIDA Jun				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
OHP Library (There is a possibility to be changed depending on the programs and instructors)					
<b>Course Purpose and Outline</b>					
The purpose of the course is to foster dental health professionals who can appropriately deal with the change of trend and environment in dentistry, analyze and solve environmental, social and economic problems related to oral health, and practice and develop oral health promotion at individual and community levels.					
<b>Course Objective(s)</b>					
By taking these courses, students will be able to;					
a. Create a proposal for an oral health promotion program or research at individual and community levels using techniques discussed in the courses.					
b. Plan an oral health promotion program or research by applying social and behavioral theories and techniques.					
c. Develop goals, measurable objectives, and effective intervention strategies for an oral health promotion program or research.					
d. Implement an oral health promotion program or research in the actual field of public health.					
e. Design an evaluation plan using appropriate measurement tools, evaluation approaches, and evaluation designs.					
f. Apply appropriate data analytic methods to report the results of an oral health promotion program or research.					
g. Identify and explain the strengths and limitations of an oral health promotion program or research.					
h. Make necessary changes and improvements to an oral health promotion program or research.					
<b>Lecture Style</b>					
Small-group format					
<b>Course Outline</b>					
Goals/Outline:					
Field work is an opportunity to apply key concepts of planning, strategies and evaluation methods, which are essential for developing and practicing oral health promotion and prevention programs at individual and community levels, and analyze actual cases.					
<b>Grading System</b>					
The grading will be made based on the lectures, course participation and research content.					
In addition, the degree of participation in research and study meeting, number of conference participation will be considered for comprehensive evaluation.					
<b>Prerequisite Reading</b>					
Before taking these courses, students are expected to have a wide range of knowledge not only on natural science but also on social science and humanities.					
<b>Reference Materials</b>					
Oral Health Promotion (Lone Schouw and Anthony Blinkhorn) Oxford Medical Publications					
Asian Perspectives and Evidence on Health Promotion and Education (Takashi Muto et al.) Springer					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
ZAITSU TAKASHI:zaitso.ohp@tmd.ac.jp					

<b>Lecture No</b>	041191				
<b>Subject title</b>	Laboratory practice of Oral Health Promotion			<b>Subject ID</b>	
<b>Instructors</b>	AIDA Jun				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
OHP Library (There is a possibility to be changed depending on the programs and instructors)					
<b>Course Purpose and Outline</b>					
The purpose of the course is to foster dental health professionals who can appropriately deal with the change of trend and environment in dentistry, analyze and solve environmental, social and economic problems related to oral health, and practice and develop oral health promotion at individual and community levels.					
<b>Course Objective(s)</b>					
By taking these courses, students will be able to;					
a. Create a proposal for an oral health promotion program or research at individual and community levels using techniques discussed in the courses.					
b. Plan an oral health promotion program or research by applying social and behavioral theories and techniques.					
c. Develop goals, measurable objectives, and effective intervention strategies for an oral health promotion program or research.					
d. Implement an oral health promotion program or research in the actual field of public health.					
e. Design an evaluation plan using appropriate measurement tools, evaluation approaches, and evaluation designs.					
f. Apply appropriate data analytic methods to report the results of an oral health promotion program or research.					
g. Identify and explain the strengths and limitations of an oral health promotion program or research.					
h. Make necessary changes and improvements to an oral health promotion program or research.					
<b>Lecture Style</b>					
Small-group format					
<b>Course Outline</b>					
Goals/Outline:					
Implement an intervention program in the field of maternal health, school health, industrial health or adult/elderly health, and conduct analysis and evaluation on the effects of the intervention program.					
<b>Grading System</b>					
The grading will be made based on the lectures, course participation and research content.					
In addition, the degree of participation in research and study meeting, number of conference participation will be considered for comprehensive evaluation.					
<b>Prerequisite Reading</b>					
Before taking these courses, students are expected to have a wide range of knowledge not only on natural science but also on social science and humanities.					
<b>Reference Materials</b>					
Oral Health Promotion (Lone Schouw and Anthony Blinkhorn) Oxford Medical Publications					
Asian Perspectives and Evidence on Health Promotion and Education (Takashi Muto et al.) Springer					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
ZAITSU TAKASHI:zaitso.ohp@tmd.ac.jp					

<b>Lecture No</b>	041192				
<b>Subject title</b>	Lecture of Sports Medicine and Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	UENO TOSHIAKI, CHUREI HIROSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Because classroom and venues are different from each of the following program, please confirm the venue in advance to contact person. Our labs and offices are located at 3rd and 4th floor of the building 10.					
<b>Course Purpose and Outline</b>					
Purpose and outline of this course is to provide essential knowledge and experimental technique to understand and research sports medicine and dentistry through the lecture, practice and lab works described bellow.					
<b>Course Objective(s)</b>					
To understand oral health management for athletes and sports-loved people, To understand the diagnosis, treatment procedure and safety measure of sports-related oral and maxillofacial injury, To understand the relationship between oral function and general motor function.					
<b>Lecture Style</b>					
Lectures and small-group discussions in will be performed.					
<b>Course Outline</b>					
Goals/outline: The following topics on sports medicine/dentistry will be lectured: 1. Maintenance and improvement of individual's health by various sporting activities and recreations; 2. Diagnosis, treatment and prevention of sports injury and disorders; 3. Improvement and optimization of athletic performance on the basis of exercise physiological and kinesiological studies.					
<b>Grading System</b>					
Grading is performed comprehensively based on participation situation, learning and dicussing attitudes to programs.					
<b>Prerequisite Reading</b>					
It should be confirmed the subject professor about the necessity of prior learning.					
<b>Reference Materials</b>					
Sports dentistry (Dental North Clinics of North America) , Advances in Sports dentistry (Dental North Clinics of North America) , Textbook and Color Atlas of Traumatic Injuries to the Teeth (Willy-Blackwell), Oxford Textbook of Sports Medicine (Oxford University Press)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041193				
<b>Subject title</b>	Practice of Sports Medicine and Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	UENO TOSHIAKI, CHUREI HIROSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Because classroom and venues are different from each of the following program, please confirm the venue in advance to contact person. Our labs and offices are located at 3rd and 4th floor of the building 10.					
<b>Course Purpose and Outline</b>					
Purpose and outline of this course is to provide essential knowledge and experimental technique to understand and research sports medicine and dentistry through the lecture, practice and lab works described below.					
<b>Course Objective(s)</b>					
To understand oral health management for athletes and sports-loved people, To understand the diagnosis, treatment procedure and safety measure of sports-related oral and maxillofacial injury, To understand the relationship between oral function and general motor function.					
<b>Lecture Style</b>					
Lectures and small-group discussions in will be performed.					
<b>Course Outline</b>					
Goals/Outline: Trends and controversial points in recent researches for sports medicine/dentistry will be discussed through participation and presentation in Journal Club. Clinical skills and knowledge of diagnosis, treatment and prevention will be studied through participation in Clinical Conference.					
<b>Grading System</b>					
Grading is performed comprehensively based on participation situation, learning and discussing attitudes to programs.					
<b>Prerequisite Reading</b>					
It should be confirmed the subject professor about the necessity of prior learning.					
<b>Reference Materials</b>					
Sports dentistry (Dental North Clinics of North America) , Advances in Sports dentistry (Dental North Clinics of North America) , Textbook and Color Atlas of Traumatic Injuries to the Teeth (Willy-Blackwell), Oxford Textbook of Sports Medicine (Oxford University Press)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041194				
<b>Subject title</b>	Laboratory practice of Sports Medicine and Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	UENO TOSHIAKI, CHUREI HIROSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Because classroom and venues are different from each of the following program, please confirm the venue in advance to contact person. Our labs and offices are located at 3rd and 4th floor of the building 10.					
<b>Course Purpose and Outline</b>					
Purpose and outline of this course is to provide essential knowledge and experimental technique to understand and research sports medicine and dentistry through the lecture, practice and lab works described bellow.					
<b>Course Objective(s)</b>					
To understand oral health management for athletes and sports-loved people, To understand the diagnosis, treatment procedure and safety measure of sports-related oral and maxillofacial injury, To understand the relationship between oral function and general motor function.					
<b>Lecture Style</b>					
Lectures and small-group discussions in will be performed.					
<b>Course Outline</b>					
Goals/Outline: Handlings of experimental devices for sport medicine/dentistry study and collection and analysis of data will be practically trained through participation in research group in SPMD Lab.					
<b>Grading System</b>					
Grading is performed comprehensively based on participation situation, learning and dicussing attitudes to programs.					
<b>Prerequisite Reading</b>					
It should be confirmed the subject professor about the necessity of prior learning.					
<b>Reference Materials</b>					
Sports dentistry (Dental North Clinics of North America) , Advances in Sports dentistry (Dental North Clinics of North America) , Textbook and Color Atlas of Traumatic Injuries to the Teeth (Willy-Blackwell), Oxford Textbook of Sports Medicine (Oxford University Press)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041195				
<b>Subject title</b>	Lecture of Educational System in Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	ARAKI KOJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
Confirm it to the instructor in a different place by a program beforehand.					
<b>Course Purpose and Outline</b>					
The aim of the lecture is to understand the purpose and method about the evaluation of dental education system. In addition, it is to understand the level and inspection method of international dental education .					
<b>Course Objective(s)</b>					
1) You can explain various evaluation method for the dental education. 2) You can explain the international level in each undergraduate and postgraduate of dental education. 3) You can explain the construction method of the dental education system.					
<b>Lecture Style</b>					
The instructor performs guidance for students to help teaching self-study, problem discovery, and development of the problem solving ability.					
<b>Course Outline</b>					
Main object of educational system in dentistry in the graduate course is to provide opportunity to study evaluation method for dental education curriculum, inspection method of the validity and reliability of the evaluation system for dental education, evaluation system compared between international and Japanese education level in undergraduate or after the graduation periods. Lecture:6/1-7/13(every Monday, 17:00-19:00) Special Lecture:It will carry out in three times form 17:00-19:00 (date undecided)					
<b>Grading System</b>					
Instructor generally evaluates it based on a lecture, practice, lab, the participation situation to the experiment and an action. In addition, Instructor performs a general evaluation based on degree of report contents, various studies and the participation in study meeting, the number of times of the presentation at the meeting.					
<b>Prerequisite Reading</b>					
Instructor recommends that you read beforehand about the following reference book.					
<b>Reference Materials</b>					
* Everything is a Japanese textbook. 1) 高橋優三:新医学教育あれこれ 能動教育の推進に役立つ実務資料集. 三恵社. 2011. 2) 千代豪昭、黒田研二 編集:学生のための医療概論 第3版. 医学書院. 2010. 3) J. A. Dent, R. M. Harden(著)鈴木康之、錦織 宏(監訳):医学教育の理論と実践. 篠原出版. 2010. 4) 日本テスト学会(編):テスト・スタンダード. 金子書房. 2007. 5) P. Schwartz, S.Mennin, G. Webb(編集)大西弘高(監訳):PBL 世界の大学での小グループ問題基盤型カリキュラム導入の経験に学ぶ. 篠原出版社. 2007. 6) 大学評価・学位授与機構編著:大学評価文化の定着ー日本の大学は世界で通用するか? ぎょうせい. 2014. 7) 生和秀俊編著:大学評価の体系化. 東信堂2016.					
<b>Important Course Requirements</b>					
It needs the attendance of all lectures, but when you take a rest for a reason not to be able to bear to stop, instructor will give you the problem of the report.					
<b>Note(s) to Students</b>					
There is not the number of people restrictions.					

<b>Lecture No</b>	041196				
<b>Subject title</b>	Practice of Educational System in Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	ARAKI KOJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
Confirm it to the instructor in a different place by a program beforehand.					
<b>Course Purpose and Outline</b>					
The aim of the practice is to understand a method of data analysis provided by the evaluation system for the dental education, In addition, it is to understand the comparison with the international education level.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1) You can explain various evaluation method for the dental education.</li> <li>2) You can explain the international level in each undergraduate and postgraduate of dental education.</li> <li>3) You can explain the construction method of the dental education system.</li> <li>4) You can explain the dental education using simulation devices.</li> <li>5) You can practice the simulation devices for the dental education.</li> <li>6) You can practice the data analysis of the evaluation for the dental education..</li> <li>5) You can practice the simulation devices for the dental education.</li> <li>6) You can practice the data analysis of the evaluation for the dental education..</li> </ol>					
<b>Lecture Style</b>					
The instructor performs guidance for students to help teaching self-study, problem discovery, and development of the problem solving ability. In the practice, students can perform experience training using equipment developed for simulation education.					
<b>Course Outline</b>					
Students participate in data analysis and the comparison with an international educational level evaluation system. Data analysis about the enaluation for dentaeducation sysytem from November to December(every Monday 16:00-18:00)					
<b>Grading System</b>					
Instructor generally evaluates it based on a lecture, practice, lab, the participation situation to the experiment and an action. In addition, Instructor performs a general evaluation based on degree of report contents, various studies and the participation in study meeting, the number of times of the presentation at the meeting.					
<b>Prerequisite Reading</b> Instructor recommends that you read beforehand about the following reference book.					
<b>Reference Materials</b>					
* Everything is a Japanese textbook.					
<ol style="list-style-type: none"> <li>1) 高橋優三:新医学教育あれこれ 能動教育の推進に役立つ実務資料集. 三恵社. 2011.</li> <li>2) 千代豪昭, 黒田研二 編集:学生のための医療概論 第3版. 医学書院. 2010.</li> <li>3) J. A. Dent, R. M. Harden(著)鈴木康之、錦織 宏(監訳):医学教育の理論と実践. 篠原出版. 2010.</li> <li>4) 日本テスト学会(編):テスト・スタンダード. 金子書房. 2007.</li> <li>5) P. Schwartz, S.Mennin, G. Webb(編集)大西弘高(監訳):PBL 世界の大学での小グループ問題基盤型カリキュラム導入の経験に学ぶ. 篠原出版社. 2007.</li> <li>6) 大学評価・学位授与機構編著:大学評価文化の定着ー日本の大学は世界で通用するか? ぎょうせい. 2014.</li> <li>7) 生和秀俊編著:大学評価の体系化. 東信堂2016.</li> </ol>					
<b>Important Course Requirements</b>					
It needs the attendance of all lectures, but when you take a rest for a reason not to be able to bear to stop, instructor will give you the problem of the report.					
<b>Note(s) to Students</b> As a general rule, the number of participate in the practice and Lab can assume it less than ten.					



<b>Lecture No</b>	041197				
<b>Subject title</b>	Laboratory practice of Educational System in Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	ARAKI KOJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
Confirm it to the instructor in a different place by a program beforehand.					
<b>Course Purpose and Outline</b>					
The aim of the Lab is to manage the teaching materials developed for simulation education and is to understand the inspection method of the evaluation for new education system.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1) You can explain various evaluation method for the dental education.</li> <li>2) You can explain the international level in each undergraduate and postgraduate of dental education.</li> <li>3) You can explain the construction method of the dental education system.</li> <li>4) You can explain the dental education using simulation devices.</li> <li>5) You can practice the simulation devices for the dental education.</li> <li>6) You can practice the data analysis of the evaluation for the dental education..</li> </ol>					
<b>Lecture Style</b> In the practice, students can perform experience training using equipment developed for simulation education.					
<b>Course Outline</b>					
Students participate in research of the evaluation method of a new educational system while experiencing the teaching materials and system developed for simulation education.					
Study of the education system evaluation using the dentistry education simulation system from October to December (in total ten times for once two hours, on the day, not to arrange)					
<b>Grading System</b>					
Instructor generally evaluates it based on a lecture, practice, lab, the participation situation to the experiment and an action. In addition, Instructor performs a general evaluation based on degree of report contents, various studies and the participation in study meeting, the number of times of the presentation at the meeting.					
<b>Prerequisite Reading</b>					
<ol style="list-style-type: none"> <li>1) Instructor recommends that you read beforehand about the following reference book.</li> <li>2) Instructor recommends that the graduate student of the dentist will use to a dental education simulation system.</li> </ol>					
<b>Reference Materials</b>					
* Everything is a Japanese textbook.					
<ol style="list-style-type: none"> <li>1) 高橋優三:新医学教育あれこれ 能動教育の推進に役立つ実務資料集. 三恵社. 2011.</li> <li>2) 千代豪昭、黒田研二 編集:学生のための医療概論 第3版. 医学書院. 2010.</li> <li>3) J. A. Dent, R. M. Harden(著)鈴木康之、錦織 宏(監訳):医学教育の理論と実践. 篠原出版. 2010.</li> <li>4) 日本テスト学会(編):テスト・スタンダード. 金子書房. 2007.</li> <li>5) P. Schwartz, S.Mennin, G. Webb(編集)大西弘高(監訳):PBL 世界の大学での小グループ問題基盤型カリキュラム導入の経験に学ぶ. 篠原出版社. 2007.</li> <li>6) 大学評価・学位授与機構編著:大学評価文化の定着—日本の大学は世界で通用するか? ぎょうせい. 2014.</li> <li>7) 生和秀俊編著:大学評価の体系化. 東信堂2016.</li> </ol>					
<b>Important Course Requirements</b>					
It needs the attendance of all lectures, but when you take a rest for a reason not to be able to bear to stop, instructor will give you the problem of the report.					
<b>Note(s) to Students</b> As a general rule, the number of participate in the practice and Lab can assume it less than ten.					

<b>Lecture No</b>	041198				
<b>Subject title</b>	Lecture of Educational Media Development			<b>Subject ID</b>	
<b>Instructors</b>	KINOSHITA ATSUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Information Retrieval Room in University Library, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.					
<b>Course Purpose and Outline</b>					
This course will provide students with an overview of current educational media in health science professionals utilizing information and communication technologies (ICT).					
Each student must create and present original educational materials in this course.					
<b>Course Objective(s)</b>					
To understand the characteristics of current educational systems and educational media utilizing ICT.					
To learn how to create and apply original educational materials.					
To perform and report a study on development, application, or evaluation of new educational media.					
<b>Lecture Style</b>					
Small-group format.					
<b>Course Outline</b>					
Goals/outline:					
The goals of the course are to understand the characteristics of current educational systems and educational media utilizing information and communication technologies, such as computer assisted simulation systems, e-learning systems, and live broadcasting systems, and to learn how to create original educational materials, and to master the way to apply them on the education for health science professionals.					
<b>Grading System</b>					
Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.					
<b>Prerequisite Reading</b>					
Student should experience sample materials of computer assisted simulation for medical and dental practice training on the website ( <a href="http://www.tmd.ac.jp/dent/program/tmd04/page04.html">http://www.tmd.ac.jp/dent/program/tmd04/page04.html</a> ).					
Student should read documents on the WebClass course, and follow as instructed.					
<b>Reference Materials</b>					
TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
none.					

<b>Lecture No</b>	041199				
<b>Subject title</b>	Practice of Educational Media Development	<b>Subject ID</b>			
<b>Instructors</b>	KINOSHITA ATSUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Information Retrieval Room in University Library, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.					
<b>Course Purpose and Outline</b>					
This course will provide students with an overview of current educational media in health science professionals utilizing information and communication technologies (ICT).					
Each student must create and present original educational materials in this course.					
<b>Course Objective(s)</b>					
To understand the characteristics of current educational systems and educational media utilizing ICT.					
To learn how to create and apply original educational materials.					
To perform and report a study on development, application, or evaluation of new educational media.					
<b>Lecture Style</b>					
Small-group format.					
<b>Course Outline</b>					
Goals/outline:					
The goal of the practice is to create a new original teaching material utilizing information and communication technologies, such as computer assisted simulation systems, and e-learning systems.					
<b>Grading System</b>					
Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.					
<b>Prerequisite Reading</b>					
Student should experience sample materials of computer assisted simulation for medical and dental practice training on the website ( <a href="http://www.tmd.ac.jp/dent/program/tmd04/page04.html">http://www.tmd.ac.jp/dent/program/tmd04/page04.html</a> ).					
Student should read documents on the WebClass course, and follow as instructed.					
<b>Reference Materials</b>					
TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
none.					

<b>Lecture No</b>	041200				
<b>Subject title</b>	Laboratory practice of Educational Media Development	<b>Subject ID</b>			
<b>Instructors</b>	KINOSHITA ATSUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Information Retrieval Room in University Library, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.					
<b>Course Purpose and Outline</b>					
This course will provide students with an overview of current educational media in health science professionals utilizing information and communication technologies (ICT).					
Each student must create and present original educational materials in this course.					
<b>Course Objective(s)</b>					
To understand the characteristics of current educational systems and educational media utilizing ICT.					
To learn how to create and apply original educational materials.					
To perform and report a study on development, application, or evaluation of new educational media.					
<b>Lecture Style</b>					
Small-group format.					
<b>Course Outline</b>					
Goals/outline:					
The goals of the lab are to develop a new original teaching material or an educational system utilizing information and communication technologies, to apply it on the education for health science professionals, to evaluate its educational effects, and to present the results of the study.					
<b>Grading System</b>					
Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.					
<b>Prerequisite Reading</b>					
Student should experience sample materials of computer assisted simulation for medical and dental practice training on the website ( <a href="http://www.tmd.ac.jp/dent/program/tmd04/page04.html">http://www.tmd.ac.jp/dent/program/tmd04/page04.html</a> ).					
Student should read documents on the WebClass course, and follow as instructed.					
<b>Reference Materials</b>					
TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
none.					

<b>Lecture No</b>	041201				
<b>Subject title</b>	Lecture of Insured Medical Care Management			<b>Subject ID</b>	
<b>Instructors</b>	AI MASUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> To be announced					
<b>Course Purpose and Outline</b> The purpose of this course is to understand the concepts and the structure of social medical insurance and its problems. Also seeking the solutions or improvement measures for the problems especially for its operation and/or management.					
<b>Course Objective(s)</b> The objective is to understand the overview of the social medical insurance and its problems, and to seek the solution for them through the analyses of the social background and other factors.					
<b>Lecture Style</b> Lecture and small group discussion					
<b>Course Outline</b> Goals/outline: To learn the structure and the implementation details of the social insurance system for medical care in Japan.					
<b>Grading System</b> Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Participation for the research meeting and submitting reports are mandatory. The submission of reports on an individual thesis based on clinical experience of the applicant is also required during the period.					
<b>Prerequisite Reading</b> Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.					
<b>Reference Materials</b> No reference materials written in English. There are some reference materials in Japanese.					
<b>Important Course Requirements</b> It is strictly prohibited to bring data to off-campus. The handling of personal information must be careful. Do not allow the course if there is a problem with the observance of confidentiality.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> ai.vasc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday~Friday 2:00pm~4:30pm Insured Medical Care Management Office, on 2nd Floor of Medical Hospital					

<b>Lecture No</b>	041202				
<b>Subject title</b>	Practice of Insured Medical Care Management	<b>Subject ID</b>			
<b>Instructors</b>	AI MASUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> To be announced					
<b>Course Purpose and Outline</b> The purpose of this course is to understand the concepts and the structure of social medical insurance and its problems. Also seeking the solutions or improvement measures for the problems especially for its operation and/or management.					
<b>Course Objective(s)</b> The objective is to understand the overview of the social medical insurance and its problems, and to seek the solution for them through the analyses of the social background and other factors.					
<b>Lecture Style</b> Lecture and small group discussion					
<b>Course Outline</b> Goals/outline: To investigate and discuss on the problems on the health insurance system.					
<b>Grading System</b> Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Participation for the research meeting and submitting reports are mandatory. The submission of reports on an individual thesis based on clinical experience of the applicant is also required during the period.					
<b>Prerequisite Reading</b> Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.					
<b>Reference Materials</b> No reference materials written in English. There are some reference materials in Japanese.					
<b>Important Course Requirements</b> It is strictly prohibited to bring data to off-campus. The handling of personal information must be careful. Do not allow the course if there is a problem with the observance of confidentiality.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> ai.vasc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday~Friday 2:00pm~4:30pm Insured Medical Care Management Office, on 2nd Floor of Medical Hospital					

<b>Lecture No</b>	041203				
<b>Subject title</b>	Laboratory practice of Insured Medical Care Management	<b>Subject ID</b>			
<b>Instructors</b>	AI MASUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> To be announced					
<b>Course Purpose and Outline</b> The purpose of this course is to understand the concepts and the structure of social medical insurance and its problems. Also seeking the solutions or improvement measures for the problems especially for its operation and/or management.					
<b>Course Objective(s)</b> The objective is to understand the overview of the social medical insurance and its problems, and to seek the solution for them through the analyses of the social background and other factors.					
<b>Lecture Style</b> Lecture and small group discussion					
<b>Course Outline</b> Goals/outline: To plan and conduct a research project on social insurance system, including data collection and analyses.					
<b>Grading System</b> Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Participation for the research meeting and submitting reports are mandatory. The submission of reports on an individual thesis based on clinical experience of the applicant is also required during the period.					
<b>Prerequisite Reading</b> Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.					
<b>Reference Materials</b> No reference materials written in English. There are some reference materials in Japanese.					
<b>Important Course Requirements</b> It is strictly prohibited to bring data to off-campus. The handling of personal information must be careful. Do not allow the course if there is a problem with the observance of confidentiality.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> ai.vasc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday~Friday 2:00pm~4:30pm Insured Medical Care Management Office, on 2nd Floor of Medical Hospital					

<b>Lecture No</b>	041204				
<b>Subject title</b>	Lecture of Global Health Entrepreneurship	<b>Subject ID</b>			
<b>Instructors</b>	NAKAMURA KEIKO, SEINO KAORUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lectures are held in lecture rooms (Graduate Lecture Room 2, M&D Tower, 13th FL; Graduate Lecture Room, 3rd Building, 6th FL; other rooms). Venue for practices and labs should be confirmed with instructors.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to help prepare health professionals as leaders in global public health and entrepreneurs in global health. This course provides overview of global public health and analytical methodologies addressing disease prevention, health and quality of life and environment at local, national and global settings. Participants will learn the concept of public health and entrepreneurship in global context, specialized skills and knowledge necessary to communicate and produce quantitative and qualitative information, and strategies to integrate academic wisdom to public health policies and practices from global contexts.					
<b>Course Objective(s)</b>					
At the completion of the course, participants are expected to be able to:					
(1) Explain theoretical framework and history of global public health					
(2) Assess health and wellbeing of the populations as well as risk of diseases in by using quantitative and qualitative data, analyze critically based on evidence with multifaceted approaches					
(3) Determine appropriate uses and limitations of major quantitative and qualitative analysis methods					
(4) Apply ethical principles to conduct research in different countries with understandings and respects of cultural and other background issues					
(5) Identify population health problems at local, national and international settings, develop a research protocol to addressing solutions, and conduct research including field work when necessary					
(6) Apply sampling, data collection processes, and information technology applications effectively and productively in an actual environment					
(7) Produce high-quality research results and workable solutions that meet community health needs					
(8) Report and disseminate information and opinions in a structured and credible way, and to ensure that messages have been heard and understood by the intended audience					
(9) Develop and lead entrepreneurial projects to advance health of the populations with global context by participation of multiple stakeholders					
<b>Lecture Style</b>					
Lectures, group discussions, and team project. English is used in principle.					
<b>Course Outline</b>					
Outline: Demographic and environmental changes and rapid urbanization, are affecting the health and quality of life of people around the world. Academic endeavors to deepen understanding of the physical, social, cultural, and economic aspects of human-environmental interactions are fundamental to strengthen human security. Topics include overviews of major fields of global public health; human security; diverse regional issues from around the world; health equity; global environmental changes and health; health in cities; determinants of health; health promotion and education; family health; health systems around the world; field epidemiology; measuring individual and population health; evaluation of health programs; public-private partnership for health; and international health cooperation. Opportunities to read and evaluate scientific journals, share interpretations of them, and to stimulate new ideas about various problems and issues in public health are arranged. Participants are encourages to become entrepreneurs in developing projects with global perspectives.					
<b>Grading System</b>					
Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.					
<b>Prerequisite Reading</b>					
Participants are expected to read materials distributed beforehand.					
<b>Reference Materials</b>					



Roger Detels, Robert Beaglehole, Mary Ann Lansang, Martin Gulliford. (2009) Oxford textbook of public health. 5th ed. Oxford University Press.

Fran Baum.(2008) The new public health. 3rd ed. Oxford University Press

Michael H. Merson, Robert E. Black, Anne J. Mills. (2011) Global health: diseases, programs, systems, and policies. 3rd edition. Jones and Bartlett Publishers.

Richard Skolnik. (2008) Essentials of global health. Jones and Bartlett Publishers.

Anne–Emanuelle Bim, Yogan Pillay, Timothy H Holtz. (2009) Text book of international health: global health in a dynamic world. Oxford University Press.

Kenneth J. Rothman. (2012) Epidemiology: an introduction. 2nd ed. Oxford University Press.

Ann Aschengrau, George R. Seage. (2013) Essentials of epidemiology in public health. 3rd ed. Jones & Bartlett Learning, Burlington.

International Epidemiological Association (2014) A Dictionary of Epidemiology. 6th ed. Oxford University Press.

Bernard Rosner. (2010) Fundamentals of biostatistics. 7th ed. Cengage Learning, Independence.

Marcello Pagano, Kimberlee Gauvreau. (2000) Principles of biostatistics, 2nd ed. Cengage Learning, Independence.

Groves RM, Fowler FJ, Jr., Couper MP, Lepkowski JM, Singer E, Tourangeau R. (2009) Survey methodology. 2nd ed. John Wiley & Sons, Hoboken.

Michael Marmot, Richard G. Wilkinson. (2005) Social determinants of health. Oxford University Press.

Ross C. Brownson, Elizabeth A. Baker, Terry L. Leet, Kathleen N. Gillespie, William R. True . (2010) Evidence–based public health, 2nd ed. Oxford University Press.

WHO and UNHABITAT (2016) Global Report on Urban Health: equitable, healthier cities for sustainable development. World Health Organization.

Evelyne de Leeuw, Jean Simos. (2016) Healthy Cities. Springer.

**Important Course Requirements**

Participants are required to show willingness to learn from experiences and feedbacks, and to stay active to apply lessons to improve skills, knowledge, and performance. Instructor’s permission required before course registration

**Note(s) to Students**

The instruction provided through courses is based on individual interests and expertise.

Intensive educational programs for working students are provided.

Collaborative programs with international organizations are prepared.

Number of participants will be limited. To attend the classes, permission of the instructors is required.

**Instructor’s Contact Information**

NAKAMURA KEIKO:Office hours:  
Please contact Prof. Keiko Nakamura at nakamura.ith@tmd.ac.jp

<b>Lecture No</b>	041205				
<b>Subject title</b>	Practice of Global Health Entrepreneurship	<b>Subject ID</b>			
<b>Instructors</b>	NAKAMURA KEIKO, SEINO KAORUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lectures are held in lecture rooms (Graduate Lecture Room 2, M&D Tower, 13th FL; Graduate Lecture Room, 3rd Building, 6th FL; other rooms). Venue for practices and labs should be confirmed with instructors.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to help prepare health professionals as leaders in global public health and entrepreneurs in global health. This course provides overview of global public health and analytical methodologies addressing disease prevention, health and quality of life and environment at local, national and global settings. Participants will learn the concept of public health and entrepreneurship in global context, specialized skills and knowledge necessary to communicate and produce quantitative and qualitative information, and strategies to integrate academic wisdom to public health policies and practices from global contexts.					
<b>Course Objective(s)</b>					
At the completion of the course, participants are expected to be able to:					
(1) Explain theoretical framework and history of global public health					
(2) Assess health and wellbeing of the populations as well as risk of diseases in by using quantitative and qualitative data, analyze critically based on evidence with multifaceted approaches					
(3) Determine appropriate uses and limitations of major quantitative and qualitative analysis methods					
(4) Apply ethical principles to conduct research in different countries with understandings and respects of cultural and other background issues					
(5) Identify population health problems at local, national and international settings, develop a research protocol to addressing solutions, and conduct research including field work when necessary					
(6) Apply sampling, data collection processes, and information technology applications effectively and productively in an actual environment					
(7) Produce high-quality research results and workable solutions that meet community health needs					
(8) Report and disseminate information and opinions in a structured and credible way, and to ensure that messages have been heard and understood by the intended audience					
(9) Develop and lead entrepreneurial projects to advance health of the populations with global context by participation of multiple stakeholders					
<b>Lecture Style</b>					
Lectures, group discussions, and team project. English is used in principle.					
<b>Course Outline</b>					
Outline: Individual practicums address the quantitative and qualitative methods necessary in the assessment of health and quality of life of population and environmental qualities at local, national, and international settings and address the evaluation of the effectiveness of health interventions and programs. Opportunities to advance academic skills of critical reading of original research work in public health, knowledge of ethics for public health research and its practical applications, and professional skills and attitudes required for international health leaders are provided. Technical visits to health promotion related sites and institutions are also arranged.					
<b>Grading System</b>					
Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.					
<b>Prerequisite Reading</b>					
Participants are expected to read materials distributed beforehand.					
<b>Reference Materials</b>					
Roger Detels, Robert Beaglehole, Mary Ann Lansang, Martin Gulliford. (2009) Oxford textbook of public health. 5th ed. Oxford University Press.					
Fran Baum.(2008) The new public health. 3rd ed. Oxford University Press					
Michael H. Merson, Robert E. Black, Anne J. Mills. (2011) Global health: diseases, programs, systems, and policies. 3rd edition. Jones and					

Bartlett Publishers.

Richard Skolnik. (2008) Essentials of global health. Jones and Bartlett Publishers.

Anne-Emanuelle Bim, Yogan Pillay, Timothy H Holtz. (2009) Text book of international health: global health in a dynamic world. Oxford University Press.

Kenneth J. Rothman. (2012) Epidemiology: an introduction. 2nd ed. Oxford University Press.

Ann Aschengrau, George R. Seage. (2013) Essentials of epidemiology in public health. 3rd ed. Jones & Bartlett Learning, Burlington.

International Epidemiological Association (2014) A Dictionary of Epidemiology. 6th ed. Oxford University Press.

Bernard Rosner. (2010) Fundamentals of biostatistics. 7th ed. Cengage Learning, Independence.

Marcello Pagano, Kimberlee Gauvreau. (2000) Principles of biostatistics, 2nd ed. Cengage Learning, Independence.

Groves RM, Fowler FJ, Jr., Couper MP, Lepkowski JM, Singer E, Tourangeau R. (2009) Survey methodology. 2nd ed. John Wiley & Sons, Hoboken.

Michael Marmot, Richard G. Wilkinson. (2005) Social determinants of health. Oxford University Press.

Ross C. Brownson, Elizabeth A. Baker, Terry L. Leet, Kathleen N. Gillespie, William R. True. (2010) Evidence-based public health, 2nd ed. Oxford University Press.

WHO and UNHABITAT (2016) Global Report on Urban Health: equitable, healthier cities for sustainable development. World Health Organization.

Evelyne de Leeuw, Jean Simos. (2016) Healthy Cities. Springer.

#### **Important Course Requirements**

Participants are required to show willingness to learn from experiences and feedbacks, and to stay active to apply lessons to improve skills, knowledge, and performance. Instructor's permission required before course registration

#### **Note(s) to Students**

The instruction provided through courses is based on individual interests and expertise.

Intensive educational programs for working students are provided.

Collaborative programs with international organizations are prepared.

Number of participants will be limited. To attend the classes, permission of the instructors is required.

#### **Instructor's Contact Information**

NAKAMURA KEIKO:Office hours:

Please contact Prof. Keiko Nakamura at nakamura.ith@tmd.ac.jp

<b>Lecture No</b>	041206				
<b>Subject title</b>	Laboratory practice of Global Health Entrepreneurship	<b>Subject ID</b>			
<b>Instructors</b>	NAKAMURA KEIKO, SEINO KAORUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Lectures are held in lecture rooms (Graduate Lecture Room 2, M&D Tower, 13th FL; Graduate Lecture Room, 3rd Building, 6th FL; other rooms). Venue for practices and labs should be confirmed with instructors.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to help prepare health professionals as leaders in global public health and entrepreneurs in global health. This course provides overview of global public health and analytical methodologies addressing disease prevention, health and quality of life and environment at local, national and global settings. Participants will learn the concept of public health and entrepreneurship in global context, specialized skills and knowledge necessary to communicate and produce quantitative and qualitative information, and strategies to integrate academic wisdom to public health policies and practices from global contexts.					
<b>Course Objective(s)</b>					
At the completion of the course, participants are expected to be able to:					
(1) Explain theoretical framework and history of global public health					
(2) Assess health and wellbeing of the populations as well as risk of diseases in by using quantitative and qualitative data, analyze critically based on evidence with multifaceted approaches					
(3) Determine appropriate uses and limitations of major quantitative and qualitative analysis methods					
(4) Apply ethical principles to conduct research in different countries with understandings and respects of cultural and other background issues					
(5) Identify population health problems at local, national and international settings, develop a research protocol to addressing solutions, and conduct research including field work when necessary					
(6) Apply sampling, data collection processes, and information technology applications effectively and productively in an actual environment					
(7) Produce high-quality research results and workable solutions that meet community health needs					
(8) Report and disseminate information and opinions in a structured and credible way, and to ensure that messages have been heard and understood by the intended audience					
(9) Develop and lead entrepreneurial projects to advance health of the populations with global context by participation of multiple stakeholders					
<b>Lecture Style</b>					
Lectures, group discussions, and team project. English is used in principle.					
<b>Course Outline</b>					
Outline: Opportunities of applying techniques to design, prepare, implement, analyze, and evaluate a health promotion program in actual settings in diverse geographic, social, and cultural background are offered for interested and qualified students. Instructions on writing grant proposals, ethical consideration and procedures in public health research, and professional reporting skills are also provided as necessary.					
<b>Grading System</b>					
Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.					
<b>Prerequisite Reading</b>					
Participants are expected to read materials distributed beforehand.					
<b>Reference Materials</b>					
Roger Detels, Robert Beaglehole, Mary Ann Lansang, Martin Gulliford. (2009) Oxford textbook of public health. 5th ed. Oxford University Press.					
Fran Baum.(2008) The new public health. 3rd ed. Oxford University Press					
Michael H. Merson, Robert E. Black, Anne J. Mills. (2011) Global health: diseases, programs, systems, and policies. 3rd edition. Jones and Bartlett Publishers.					
Richard Skolnik. (2008) Essentials of global health. Jones and Bartlett Publishers.					

Anne-Emanuelle Bim, Yogan Pillay, Timothy H Holtz. (2009) Text book of international health: global health in a dynamic world. Oxford University Press.

Kenneth J. Rothman. (2012) Epidemiology: an introduction. 2nd ed. Oxford University Press.

Ann Aschengrau, George R. Seage. (2013) Essentials of epidemiology in public health. 3rd ed. Jones & Bartlett Learning, Burlington.

International Epidemiological Association (2014) A Dictionary of Epidemiology. 6th ed. Oxford University Press.

Bernard Rosner. (2010) Fundamentals of biostatistics. 7th ed. Cengage Learning, Independence.

Marcello Pagano, Kimberlee Gauvreau. (2000) Principles of biostatistics, 2nd ed. Cengage Learning, Independence.

Groves RM, Fowler FJ, Jr., Couper MP, Lepkowski JM, Singer E, Tourangeau R. (2009) Survey methodology. 2nd ed. John Wiley & Sons, Hoboken.

Michael Marmot, Richard G. Wilkinson. (2005) Social determinants of health. Oxford University Press.

Ross C. Brownson, Elizabeth A. Baker, Terry L. Leet, Kathleen N. Gillespie, William R. True . (2010) Evidence-based public health, 2nd ed. Oxford University Press.

WHO and UNHABITAT (2016) Global Report on Urban Health: equitable, healthier cities for sustainable development. World Health Organization.

Evelyne de Leeuw, Jean Simos. (2016) Healthy Cities. Springers.

**Important Course Requirements**

Participants are required to show willingness to learn from experiences and feedbacks, and to stay active to apply lessons to improve skills, knowledge, and performance. Instructor's permission required before course registration

**Note(s) to Students**

The instruction provided through courses is based on individual interests and expertise.

Intensive educational programs for working students are provided.

Collaborative programs with international organizations are prepared.

Number of participants will be limited. To attend the classes, permission of the instructors is required.

**Instructor's Contact Information**

NAKAMURA KEIKO:Office hours:  
Please contact Prof. Keiko Nakamura at nakamura.ith@tmd.ac.jp

<b>Lecture No</b>	041207				
<b>Subject title</b>	Lecture of Rehabilitation Medicine			<b>Subject ID</b>	
<b>Instructors</b>	OKAWA ATSUSHI, SAKAI Tomoko, UKEGAWA Dai				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Rehabilitation training room					
<b>Course Purpose and Outline</b> To understand that rehabilitation medicine is a medical field mainly targeting disability, unlike traditional medical field centered on diseases and traumas. Evaluation methods peculiar to rehabilitation medicine should be understood as well. One of main themes is motion analysis in activities of daily living.					
<b>Course Objective(s)</b> To understand the contents of rehabilitation for disabilities due to cerebrovascular, musculoskeletal, and other diseases, and to find the tasks to be solved.					
<b>Lecture Style</b> Small classes					
<b>Course Outline</b> Analysis of disabilities using International Classification of Functioning, Disability and Health. Rehabilitation medicine including physical, occupational, and speech therapy. The method of 3-dimensional motion analysis in activities of daily living.					
<b>Grading System</b> Evaluation of understanding degree of the lecture Evaluation of the participation in the discussion, argument, and experiment practice and the degree of role and participation to the research conference					
<b>Prerequisite Reading</b> Basis knowledge of physical, occupational, and speech therapy should be acquired.					
<b>Reference Materials</b> Randall L. Braddom. Physical Medicine & Rehabilitation. Elsevier, 2011. Abo M et al. Saishin Rehabilitation Medicine. 3rd ed. Ishiyakushuppan, 2016. Reviews related to the research subjects.					
<b>Important Course Requirements</b> N/A					
<b>Email</b> OKAWA ATSUSHI:okawa.orth@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAWA ATSUSHI:Every Tuesday AM8:00-8:30 M&DTower south side Orthopaedics Professor's room					

<b>Lecture No</b>	041208				
<b>Subject title</b>	Practice of Rehabilitation Medicine	<b>Subject ID</b>			
<b>Instructors</b>	OKAWA ATSUSHI, SAKAI Tomoko, UKEGAWA Dai				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Rehabilitation training room					
<b>Course Purpose and Outline</b>					
To understand that rehabilitation medicine is a medical field mainly targeting disability, unlike traditional medical field centered on diseases and traumas. Evaluation methods peculiar to rehabilitation medicine should be understood as well. One of main themes is motion analysis in activities of daily living.					
<b>Course Objective(s)</b>					
To understand the contents of rehabilitation for disabilities due to cerebrovascular, musculoskeletal, and other diseases, and to find the tasks to be solved.					
<b>Lecture Style</b>					
Small classes					
<b>Course Outline</b>					
To understand the evaluation methods of disabilities and activities of daily living, and to use them for the clinical practice.					
<b>Grading System</b>					
Evaluation of understanding degree of the lecture					
Evaluation of the participation in the discussion, argument, and experiment practice and the degree of role and participation to the research conference					
<b>Prerequisite Reading</b>					
Basis knowledge of physical, occupational, and speech therapy should be acquired.					
<b>Reference Materials</b>					
Randall L. Braddom. Physical Medicine & Rehabilitation. Elsevier, 2011.					
Abo M et al. Saishin Rehabilitation Medicine. 3rd ed. Ishiyakushuppan, 2016.					
Reviews related to the research subjects.					
<b>Important Course Requirements</b>					
N/A					
<b>Email</b>					
OKAWA ATSUSHI:okawa.orth@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
OKAWA ATSUSHI:Every Tuesday AM8:00–8:30 M&DTower south side Orthopaedics Professor's room					

<b>Lecture No</b>	041209				
<b>Subject title</b>	Laboratory practice of Rehabilitation Medicine			<b>Subject ID</b>	
<b>Instructors</b>	OKAWA ATSUSHI, SAKAI Tomoko, UKEGAWA Dai				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Rehabilitation training room					
<b>Course Purpose and Outline</b> To understand that rehabilitation medicine is a medical field mainly targeting disability, unlike traditional medical field centered on diseases and traumas. Evaluation methods peculiar to rehabilitation medicine should be understood as well. One of main themes is motion analysis in activities of daily living.					
<b>Course Objective(s)</b> To understand the contents of rehabilitation for disabilities due to cerebrovascular, musculoskeletal, and other diseases, and to find the tasks to be solved.					
<b>Lecture Style</b> Small classes					
<b>Course Outline</b> Goals/Outline: The 3-dimensional motion analysis of gait and upper limb movement in activities of daily living.					
<b>Grading System</b> Evaluation of understanding degree of the lecture Evaluation of the participation in the discussion, argument, and experiment practice and the degree of role and participation to the research conference					
<b>Prerequisite Reading</b> Basis knowledge of physical, occupational, and speech therapy should be acquired.					
<b>Reference Materials</b> Randall L. Braddom. Physical Medicine & Rehabilitation. Elsevier, 2011. Abo M et al. Saishin Rehabilitation Medicine. 3rd ed. Ishiyakushuppan, 2016. Reviews related to the research subjects.					
<b>Important Course Requirements</b> N/A					
<b>Email</b> OKAWA ATSUSHI:okawa.orth@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAWA ATSUSHI:Every Tuesday AM8:00–8:30 M&DTower south side Orthopaedics Professor's room					



<b>Lecture No</b>	041210				
<b>Subject title</b>	Lecture of Gerodontology and Oral Rehabilitation			<b>Subject ID</b>	
<b>Instructors</b>	MINAKUCHI SHIYUNSUKE, TOHARA HARUKA, KUBOTA KAZUMASA, KANAZAWA MANABU, SATO YUSUKE, KOMAGAMINE YURIKO, NAKANE AYAKO, INOKOSHI MASANAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Differs depending on program; check with instructor before attending.					
<b>Course Purpose and Outline</b> Basic targets of study of this field are prevention and recovery of the oral function( mastication, swallowing and phonetic function) declining with aging.					
<b>Course Objective(s)</b> Understanding dental approach to make the oral function of the elderly convalescent. Understanding the role of the dental treatment in old society. Understanding the influence by which a occlusal reconstruction by prosthodontic treatment by dentures gives the body function.					
<b>Lecture Style</b> Small class size designated.					
<b>Course Outline</b> Goals/outline: The basic objective of research in this field is the prevention and restoration of decreased oral functions accompanying aging. Lectures are given in follow areas. 1) Dental approaches for restoring oral cavity functions in the elderly 2) Research relating to the role of dental treatment in an aging society 3) Functional and psychological problems of edentulous patients and complete denture treatment.					
<b>Grading System</b> Participation in class, seminar and practice will be graded comprehensively. In Lab, grading will be done based on contribution for the study group, reports and presentation at academic meetings.					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> Boucher's Prosthetic treatment for edentulous patients                      Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> In principle, class size is not limited.					

<b>Lecture No</b>	041211				
<b>Subject title</b>	Practice of Gerodontology and Oral Rehabilitation	<b>Subject ID</b>			
<b>Instructors</b>	MINAKUCHI SHIYUNSUKE, TOHARA HARUKA, KUBOTA KAZUMASA, KANAZAWA MANABU, SATO YUSUKE, KOMAGAMINE YURIKO, NAKANE AYAKO, INOKOSHI MASANAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Differs depending on program; check with instructor before attending.					
<b>Course Purpose and Outline</b> Basic targets of study of this field are prevention and recovery of the oral function( mastication, swallowing and phonetic function) declining with aging.					
<b>Course Objective(s)</b> Understanding dental approach to make the oral function of the elderly convalescent. Understanding the role of the dental treatment in old society. Understanding the influence by which a occlusal reconstruction by prosthodontic treatment by dentures gives the body function.					
<b>Lecture Style</b> Small class size designated.					
<b>Course Outline</b> Goals/Outline: Practice of actual dental treatment (including monitoring) on elderly individuals and fabricating complete dentures, taking impression, jaw relation records and aftercare for acquisition of skills.					
<b>Grading System</b> Participation in class, seminar and practice will be graded comprehensively. In Lab, grading will be done based on contribution for the study group, reports and presentation at academic meetings.					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> Boucher's Prosthetic treatment for edentulous patients                      Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> In principle, class size is not limited.					

<b>Lecture No</b>	041212				
<b>Subject title</b>	Laboratory practice of Gerodontology and Oral Rehabilitation	<b>Subject ID</b>			
<b>Instructors</b>	MINAKUCHI SHIYUNSUKE, TOHARA HARUKA, KUBOTA KAZUMASA, KANAZAWA MANABU, SATO YUSUKE, KOMAGAMINE YURIKO, NAKANE AYAKO, INOKOSHI MASANAO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Differs depending on program; check with instructor before attending.					
<b>Course Purpose and Outline</b> Basic targets of study of this field are prevention and recovery of the oral function( mastication, swallowing and phonetic function) declining with aging.					
<b>Course Objective(s)</b> Understanding dental approach to make the oral function of the elderly convalescent. Understanding the role of the dental treatment in old society. Understanding the influence by which a occlusal reconstruction by prosthodontic treatment by dentures gives the body function.					
<b>Lecture Style</b> Small class size designated.					
<b>Course Outline</b> Goals/Outline: A physical action produces aging change. Oral functions, such as mastication, tongue movement, and lips closing present functional decline with aging. We have to understand these an elderly patient's change, and have to develop and master the effective technique about evaluating a masticatory function, body activity and central function, and recovery technique by removable dentures.					
<b>Grading System</b> Participation in class, seminar and practice will be graded comprehensively. In Lab, grading will be done based on contribution for the study group, reports and presentation at academic meetings.					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> Boucher's Prosthetic treatment for edentulous patients Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> In principle, class size is not limited.					

<b>Lecture No</b>	041216				
<b>Subject title</b>	Lecture of Laboratory Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TODA SHUJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Lecture and practice: Laboratory (M&D tower, 10th floor, south) Tuesday 10:00-11:00					
<b>Course Purpose and Outline</b>					
To develop the ability of clinical reasoning based on laboratory data. To understand the development of novel laboratory tests.					
<b>Course Objective(s)</b>					
To understand the significance of laboratory tests in medicine.					
<b>Lecture Style</b>					
A small group tutorial					
<b>Course Outline</b>					
Application of laboratory medicine for clinical medicine will be lectured.					
<b>Grading System</b>					
Participation and performance are evaluated. Interview or reports will be also used for grading.					
<b>Prerequisite Reading</b>					
Read the textbooks in advance.					
<b>Reference Materials</b>					
1) Williams Hematology, 9th edition, 2015 2) Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Ask the contact person if you have questions.					
<b>Email</b>					
tohda.mlab@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every Tuesday AM.9:00-PM.19:00 M&D tower 10th floor south Professor room					

<b>Lecture No</b>	041217				
<b>Subject title</b>	Practice of Laboratory Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TODA SHUJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Lecture and practice: Laboratory (M&D tower, 10th floor, south) Tuesday 11:00–12:00					
<b>Course Purpose and Outline</b>					
To develop the ability of clinical reasoning based on laboratory data. To understand the development of novel laboratory tests.					
<b>Course Objective(s)</b>					
To understand the significance of laboratory tests in medicine.					
<b>Lecture Style</b>					
A small group tutorial					
<b>Course Outline</b>					
Significance of novel cellular and molecular laboratory tests will be discussed.					
<b>Grading System</b>					
Participation and performance are evaluated. Interview or reports will be also used for grading.					
<b>Prerequisite Reading</b>					
Read the textbook and/or paper designated.					
<b>Reference Materials</b>					
1) Williams Hematology, 9th edition, 2015 2) Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Ask the contact person if you have questions.					
<b>Email</b>					
tohda.mlab@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every Tuesday AM.9:00–PM.19:00 M&D tower 10th floor south Professor room					

<b>Lecture No</b>	041218				
<b>Subject title</b>	Laboratory practice of Laboratory Medicine			<b>Subject ID</b>	
<b>Instructors</b>	TODA SHUJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Lab: Clinical laboratory (University hospital, 3rd floor) , Practice room (No.3 building, 4th floor), or Laboratory (M&D tower, 10th floor, south) Wednesday 12:50–14:10, Thursday 15:50–17:10 (Dec. – Feb.)					
<b>Course Purpose and Outline</b>					
To observe blood and bone marrow smears from patients with hematological diseases.					
<b>Course Objective(s)</b>					
To interpret the morphological findings of cells on blood and bone marrow smears.					
<b>Lecture Style</b>					
A small group practice					
<b>Course Outline</b>					
Practice of hematological analysis based on morphological findings of blood smears and bone marrow smears will be held.					
<b>Grading System</b>					
Participation and performance are evaluated. Interview or reports will be also used for grading.					
<b>Prerequisite Reading</b>					
Read the textbook below.					
<b>Reference Materials</b>					
Williams Hematology, 9th edition, 2015 Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Ask the contact person if you have questions.					
<b>Email</b>					
tohda.mlab@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every Tuesday AM.9:00–PM.19:00 M&D tower 10th floor south Professor room					

<b>Lecture No</b>	041219				
<b>Subject title</b>	Lecture of Intensive Care Medicine I	<b>Subject ID</b>			
<b>Instructors</b>	SHIGEMITSU Hidenobu, WAKABAYASHI KENJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn cardiopulmonary physiology through learning the mechanisms of acute respiratory distress syndrome and septic shock. Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the mechanisms and treatment of acute respiratory distress syndrome (ARDS) and septic shock. Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/outline: ARDS and septic shock are important in the ICU with high mortality. The goal of the lecture series is to understand the mechanisms of ARDS and septic shock. We hope this helps you to understand how the current cutting-edge therapy has been developed based on translational research.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content. 1) attendance rate (lecture, seminar, practice): 80% 2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
Critical Care Medicine 2014; 42:e49, Frontiers in Immunology 2017; 8:128					
<b>Reference Materials</b>					
John B West, Andrew M Luks, West's Respiratory Physiology: The Essentials 10th edition, Wolters Kluwer					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					

<b>Lecture No</b>	041220				
<b>Subject title</b>	Practice of Intensive Care Medicine I	<b>Subject ID</b>			
<b>Instructors</b>	SHIGEMITSU Hidenobu, WAKABAYASHI KENJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn cardiopulmonary physiology through learning the mechanisms of acute respiratory distress syndrome and septic shock. Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the mechanisms and treatment of acute respiratory distress syndrome (ARDS) and septic shock. Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/Outline: Learn the mechanisms and diagnostic techniques of ARDS and septic shock. Supporting therapy for critically ill patients shall be taught at the bedside.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content. 1) attendance rate (lecture, seminar, practice): 80% 2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
Critical Care Medicine 2014; 42:e49, Frontiers in Immunology 2017; 8:128					
<b>Reference Materials</b>					
John B West, Andrew M Luks, West's Respiratory Physiology: The Essentials 10th edition, Wolters Kluwer					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					



<b>Lecture No</b>	041221				
<b>Subject title</b>	Laboratory practice of Intensive Care Medicine I			<b>Subject ID</b>	
<b>Instructors</b>	SHIGEMITSU Hidenobu, WAKABAYASHI KENJI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn cardiopulmonary physiology through learning the mechanisms of acute respiratory distress syndrome and septic shock. Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the mechanisms and treatment of acute respiratory distress syndrome (ARDS) and septic shock. Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/Outline: Analyze injured organs by physiological, immunological, and molecular biological techniques. We shall also discuss the potential significance of the results for treating/preventing organ injury in the ICU.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content.					
1) attendance rate (lecture, seminar, practice): 80%					
2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
Critical Care Medicine 2014; 42:e49, Frontiers in Immunology 2017; 8:128					
<b>Reference Materials</b>					
John B West, Andrew M Luks, West's Respiratory Physiology: The Essentials 10th edition, Wolters Kluwer					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					

<b>Lecture No</b>	041222				
<b>Subject title</b>	Lecture of Intensive Care Medicine II	<b>Subject ID</b>			
<b>Instructors</b>	SHIGEMITSU Hidenobu, NAGASHIMA Michio				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Nagashima for classes: most lectures/experiments will be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn the basic concept of Risk Management & Quality Management to accomplish an improvement of in-hospital mortality rate in the field of Critical care & emergency medicine.					
Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the framework of Rapid Response system for an unexpected emergent situation ,relationship between risk management & quality improvement.					
Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/outline:					
The goal of the lcture series is to get the basic concept and functions of Rapid Response System and practical methods to analyse work processes and system itself through the case analyses. We hope this helps you to understand how adverse events occure resulting into the increase of mortality and obtain some clues to improve the hospital system.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content.					
1) attendance rate (lecture, seminar, practice): 80%					
2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
WHO Patient Safety Curriculum Guide:Multi-professional Edition 2011					
Copyright World Health Organization2011					
DL: <a href="http://www.who.int/patientsafety/education/curriculum/en/">http://www.who.int/patientsafety/education/curriculum/en/</a>					
<b>Reference Materials</b>					
Textbook of Rapid Response Systems: Concept and Implementation					
2017 June/3rd version going to be published					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					

<b>Lecture No</b>	041223				
<b>Subject title</b>	Practice of Intensive Care Medicine II	<b>Subject ID</b>			
<b>Instructors</b>	SHIGEMITSU Hidenobu, NAGASHIMA Michio				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Nagashima for classes: most lectures/experiments will be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn the basic concept of Risk Management & Quality Management to accomplish an improvement of in-hospital mortality rate in the field of Critical care & emergency medicine.					
Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the framework of Rapid Response system for an unexpected emergent situation ,relationship between risk management & quality improvement.					
Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/Outline:					
Learn the basic Root Cause Analysis to determine the important factors & processes to fulfill Quality improvement is indispensable. Therefore, practical Root Cause Analysis using several analysis methods and techniques.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content.					
1) attendance rate (lecture, seminar, practice): 80%					
2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
WHO Patient Safety Curriculum Guide:Multi-professional Edition 2011					
Copyright World Health Organization2011					
DL: <a href="http://www.who.int/patientsafety/education/curriculum/en/">http://www.who.int/patientsafety/education/curriculum/en/</a>					
<b>Reference Materials</b>					
Textbook of Rapid Response Systems: Concept and Implementation					
2017 June/1 2nd version going to be published					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					

<b>Lecture No</b>	041224				
<b>Subject title</b>	Laboratory practice of Intensive Care Medicine II	<b>Subject ID</b>			
<b>Instructors</b>	SHIGEMITSU Hidenobu, NAGASHIMA Michio				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Please ask Dr Nagashima for classes: most lectures/experiments will be done at the 15th floor, MD tower.					
<b>Course Purpose and Outline</b>					
Learn the basic concept of Risk Management & Quality Management to accomplish an improvement of in-hospital mortality rate in the field of Critical care & emergency medicine.					
Learn and acquire techniques on how to conduct a clinical research.					
<b>Course Objective(s)</b>					
Understand the framework of Rapid Response system for an unexpected emergent situation ,relationship between risk management & quality improvement.					
Learn the process of designing/conducting clinical research and accomplish the goal to be an independent clinical researcher.					
<b>Lecture Style</b>					
Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.					
<b>Course Outline</b>					
Goals/Outline:					
Review all the death cases retrospectively and grasp the practical problems concerning the Patient Safety. Continue observing the current rapid response system and assess the effectiveness of this system in TMD. In order to improve the system, we are planning to do further assessment relating Patient & family satisfaction, effects on the multi-disciplinary medical staffs.					
<b>Grading System</b>					
General assessment is based on attendance rate and research content.					
1) attendance rate (lecture, seminar, practice): 80%					
2) presentation at academic conference and publication of research: 20%					
<b>Prerequisite Reading</b>					
WHO Patient Safety Curriculum Guide:Multi-professional Edition 2011					
Copyright World Health Organization 2011					
DL: <a href="http://www.who.int/patientsafety/education/curriculum/en/">http://www.who.int/patientsafety/education/curriculum/en/</a>					
<b>Reference Materials</b>					
Textbook of Rapid Response Systems: Concept and Implementation					
2017 June/1 2nd version going to be published					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
We accept up to 10 students for JC and research seminar, because of limited space and capacity.					

<b>Lecture No</b>	041225				
<b>Subject title</b>	Lecture of Liaison Psychiatry and Palliative Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Contact us for information.					
<b>Course Purpose and Outline</b> Understand the psychosocial issues in the general medical settings from a viewpoint of comprehensive medicine					
<b>Course Objective(s)</b> Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness					
<b>Lecture Style</b> Class sizes are kept small to facilitate student-teacher interaction and class discussion					
<b>Course Outline</b> Goals/Outline: The lectures would cover the broad area of consultation-liaison psychiatry including: <ul style="list-style-type: none"> <li>▪ Psychological problems and psychiatric symptoms in the general medical settings</li> <li>▪ Palliative care for patients with cancer</li> </ul>					
<b>Grading System</b> Grades will be based on participation, research work, presentation at academic conference and research paper publications.					
<b>Prerequisite Reading</b> Students are expected to preview the books on the required reading list.					
<b>Reference Materials</b> Psycho-Oncology 3rd edition (eds. Holland JC et al), Oxford University Press, New York, 2015. Handbook of Psychiatry in Palliative Medicine 2nd edition. (eds.Chochinov HM, Breitbart W), Oxford University Press, New York, 2009.					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> Journal club and case discussion will have less than 20 participants.					

<b>Lecture No</b>	041226				
<b>Subject title</b>	Practice of Liaison Psychiatry and Palliative Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Contact us for information.					
<b>Course Purpose and Outline</b> Understand the psychosocial issues in the general medical settings from a viewpoint of comprehensive medicine					
<b>Course Objective(s)</b> Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness					
<b>Lecture Style</b> Class sizes are kept small to facilitate student–teacher interaction and class discussion					
<b>Course Outline</b> Goals/Outline: <ul style="list-style-type: none"> <li>▪ Develop new methods for diagnosis, treatment and prevention of psychosomatic problem through case discussions</li> <li>▪ Learn and practice skills to develop assessments and design appropriate treatment plans for patients with various psychiatric disorders</li> </ul>					
<b>Grading System</b> Grades will be based on participation, research work, presentation at academic conference and research paper publications.					
<b>Prerequisite Reading</b> Students are expected to preview the books on the required reading list.					
<b>Reference Materials</b> Psycho–Oncology 3rd edition (eds. Holland JC et al), Oxford University Press, New York, 2015. Handbook of Psychiatry in Palliative Medicine 2nd edition. (eds.Chochinov HM, Breitbart W), Oxford University Press, New York, 2009.					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> Journal club and case discussion will have less than 20 participants.					

<b>Lecture No</b>	041227				
<b>Subject title</b>	Laboratory practice of Liaison Psychiatry and Palliative Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Contact us for information.					
<b>Course Purpose and Outline</b> Understand the psychosocial issues in the general medical settings from a viewpoint of comprehensive medicine					
<b>Course Objective(s)</b> Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness					
<b>Lecture Style</b> Class sizes are kept small to facilitate student–teacher interaction and class discussion					
<b>Course Outline</b> Goals/Outline: <ul style="list-style-type: none"> <li>▪ Our research projects are;</li> <li>▪ Intervention study on physically ill patients with psychiatric problem</li> <li>▪ Clinical–physiological research on psychiatric patients</li> <li>▪ Acquire up–to–date knowledge of scientific findings and practice specialized research techniques for these area</li> <li>▪ Apply these knowledge and techniques for further development of current research</li> </ul>					
<b>Grading System</b> Grades will be based on participation, research work, presentation at academic conference and research paper publications.					
<b>Prerequisite Reading</b> Students are expected to preview the books on the required reading list.					
<b>Reference Materials</b> Psycho–Oncology 3rd edition (eds. Holland JC et al), Oxford University Press, New York, 2015. Handbook of Psychiatry in Palliative Medicine 2nd edition. (eds.Chochinov HM, Breitbart W), Oxford University Press, New York, 2009.					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> Journal club and case discussion will have less than 20 participants.					

<b>Lecture No</b>	041228				
<b>Subject title</b>	Lecture of Pharmacokinetics and Pharmacodynamics	<b>Subject ID</b>			
<b>Instructors</b>	NAGATA MASASHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
To be asked to the instructor before registration.					
<b>Course Purpose and Outline</b>					
In order to understand the kinetics of drug action comprehensively, the updated knowledge about pharmacokinetics and pharmacodynamics will be lectured from the standpoint of interaction between drug molecules and the organ in the body.					
<b>Course Objective(s)</b>					
To predict the kinetics of drug action and to evaluate the drug-drug interactions, based on the mechanisms of drug absorption, distribution, metabolism and excretion					
<b>Lecture Style</b>					
The course is a small class and will have a discussion chance with registrants.					
<b>Course Outline</b>					
Goals/outline: An outline of the drug transport across the biomembrane and the drug disposition in the cell, organ and whole body will be reviewed and the recent advances on the effects of disease states and concurrent drugs on the pharmacokinetics of drugs will be discussed. In addition, the kinetic aspect of pharmacokinetic and pharmacodynamic analysis will be lectured.					
<b>Grading System</b>					
The degree of participation to the lecture, practice and laboratory work, as well as the presentation and comments in the course will be reviewed. In addition, the research content and the number of presentations at the academic meetings will be evaluated comprehensively.					
<b>Prerequisite Reading</b>					
Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.					
<b>Reference Materials</b>					
分子薬物動態学／杉山雄一, 楠原洋之編集 杉山, 雄一, 楠原, 洋之.: 南山堂, 2008 クリニカルファーマコメトリクス = Clinical Pharmacometrics／辻泰弘, 猪川和朗, 笠井英史 編集 辻, 泰弘, 猪川, 和朗, 笠井, 英史.: 南山堂, 2019 医薬品開発ツールとしての母集団 PK-PD 解析 : 入門からモデリング&シミュレーション／緒方宏泰 編 谷河賞彦, 塩見真理, 土綿慎一, 小松完爾 著 緒方, 宏泰, 1943-, 谷河, 賞彦, 塩見, 真理, 土綿, 慎一.: 朝倉書店, 2010					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mna-mpha@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Contact person: Masashi Nagata Mon-Fri 10:00-17:00					



<b>Lecture No</b>	041229				
<b>Subject title</b>	Practice of Pharmacokinetics and Pharmacodynamics	<b>Subject ID</b>			
<b>Instructors</b>	NAGATA MASASHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
To be asked to the instructor before registration.					
<b>Course Purpose and Outline</b>					
In order to understand the kinetics of drug action comprehensively, the updated knowledge about pharmacokinetics and pharmacodynamics will be lectured from the standpoint of interaction between drug molecules and the organ in the body.					
<b>Course Objective(s)</b>					
To predict the kinetics of drug action and to evaluate the drug–drug interactions, based on the mechanisms of drug absorption, distribution, metabolism and excretion					
<b>Lecture Style</b>					
The course is a small class and will have a discussion chance with registrants.					
<b>Course Outline</b>					
Goals/Outline: Recent literatures on the absorption, distribution, metabolism and excretion (pharmacokinetics) of drugs and related fields will be introduced and discussed. The practice of pharmacokinetic analysis based on the population approach or Bayesian method will be conducted.					
<b>Grading System</b>					
The degree of participation to the lecture, practice and laboratory work, as well as the presentation and comments in the course will be reviewed. In addition, the research content and the number of presentations at the academic meetings will be evaluated comprehensively.					
<b>Prerequisite Reading</b>					
Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.					
<b>Reference Materials</b>					
分子薬物動態学／杉山雄一, 楠原洋之編集, 杉山, 雄一, 楠原, 洋之.: 南山堂, 2008 クリニカルファーマコメトリクス = Clinical Pharmacometrics／辻泰弘, 猪川和朗, 笠井英史 編集, 辻, 泰弘, 猪川, 和朗, 笠井, 英史.: 南山堂, 2019 医薬品開発ツールとしての母集団 PK-PD 解析 : 入門からモデリング&シミュレーション／緒方宏泰 編, 谷河賞彦, 塩見真理, 土綿慎一, 小松完爾 著, 緒方, 宏泰, 1943-, 谷河, 賞彦, 塩見, 真理, 土綿, 慎一.: 朝倉書店, 2010					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mna-mpha@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Contact person: Masashi Nagata Mon–Fri 10:00–17:00					

<b>Lecture No</b>	041230				
<b>Subject title</b>	Laboratory practice of Pharmacokinetics and Pharmacodynamics	<b>Subject ID</b>			
<b>Instructors</b>	NAGATA MASASHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
To be asked to the instructor before registration.					
<b>Course Purpose and Outline</b>					
In order to understand the kinetics of drug action comprehensively, the updated knowledge about pharmacokinetics and pharmacodynamics will be lectured from the standpoint of interaction between drug molecules and the organ in the body.					
<b>Course Objective(s)</b>					
To predict the kinetics of drug action and to evaluate the drug–drug interactions, based on the mechanisms of drug absorption, distribution, metabolism and excretion					
<b>Lecture Style</b>					
The course is a small class and will have a discussion chance with registrants.					
<b>Course Outline</b>					
Goals/Outline: Fundamental experimental techniques such as drug concentration measurement, drug effect evaluation and kinetic analysis will be practiced and applied to the development of the individual dosage adjustment based on the drug concentration monitoring for individual patients.					
<b>Grading System</b>					
The degree of participation to the lecture, practice and laboratory work, as well as the presentation and comments in the course will be reviewed. In addition, the research content and the number of presentations at the academic meetings will be evaluated comprehensively.					
<b>Prerequisite Reading</b>					
Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.					
<b>Reference Materials</b>					
分子薬物動態学／杉山雄一, 楠原洋之編集, 杉山, 雄一, 楠原, 洋之.: 南山堂, 2008 クリニカルファーマコメトリクス = Clinical Pharmacometrics／辻泰弘, 猪川和朗, 笠井英史 編集, 辻, 泰弘, 猪川, 和朗, 笠井, 英史.: 南山堂, 2019 医薬品開発ツールとしての母集団 PK-PD 解析 : 入門からモデリング&シミュレーション／緒方宏泰 編, 谷河賞彦, 塩見真理, 土綿慎一, 小松完爾 著, 緒方, 宏泰, 1943-, 谷河, 賞彦, 塩見, 真理, 土綿, 慎一.: 朝倉書店, 2010					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mna-mpha@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Contact person: Masashi Nagata Mon–Fri 10:00–17:00					

<b>Lecture No</b>	041231				
<b>Subject title</b>	Lecture of Medical Education Research and Development			<b>Subject ID</b>	
<b>Instructors</b>	OKADA ERIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Seminar Room (N-1601)					
<b>Course Purpose and Outline</b> To learn theory and the methods of the latest medical education and try to present the solutions for problems about clinical education.					
<b>Course Objective(s)</b> <ul style="list-style-type: none"> <li>·Analyze medical and/or social issues about medical education.</li> <li>·Understand theory and practice of medical education.</li> <li>·Conduct research of medical education.</li> </ul>					
<b>Lecture Style</b> Small-group class					
<b>Course Outline</b> Goals/outline: We address many problems about clinical education and discuss several approaches to their solutions. These problems have not yet been given a theoretical framework in order to examine various social elements closely related to them. Our aim is to construct an educational theory that can deal with practical difficulties and to propose possible solutions.					
<b>Grading System</b> Combination of attendance, participation in discussion, and assignments					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> <p>医学教育の理論と実践／John A. Dent, Ronald M. Harden 編著；鈴木康之, 錦織宏監訳；相野田紀子 [ほか] 編Dent, John A.,Harden, Ronald M,鈴木, 康之,錦織, 宏,相野田, 紀子,:篠原出版新社, 2010</p> <p>医学教育白書／日本医学教育学会 監修,日本医学教育学会学会広報・情報基盤委員会 編集,日本医学教育学会,:篠原出版新社, 2018</p> <p>Dent JA, Harden RM, eds. A Practical Guide For Medical Teachers. Churchill Livingstone.</p> <p>Cantillon P, Wood D, eds. ABC of Learning and Teaching in Medicine. Wiley-Blackwell.</p>					
<b>Relationship With Other Subjects</b> None					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> OKADA ERIKO:nawa.ioe@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKADA ERIKO:Nobutoshi NAWA					

<b>Lecture No</b>	041232				
<b>Subject title</b>	Practice of Medical Education Research and Development	<b>Subject ID</b>			
<b>Instructors</b>	OKADA ERIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Seminar Room (N-1601)					
<b>Course Purpose and Outline</b> To learn theory and the methods of the latest medical education and try to present the solutions for problems about clinical education.					
<b>Course Objective(s)</b> <ul style="list-style-type: none"> <li>·Analyze medical and/or social issues about medical education.</li> <li>·Understand theory and practice of medical education.</li> <li>·Conduct research of medical education.</li> </ul>					
<b>Lecture Style</b> Small-group class					
<b>Course Outline</b> Goals/Outline: We pick out a problem based on a real case, consider a solution based on any applicable theory, and simulate for evaluation methods for the proposed solution.					
<b>Grading System</b> Combination of attendance, participation in discussion, and assignments					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> Dent JA, Harden RM, eds. A Practical Guide For Medical Teachers. Churchill Livingstone. Cantillon P, Wood D, eds. ABC of Learning and Teaching in Medicine. Wiley-Blackwell.					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> OKADA ERIKO:nawa.ioe@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKADA ERIKO:Nobutoshi NAWA					

<b>Lecture No</b>	041233				
<b>Subject title</b>	Laboratory practice of Medical Education Research and Development	<b>Subject ID</b>			
<b>Instructors</b>	OKADA ERIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Seminar Room (N-1601)					
<b>Course Purpose and Outline</b> To learn theory and the methods of the latest medical education and try to present the solutions for problems about clinical education.					
<b>Course Objective(s)</b> <ul style="list-style-type: none"> <li>·Analyze medical and/or social issues about medical education.</li> <li>·Understand theory and practice of medical education.</li> <li>·Conduct research of medical education.</li> </ul>					
<b>Lecture Style</b> Small-group class					
<b>Course Outline</b> Goals/Outline: Students are expected to master skills necessary for research and development of the medical education by participating in a research group.					
<b>Grading System</b> Combination of attendance, participation in discussion, and assignments					
<b>Prerequisite Reading</b> None					
<b>Reference Materials</b> Dent JA, Harden RM, eds. A Practical Guide For Medical Teachers. Churchill Livingstone. Cantillon P, Wood D, eds. ABC of Learning and Teaching in Medicine. Wiley-Blackwell.					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> OKADA ERIKO:nawa.ioe@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKADA ERIKO:Nobutoshi NAWA					

<b>Lecture No</b>	041234				
<b>Subject title</b>	Lecture of Acute Critical Care and Disaster Medicine	<b>Subject ID</b>			
<b>Instructors</b>	OTOMO YASUHIRO, KAJI MASAHITO, AIBOSHI JUNICHI, MORISHITA Kouji, MORI Shuusuke, ENDO Akira, SEKIYA Kousuke, EGASHIRA RYUICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures are performed at hospital ward on the first basement. Animal testing is held at 11th floor on the M&D tower.					
<b>Course Purpose and Outline</b>					
The research projects interrogate the mechanisms of the human response to acute shock and trauma. There are research projects about clinical and basic research of trauma management and epidemiology, shock, sepsis, and disaster medicine. Students will be assigned to each study teams.					
<b>Course Objective(s)</b>					
We focus on promoting further research in the field of trauma, emergency medicine, disaster medicine, and intensive care medicine. Our goal is to elucidate the medical questions of these topics.					
<b>Lecture Style</b>					
Lectures are performed individually.					
<b>Course Outline</b>					
Goals/outline: Our mission is to understand biological human body reactions to life-threatening events and to develop a strategy for regulation the response. Clinical and basic research about trauma as well as the epidemiology and prophylaxis of trauma and disaster medicine are performed. We aim to train researchers as a specialist for the field of trauma and acute critical care and disaster medicine who is able to join the Government science research.					
<b>Grading System</b>					
Students will be graded by their participation to Lectures, Practice and Lab; 80% by the quality of publication and presentation of their study results; 20%					
<b>Prerequisite Reading</b>					
no need for it					
<b>Reference Materials</b>					
Texts are prepared individually.					
<b>Important Course Requirements</b>					
Not especially					

<b>Lecture No</b>	041235				
<b>Subject title</b>	Practice of Acute Critical Care and Disaster Medicine	<b>Subject ID</b>			
<b>Instructors</b>	OTOMO YASUHIRO, KAJI MASAHITO, AIBOSHI JUNICHI, MORISHITA Kouji, MORI Shuusuke, ENDO Akira, SEKIYA Kousuke, EGASHIRA RYUICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures are performed at hospital ward on the first basement. Animal testing is held at 11th floor on the M&D tower.					
<b>Course Purpose and Outline</b>					
The research projects interrogate the mechanisms of the human response to acute shock and trauma. There are research projects about clinical and basic research of trauma management and epidemiology, shock, sepsis, and disaster medicine. Students will be assigned to each study teams.					
<b>Course Objective(s)</b>					
We focus on promoting further research in the field of trauma, emergency medicine, disaster medicine, and intensive care medicine. Our goal is to elucidate the medical questions of these topics.					
<b>Lecture Style</b>					
Lectures are performed individually.					
<b>Course Outline</b>					
Goals/Outline: We carry out cutting-edge treatments and develop new therapeutics, through severe emergency critical care viewpoints, aiming at revealing pathology of body reaction to the variety of stimuli.					
<b>Grading System</b>					
Students will be graded by their participation to Lectures, Practice and Lab; 80% by the quality of publication and presentation of their study results; 20%					
<b>Prerequisite Reading</b>					
no need for it					
<b>Reference Materials</b>					
Texts are prepared individually.					
<b>Important Course Requirements</b>					
Not especially					

<b>Lecture No</b>	041236				
<b>Subject title</b>	Laboratory practice of Acute Critical Care and Disaster Medicine	<b>Subject ID</b>			
<b>Instructors</b>	OTOMO YASUHIRO, KAJI MASAHITO, AIBOSHI JUNICHI, MORISHITA Kouji, MORI Shuusuke, ENDO Akira, SEKIYA Kousuke, EGASHIRA RYUICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures are performed at hospital ward on the first basement. Animal testing is held at 11th floor on the M&D tower.					
<b>Course Purpose and Outline</b>					
The research projects interrogate the mechanisms of the human response to acute shock and trauma. There are research projects about clinical and basic research of trauma management and epidemiology, shock, sepsis, and disaster medicine. Students will be assigned to each study teams.					
<b>Course Objective(s)</b>					
We focus on promoting further research in the field of trauma, emergency medicine, disaster medicine, and intensive care medicine. Our goal is to elucidate the medical questions of these topics.					
<b>Lecture Style</b>					
Lectures are performed individually.					
<b>Course Outline</b>					
Goals/Outline: Our goal is to elucidate the mechanism of inflammation caused by severe insult such as trauma hemorrhagic shock and septic shock. Our research interest is especially the understanding for mechanistic link between lipid mediators and inflammatory signaling pathway.					
<b>Grading System</b>					
Students will be graded by their participation to Lectures, Practice and Lab; 80% by the quality of publication and presentation of their study results; 20%					
<b>Prerequisite Reading</b>					
no need for it					
<b>Reference Materials</b>					
Texts are prepared individually.					
<b>Important Course Requirements</b>					
Not especially					



<b>Lecture No</b>	041237				
<b>Subject title</b>	Lecture of Clinical Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIYAKE SATOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> To be announced.					
<b>Course Purpose and Outline</b> To overview the field of clinical oncology and acquire the systematic knowledge for palliative medicine and medical oncology.					
<b>Course Objective(s)</b> ① To acquire the knowledge of comprehensive oncology and the skill for explain to the others. ② To facilitate the discussion in the field of multi-disciplinary collaboration. ③ To acquire the method to improve patients' QOL.					
<b>Lecture Style</b> Class sizes are kept small to facilitate discussion and communication.					
<b>Course Outline</b> Goals/outline: ① To understand comprehensive oncology. ② To have an up-to-date knowledge of palliative medicine and cancer chemotherapy.					
<b>Grading System</b> Grades are dependent on attendance, research work, presentation at academic meeting and publications.					
<b>Prerequisite Reading</b> To be announced.					
<b>Reference Materials</b> Oxford Textbook of Palliative Medicine					
<b>Important Course Requirements</b> To be announced.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> sm.conc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday to Friday PM2:00-PM5:00					

<b>Lecture No</b>	041238				
<b>Subject title</b>	Practice of Clinical Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIYAKE SATOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> To be announced.					
<b>Course Purpose and Outline</b> To overview the field of clinical oncology and acquire the systematic knowledge for palliative medicine and medical oncology.					
<b>Course Objective(s)</b> ①To acquire the knowledge of comprehensive oncology and the skill for explain to the others. ②To facilitate the discussion in the field of multi-disciplinary collaboration. ③To acquire the method to improve patients' QOL.					
<b>Lecture Style</b> Class sizes are kept small to facilitate discussion and communication.					
<b>Course Outline</b> Goals/outline: ① To develop skills for communication and team approach. (Palliative Care Team) ② To develop skills in terms of assessment and management of various cancer symptoms.					
<b>Grading System</b> Grades are dependent on attendance, research work, presentation at academic meeting and publications.					
<b>Prerequisite Reading</b> To be announced.					
<b>Reference Materials</b> Oxford Textbook of Palliative Medicine					
<b>Important Course Requirements</b> To be announced.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> sm.conc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday to Friday PM2:00-PM5:00					

<b>Lecture No</b>	041239				
<b>Subject title</b>	Laboratory practice of Clinical Oncology	<b>Subject ID</b>			
<b>Instructors</b>	MIYAKE SATOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> To be announced.					
<b>Course Purpose and Outline</b> To overview the field of clinical oncology and acquire the systematic knowledge for palliative medicine and medical oncology.					
<b>Course Objective(s)</b> ①To acquire the knowledge of comprehensive oncology and the skill for explain to the others. ②To facilitate the discussion in the field of multi-disciplinary collaboration. ③To acquire the method to improve patients' QOL.					
<b>Lecture Style</b> Class sizes are kept small to facilitate discussion and communication.					
<b>Course Outline</b> Goals/outline: To have an knowledge of scientific findings and practice specialized research techniques for this area.					
<b>Grading System</b> Grades are dependent on attendance, research work, presentation at academic meeting and publications.					
<b>Prerequisite Reading</b> To be announced.					
<b>Reference Materials</b> Oxford Textbook of Palliative Medicine					
<b>Important Course Requirements</b> To be announced.					
<b>Note(s) to Students</b> Not in particular.					
<b>Email</b> sm.conc@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday to Friday PM2:00-PM5:00					

<b>Lecture No</b>	041243				
<b>Subject title</b>	Lecture of General Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	NITSUTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Course Purpose and Outline</b>					
To practice patient-centered, holistic medical care, current dentistry is specialized in various research and educational areas, but dentists complete their duties as General Practitioners. To do so, it is necessary to acquire knowledge and skills that integrate those areas, and to be able to properly apply and practice individual patients. Learn approaches for comprehensive, holistic dental practice.					
<b>Course Objective(s)</b>					
Understand the importance of the patient's psychosocial background and behavioral science factors, as well as the knowledge and skills required for dental care in the practice of holistic medical care.					
<b>Lecture Style</b>					
In principle, the number of participants will be small, and discussions will be provided as much as possible.					
<b>Course Outline</b>					
Acquire knowledge of the application of behavioral science in medicine to practice desirable holistic medicine. Participation programs Graduate school lectures as needed Special lectures at graduate schools(planned or recommended by this department) Oral Dagnosis and General Dentistry seminars (Specific Monday 17:15-18:15) Seminars for postgraduate dental trainee (every Friday 15:15-16:45)					
<b>Grading System</b>					
Comprehensive evaluation based on lectures, exercises, participation in research training, and research content. Evaluate based on research reports or conference presentations.					
<b>Prerequisite Reading</b>					
Prepare for the specified chapters and items in the following reference books.					
<b>Reference Materials</b>					
PMI ペリオドンタルモチベーションショナルインタビューング：患者さんのやる気が変わる！ スタッフも楽しくなる！ 歯周治療を成功に導く世界標準のコミュニケーション技法／新田 浩 著・文・その他新田 浩 監修、礪波健一 著・文・その他礪波健一 監修、土岡弘明 著・文・その他、土岡弘明 監修、齋田寛之 著・文・その他、酒井和人 著・文・その他、関根 聡 著・文・その他、竹内祥吾 著・文・その他、武田浩平 著・文・その他、中村一寿 著・文・その他、奈良嘉峰 著・文・その他、福場駿介 著・文・その他、新田 浩、礪波健一、土岡弘明、齋田寛之、酒井和人、関根 聡、竹内祥吾、武田浩平、中村一寿、奈良嘉峰、福場駿介、クインテッセンス出版、2020-02-10 Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell					
<b>Important Course Requirements</b>					
The date and time of each program may change, so be sure to check before attending.					
<b>Note(s) to Students</b>					
Contact information: Oral Dagnosis and General Dentistry Hiroshi Nitta E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041244				
<b>Subject title</b>	Practice of General Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	NITSUTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Course Purpose and Outline</b>					
To practice patient-centered, holistic medical care, current dentistry is specialized in various research and educational areas, but dentists complete their duties as General Practitioners.					
To do so, it is necessary to acquire knowledge and skills that integrate those areas, and to be able to properly apply and practice individual patients. Learn approaches for comprehensive, holistic dental practice.					
<b>Course Objective(s)</b>					
Understand the importance of the patient's psychosocial background and behavioral science factors, as well as the knowledge and skills required for dental care in the practice of holistic medical care.					
<b>Lecture Style</b>					
In principle, the number of participants will be small, and discussions will be provided as much as possible.					
<b>Course Outline</b>					
Acquire knowledge of the application of behavioral science in medicine to practice desirable holistic medicine.					
Participation programs					
Graduate school lectures as needed					
Special lectures at graduate schools(planned or recommended by this department)					
Oral Dagnosis and General Dentistry seminars (Specific Monday 17:15-18:15)					
Seminars for postgraduate dental trainee (every Friday 15:15-16:45)					
<b>Grading System</b>					
Comprehensive evaluation based on lectures, exercises, participation in research training, and research content.					
Evaluate based on research reports or conference presentations.					
<b>Prerequisite Reading</b>					
Prepare for the specified chapters and items in the following reference books.					
<b>Reference Materials</b>					
PMI ペリオドンタルモチベーションショナルインタビューング：患者さんのやる気が変わる！ スタッフも楽しくなる！ 歯周治療を成功に導く世界標準のコミュニケーション技法／新田 浩 著・文・その他新田 浩 監修、礪波健一 著・文・その他礪波健一 監修、土岡弘明 著・文・その他、土岡弘明 監修、齋田寛之 著・文・その他、酒井和人 著・文・その他、関根 聡 著・文・その他、竹内祥吾 著・文・その他、武田浩平 著・文・その他、中村一寿 著・文・その他、奈良嘉峰 著・文・その他、福場駿介 著・文・その他、新田 浩、礪波健一、土岡弘明、齋田寛之、酒井和人、関根 聡、竹内祥吾、武田浩平、中村一寿、奈良嘉峰、福場駿介、クインテッセンス出版、2020-02-10					
Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell					
<b>Important Course Requirements</b>					
The date and time of each program may change, so be sure to check before attending.					
<b>Note(s) to Students</b>					
Contact information: Oral Dagnosis and General Dentistry Hiroshi Nitta					
E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041245				
<b>Subject title</b>	Laboratory practice of General Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	NITSUTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Course Purpose and Outline</b>					
To practice patient-centered, holistic medical care, current dentistry is specialized in various research and educational areas, but dentists complete their duties as General Practitioners. To do so, it is necessary to acquire knowledge and skills that integrate those areas, and to be able to properly apply and practice individual patients. Learn approaches for comprehensive, holistic dental practice.					
<b>Course Objective(s)</b>					
Understand the importance of the patient's psychosocial background and behavioral science factors, as well as the knowledge and skills required for dental care in the practice of holistic medical care.					
<b>Lecture Style</b>					
In principle, the number of participants will be small, and discussions will be provided as much as possible.					
<b>Course Outline</b>					
Acquire knowledge of the application of behavioral science in medicine to practice desirable holistic medicine. Participation programs Graduate school lectures as needed Special lectures at graduate schools(planned or recommended by this department) Oral Dagnosis and General Dentistry seminars (Specific Monday 17:15-18:15) Seminars for postgraduate dental trainee (every Friday 15:15-16:45)					
<b>Grading System</b>					
Comprehensive evaluation based on lectures, exercises, participation in research training, and research content. Evaluate based on research reports or conference presentations.					
<b>Prerequisite Reading</b>					
Prepare for the specified chapters and items in the following reference books.					
<b>Reference Materials</b>					
PMI ペリオドンタルモチベーションインタビューング：患者さんのやる気が変わる！ スタッフも楽しくなる！ 歯周治療を成功に導く世界標準のコミュニケーション技法／新田 浩 著・文・その他新田 浩 監修、礪波健一 著・文・その他礪波健一 監修、土岡弘明 著・文・その他、土岡弘明 監修、齋田寛之 著・文・その他、酒井和人 著・文・その他、関根 聡 著・文・その他、竹内祥吾 著・文・その他、武田浩平 著・文・その他、中村一寿 著・文・その他、奈良嘉峰 著・文・その他、福場駿介 著・文・その他、新田 浩、礪波健一、土岡弘明、齋田寛之、酒井和人、関根 聡、竹内祥吾、武田浩平、中村一寿、奈良嘉峰、福場駿介、：クインテッセンス出版、2020-02-10 Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell					
<b>Important Course Requirements</b>					
The date and time of each program may change, so be sure to check before attending.					
<b>Note(s) to Students</b>					
Contact information: Oral Dagnosis and General Dentistry Hiroshi Nitta E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041246				
<b>Subject title</b>	Lecture of Psychosomatic Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	TOYOFUKU AKIRA, TAKENOSHITA MIHO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Contact to the teachers before lecture					
<b>Course Purpose and Outline</b>					
"From brain to dentistry" is a goal of our Psychosomatic Dentistry. We are searching for the pathophysiology of medically unexplained oral symptoms based on clinical researches. We also give importance to acquiring psychosomatic skills which really useful in real clinical situations.					
<b>Course Objective(s)</b>					
A. Understanding on Medically unexplained oral symptoms B. Learning on differential diagnosis(eg. psychiatric disorders, some neurological diseases.)					
<b>Lecture Style</b>					
Lectures including small group discussions					
<b>Course Outline</b>					
1.Clinical needs for psychosomatic dentistry both patients and dentists 2.Compounded process in dentist-patient relationship 3.How to manage "difficult patients" 4. Research for pathophysiology of MUOS(based on psychopharmacology, brain imaging,etc.) 5. Developing new therapeutic strategies for MUOS					
<b>Grading System</b>					
Assessment based on participation in lectures, learning levels of clinical skills(total 60%), conference presentation, publication of research papers etc.(total40%)					
<b>Prerequisite Reading</b>					
Make good preparations before lectures to confirm the baseline knowledge(We will show some literature as homework)					
<b>Reference Materials</b>					
5分でできる明るい歯科心身医学／豊福明, 吉川達也著,豊福 明,吉川, 達也(歯科医).:永末書店, 2017 予測して防ぐ抗精神病薬の「身体副作用」: Beyond dopamine antagonism／長嶺敬彦 著,長嶺 敬彦.:医学書院, 2009 ヒーリー精神科治療薬ガイド／デイヴィッド・ヒーリー [著]; 冬樹純子訳,Healy, David, MRC Psych,冬樹, 純子,田島, 治,江口, 重幸.:みすず書房, 2009					
<b>Reference URL</b>					
<a href="https://atoyofpsd2.wixsite.com/home">https://atoyofpsd2.wixsite.com/home</a>					
<a href="http://www.tmd.ac.jp/grad/ompm/ompm-J.htm">http://www.tmd.ac.jp/grad/ompm/ompm-J.htm</a>					
<b>Email</b>					
TOYOFUKU AKIRA:toyoompm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TOYOFUKU AKIRA:every Tuesday 16:30- 18:00 Build.10 2F Room 209					

<b>Lecture No</b>	041247				
<b>Subject title</b>	Practice of Psychosomatic Dentistry	<b>Subject ID</b>			
<b>Instructors</b>	TOYOFUKU AKIRA, TAKENOSHITA MIHO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Contact the teachers before lectures					
<b>Course Purpose and Outline</b>					
“From brain to dentistry” is a goal of our Psychosomatic Dentistry. We are searching for the pathophysiology of medically unexplained oral symptoms based on clinical researches. We also give importance to acquiring psychosomatic skills which really useful in real clinical situations.					
<b>Course Objective(s)</b>					
A. Understanding on Medically unexplained oral symptoms B. Learning on differential diagnosis(eg. psychiatric disorders, some neurological diseases.)					
<b>Lecture Style</b>					
Lectures including small group discussions					
<b>Course Outline</b>					
1.Clinical needs for psychosomatic dentistry both patients and dentists 2.Compounded process in dentist–patient relationship 3.How to manage “difficult patients” 4. Research for pathophysiology of MUOS(based on psychopharmacology, brain imaging,etc.) 5. Developing new therapeutic strategies for MUOS					
<b>Grading System</b>					
Assessment based on participation in lectures, learning levels of clinical skills(total 60%), conference presentation, publication of research papers etc.(total40%)					
<b>Prerequisite Reading</b>					
Make good preparations before lectures to confirm the baseline knowledge(We will show some literature as homework)					
<b>TextBook</b>					
5分のできる明るい歯科心身医学／豊福明, 吉川達也著,豊福 明,吉川 達也(歯科医):永末書店, 2017 予測して防ぐ抗精神病薬の「身体副作用」: Beyond dopamine antagonism／長嶺敬彦 著,長嶺 敬彦.: 医学書院, 2009					
<b>Reference URL</b>					
<a href="https://atoyofpsd2.wixsite.com/home">https://atoyofpsd2.wixsite.com/home</a>					
<a href="http://www.tmd.ac.jp/grad/ompm/ompm-J.htm">http://www.tmd.ac.jp/grad/ompm/ompm-J.htm</a>					
<b>Email</b>					
TOYOFUKU AKIRA:toyoompm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TOYOFUKU AKIRA:every Tuesday 16:30– 18:00 Build.10 2F Room 209					



<b>Lecture No</b>	041248				
<b>Subject title</b>	Laboratory practice of Psychosomatic Dentistry			<b>Subject ID</b>	
<b>Instructors</b>	TOYOFUKU AKIRA, TAKENOSHITA MIHO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English					
<b>Lecture place</b>					
Contact the teachers before lectures					
<b>Course Purpose and Outline</b>					
“From brain to dentistry” is a goal of our Psychosomatic Dentistry. We are searching for the pathophysiology of medically unexplained oral symptoms based on clinical researches. We also give importance to acquiring psychosomatic skills which really useful in real clinical situations.					
<b>Course Objective(s)</b>					
A. Understanding on Medically unexplained oral symptoms B. Learning on differential diagnosis(eg. psychiatric disorders, some neurological diseases.)					
<b>Lecture Style</b>					
Lectures including small group discussions					
<b>Course Outline</b>					
1.Clinical needs for psychosomatic dentistry both patients and dentists 2.Compounded process in dentist–patient relationship 3.How to manage “difficult patients” 4. Research for pathophysiology of MUOS(based on psychopharmacology, brain imaging,etc.) 5. Developing new therapeutic strategies for MUOS					
<b>Grading System</b>					
Assessment based on participation in lectures, learning levels of clinical skills(total 30%), conference presentation, publication of research papers etc.(total70%)					
<b>Prerequisite Reading</b>					
Make good preparations before lectures to confirm the baseline knowledge(We will show some literature as homework)					
<b>Reference Materials</b>					
5分のできる明るい歯科心身医学／豊福明, 吉川達也著,豊福, 明,吉川, 達也(歯科医):永末書店, 2017					
<b>Reference URL</b>					
<a href="https://atoyofpsd2.wixsite.com/home">https://atoyofpsd2.wixsite.com/home</a>					
<a href="http://www.tmd.ac.jp/grad/ompm/ompm-J.htm">http://www.tmd.ac.jp/grad/ompm/ompm-J.htm</a>					
<b>Email</b>					
TOYOFUKU AKIRA:toyoompm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TOYOFUKU AKIRA:every Tuesday 16:30– 18:00 Build.10 2F Room 209					

<b>Lecture No</b>	041249				
<b>Subject title</b>	Lecture of Behavioral Dentistry	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					
<b>Note(s) to Students</b>					
Contact information: Oral Daignosis and General Dentistry Hiroshi Nitta E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041250				
<b>Subject title</b>	Practice of Behavioral Dentistry	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>Note(s) to Students</b>					
Contact information: Oral Dagnosis and General Dentistry Hiroshi Nitta E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041251				
<b>Subject title</b>	Laboratory practice of Behavioral Dentistry	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					
<b>Note(s) to Students</b>					
Contact information: Oral Daignosis and General Dentistry Hiroshi Nitta E-mail: nitta.behd@tmd.ac.jp					

<b>Lecture No</b>	041252				
<b>Subject title</b>	Lecture of Professional Development in Health Sciences	<b>Subject ID</b>			
<b>Instructors</b>	TAKADA KAZUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b> All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West					
<b>Course Purpose and Outline</b>					
<p>While age-associated physiological changes, increased numbers of comorbid systemic conditions, and an issue of polypharmacy all jeopardize oral hygiene status of the elderly, periodontal diseases, which result from decreased oral hygiene status, predispose to and aggravate diabetes and cardiovascular diseases. In addition, the advancement in medical and dental sciences have blurred boundary between medical and dental care. Therefore, the aging society in the 21st century requires coordinated and collaborative care between medical, dental, and other health professionals. Furthermore, the advancement in information technology and rapidly increasing human mobility continue to blur boundary between countries or states. Education and professional development for health professionals need to continue to evolve as well as to adjust to such concurrent societal needs. Coursework that students engage aim to produce leaders in health professional education who could understand curriculum development and learning methods by drawing on key pedagogical theories and learning methods and by using a process-based approach and outcome logic models.</p>					
<b>Course Objective(s)</b>					
At the end of the course, students will be able to:					
<ol style="list-style-type: none"> <li>1) Describe the history, legality, and entire scheme (from undergraduate and graduate education and to continued professional development) of medical and dental education in Japan</li> <li>2) Describe systems, accreditation, and quality control measures for health professional development in Japan and other countries</li> <li>3) Describe key educational theories and learning methodologies which draw on those theories</li> <li>4) Describe a process-based approach and an outcome logic model in planning and running curriculum</li> </ol>					
<b>Lecture Style</b>					
Students' learning activities include participation to lectures, various activities, project work, and research. Lectures are bidirectional and student-centered, and students are expected to come well-read and prepared and to participate actively. Program is organized based on the experiential learning theory by David Kolb, incorporating components of reflective observation, abstract conceptualization, active experimentation, and concrete experience.					
<b>Course Outline</b>					
Goals/outline: Lectures are bidirectional, are student-centered, and provide opportunities for learners to acquire "comprehension" -level knowledge (Bloom's taxonomy) of the followings: history of medical and dental education in Japan, professional education/development/certification in Japan and North American/European countries, key pedagogical theories and learning methods, process-based approach and logic models in curriculum development, and competencies and their assessment/evaluation.					
<b>Grading System</b>					
Students will be graded based on their active participation to class and submitted report.					
<b>Prerequisite Reading</b>					
Come to class prepared and ready to participate actively, by reading assigned texts and other required materials carefully and comprehensively before the class session. Participate in class through active listening, taking notes, asking questions, taking part in discussions, engaging your mind on the topic matter, and respecting other people's viewpoints. Always raise your hand before sharing something with the class. Students who do not participate in class discussions or who do not ask questions may be believed to be unprepared for class. Study outside of class by reviewing course notes after each class session and studying in small groups with classmates.					
<b>Reference Materials</b>					
<ol style="list-style-type: none"> <li>1) Understanding Medical Education: Evidence, Theory and Practice: Tim Swanwick, Wiley-Blackwell, 2010</li> <li>2) Curriculum Development for Medical Education: A Six-Step Approach: David E. Kern, Patricia A. Thomas, Mark T. Hughes, The Johns</li> </ol>					

Hopkins University Press, 2010

3) Professionalism in Medicine: A Case-Based Guide for Medical Students: John Spandorfer, Charles A. Pohl, Cambridge university Press, 2010

4) Assessment in Health Professions Education: Steven M. Downing, Rachel Yudkowsky, Routledge, 2009

5) Millennials Rising: The Next Great Generation: Neil Howe, William Strauss, Random House LLC, 2000

6) A Practical Guide for Medical Teachers: John A. Dent, Ronald M. Harden, Churchill Livingstone, 2013

7) Qualitative Research & Evaluation Methods: Integrating Theory and Practice: Michael Quinn Patton, SAGE Publications, Inc, 2015

**Important Course Requirements**

Dates, time, and location of each session are subject to change. Please check with the most updated course syllabus.

**Email**

takada.rheu@tmd.ac.jp

**Instructor's Contact Information**

Office hours: Please contact Prof. Kazuki Takada to make an appointment (takada.rheu@tmd.ac.jp)

<b>Lecture No</b>	041253				
<b>Subject title</b>	Practice of Professional Development in Health Sciences	<b>Subject ID</b>			
<b>Instructors</b>	TAKADA KAZUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West					
<b>Course Purpose and Outline</b>					
While age-associated physiological changes, increased numbers of comorbid systemic conditions, and an issue of polypharmacy all jeopardize oral hygiene status of the elderly, periodontal diseases, which result from decreased oral hygiene status, predispose to and aggravate diabetes and cardiovascular diseases. In addition, the advancement in medical and dental sciences have blurred boundary between medical and dental care. Therefore, the aging society in the 21st century requires coordinated and collaborative care between medical, dental, and other health professionals. Furthermore, the advancement in information technology and rapidly increasing human mobility continue to blur boundary between countries or states. Education and professional development for health professionals need to continue to evolve as well as to adjust to such concurrent societal needs. Coursework, activities and projects that students engage aim to produce leaders in health professional education who could apply key pedagogical theories and learning methods in developing appropriate curriculum.					
<b>Course Objective(s)</b>					
At the end of the course, students will be able to:					
1) Apply key educational theories and learning methodologies which draw on those theories in developing curriculum					
2) Apply a process-based approach and an outcome logic model in developing curriculum					
<b>Lecture Style</b>					
Students' learning activities include participation to lectures, various activities, project work, and research. Lectures are bidirectional and student-centered, and students are expected to come well-read and prepared and to participate actively. Program is organized based on the experiential learning theory by David Kolb, incorporating components of reflective observation, abstract conceptualization, active experimentation, and concrete experience.					
<b>Course Outline</b>					
Goals/outline: Students will engage in various activities to apply knowledge and skills they acquire through lectures. Examples of activities are defining competencies/choosing appropriate learning methods and assessment/evaluation methods, and developing curriculum using process-based approach and logic models.					
<b>Grading System</b>					
Students will be graded based on their active participation to class and submitted report.					
<b>Prerequisite Reading</b>					
Come to class prepared and ready to participate actively, by reading assigned texts and other required materials carefully and comprehensively before the class session. Participate in class through active listening, taking notes, asking questions, taking part in discussions, engaging your mind on the topic matter, and respecting other people's viewpoints. Always raise your hand before sharing something with the class. Students who do not participate in class discussions or who do not ask questions may be believed to be unprepared for class. Study outside of class by reviewing course notes after each class session and studying in small groups with classmates.					
<b>Reference Materials</b>					
1) Understanding Medical Education: Evidence, Theory and Practice: Tim Swanwick, Wiley-Blackwell, 2010					
2) Curriculum Development for Medical Education: A Six-Step Approach: David E. Kern, Patricia A. Thomas, Mark T. Hughes, The Johns Hopkins University Press, 2010					
3) Professionalism in Medicine: A Case-Based Guide for Medical Students: John Spandorfer, Charles A. Pohl, Cambridge university Press, 2010					
4) Assessment in Health Professions Education: Steven M. Downing, Rachel Yudkowsky, Routledge, 2009					
5) Millennials Rising: The Next Great Generation: Neil Howe, William Strauss, Random House LLC, 2000					

6) A Practical Guide for Medical Teachers: John A. Dent, Ronald M. Harden, Churchill Livingstone, 2013

7) Qualitative Research & Evaluation Methods: Integrating Theory and Practice: Michael Quinn Patton, SAGE Publications, Inc, 2015

**Important Course Requirements**

Dates, time, and location of each session are subject to change. Please check with the most updated course syllabus.

**Email**

takada.rheu@tmd.ac.jp

**Instructor's Contact Information**

Office hours:

Please contact Prof. Kazuki Takada to make an appointment (takada.rheu@tmd.ac.jp)



<b>Lecture No</b>	041254				
<b>Subject title</b>	Laboratory practice of Professional Development in Health Sciences	<b>Subject ID</b>			
<b>Instructors</b>	TAKADA KAZUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West					
<b>Course Purpose and Outline</b>					
<p>While age-associated physiological changes, increased numbers of comorbid systemic conditions, and an issue of polypharmacy all jeopardize oral hygiene status of the elderly, periodontal diseases, which result from decreased oral hygiene status, predispose to and aggravate diabetes and cardiovascular diseases. In addition, the advancement in medical and dental sciences have blurred boundary between medical and dental care. Therefore, the aging society in the 21st century requires coordinated and collaborative care between medical, dental, and other health professionals. Furthermore, the advancement in information technology and rapidly increasing human mobility continue to blur boundary between countries or states. Education and professional development for health professionals need to continue to evolve as well as to adjust to such concurrent societal needs. Coursework, activities and projects, and research that students engage aim to produce leaders in health professional education who could assess concurrent societal needs for healthcare and develop appropriate curriculum by drawing on key pedagogical theories and learning methods and by using a process-based approach and outcome logic models.</p>					
<b>Course Objective(s)</b>					
<p>At the end of the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1) Conduct survey and analysis necessary for societal needs assessment, set appropriate learning goals based on survey results, and select assessment methodologies appropriate for the goals</li> <li>2) Design a logical and feasible curriculum that best fits its ecosystem by drawing on key educational theories and using a process-based approach and an outcome logic model.</li> </ol>					
<b>Lecture Style</b>					
<p>Students' learning activities include participation to lectures, various activities, project work, and research. Lectures are bidirectional and student-centered, and students are expected to come well-read and prepared and to participate actively. Program is organized based on the experiential learning theory by David Kolb, incorporating components of reflective observation, abstract conceptualization, active experimentation, and concrete experience.</p>					
<b>Course Outline</b>					
<p>Goals/outline:</p> <p>By participating in our research activities, students will become able to recognize unresolved clinical or scientific questions, formulate an hypothesis, identify methods and resources to address this hypothesis, understand the scientific theory and methodology (both quantitative and qualitative) that form the basis of medical discoveries, communicate new knowledge obtained from scientific inquiry responsibly and clearly, and understand the ethical requirements for human-oriented scientific inquiry.</p>					
<b>Grading System</b>					
<p>Students will be graded based on their research, and academic activities (participation to and presentation at domestic and international research conference).</p>					
<b>Prerequisite Reading</b>					
<p>Come to class prepared and ready to participate actively, by reading assigned texts and other required materials carefully and comprehensively before the class session. Participate in class through active listening, taking notes, asking questions, taking part in discussions, engaging your mind on the topic matter, and respecting other people's viewpoints. Always raise your hand before sharing something with the class. Students who do not participate in class discussions or who do not ask questions may be believed to be unprepared for class. Study outside of class by reviewing course notes after each class session and studying in small groups with classmates.</p>					
<b>Reference Materials</b>					
<p>1) Understanding Medical Education: Evidence, Theory and Practice: Tim Swanwick, Wiley-Blackwell, 2010</p>					

- 2) Curriculum Development for Medical Education: A Six-Step Approach: David E. Kern, Patricia A. Thomas, Mark T. Hughes, The Johns Hopkins University Press, 2010
- 3) Professionalism in Medicine: A Case-Based Guide for Medical Students: John Spandorfer, Charles A. Pohl, Cambridge university Press, 2010
- 4) Assessment in Health Professions Education: Steven M. Downing, Rachel Yudkowsky, Routledge, 2009
- 5) Millennials Rising: The Next Great Generation: Neil Howe, William Strauss, Random House LLC, 2000
- 6) A Practical Guide for Medical Teachers: John A. Dent, Ronald M. Harden, Churchill Livingstone, 2013
- 7) Qualitative Research & Evaluation Methods: Integrating Theory and Practice: Michael Quinn Patton, SAGE Publications, Inc, 2015

**Important Course Requirements**

Dates, time, and location of each session are subject to change. Please check with the most updated course syllabus.

**Email**

takada.rheu@tmd.ac.jp

**Instructor's Contact Information**

Office hours:

Please contact Prof. Kazuki Takada to make an appointment (takada.rheu@tmd.ac.jp)

<b>Lecture No</b>	041255				
<b>Subject title</b>	Lecture of Family Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TAKEMURA YOUSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>Email</b> yousuke.fmed@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM9:30-PM16:30					

<b>Lecture No</b>	041256				
<b>Subject title</b>	Practice of Family Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TAKEMURA YOUSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>Email</b> yousuke.fmed@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM9:30-PM16:30					

<b>Lecture No</b>	041257				
<b>Subject title</b>	Laboratory practice of Family Medicine			<b>Subject ID</b>	
<b>Instructors</b>	TAKEMURA YOUSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					
<b>Email</b> yousuke.fmed@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM9:30-PM16:30					

<b>Lecture No</b>	041258				
<b>Subject title</b>	Lecture of Neuroanatomy and Cellular Neurobiology	<b>Subject ID</b>			
<b>Instructors</b>	TERADA SUMIO, KAWAGISHI MASAHIKO, SAITO KENTA, SATO KEISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>					
Lecture: Conference and Seminar, Journal Club Staff Room 1/2, Department of Neuroanatomy and Cellular Neurobiology (Building 3, 13th floor) Special Lecture To be announced.					
<b>Course Purpose and Outline</b>					
The aim of this course is to provide students with a basic understanding of the morphological organization of the human nervous system as well as neuroanatomical methodologies in sufficient depth to form the basis for further research studies.					
<b>Course Objective(s)</b>					
(1) To provide an overview of the organization of the nervous system and to understand its ultrastructure and cytoarchitectures. (2) To obtain a basic understanding of the spectroscopic techniques used to investigate morphological and functional connectivity of neurons.					
<b>Lecture Style</b>					
Special Lectures are open to every student interested in attending. Limited to 5-6 students in other programs.					
<b>Course Outline</b>					
Goals/outline: To discuss morphological and molecular cell biological basis of selected studies. Topics include cellular neurobiology and other related areas with special reference to microscopic and spectroscopic techniques. Special lectures by prominent researchers are arranged irregularly.					
<b>Grading System</b>					
Grading will be based on class participation (100% for Lecture and Practice, 75% for Lab) and on a short paper (25% for Lab) in English or Japanese.					
<b>Prerequisite Reading</b>					
Prerequisite: Basic undergraduate-level knowledge on biomedical sciences					
<b>Reference Materials</b>					
1. Jackson MB. Molecular and Cellular Biophysics. Cambridge Univ Press; 1st ed (2006). 2. Hayat MA. Principles and techniques of electron microscopy. CRC Press; 3rd ed (1989).					
<b>Important Course Requirements</b>					
Consult your academic advisor in advance on schedule before taking the course.					
<b>Note(s) to Students</b>					
Enrollment limited up to 5-6 students except Special Lectures. Prereq; Permission of instructor for non-medical students. Preference to non-medical graduate students for Cellular neurobiology practice (Basic).					
<b>Email</b>					
TERADA SUMIO:terada.nana@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TERADA SUMIO:Contact the following address in advance for consultation.					

<b>Lecture No</b>	041259				
<b>Subject title</b>	Practice of Neuroanatomy and Cellular Neurobiology			<b>Subject ID</b>	
<b>Instructors</b>	TERADA SUMIO, KAWAGISHI MASAHIKO, SAITO KENTA, SATO KEISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>					
Practice:					
Cellular neurobiology practice (Basic)					
Refer to the medical school timetable (Neuroanatomy).					
Cellular neurobiology practice (Advanced)					
Lab Rooms, Department of Neuroanatomy and Cellular Neurobiology (Building 3, 13th floor)					
Journal Club, Conference and Seminar					
Staff Room 1/2, Department of Neuroanatomy and Cellular Neurobiology (Building 3, 13th floor)					
<b>Course Purpose and Outline</b>					
The aim of this course is to provide students with a basic understanding of the morphological organization of the human nervous system as well as neuroanatomical methodologies in sufficient depth to form the basis for further research studies.					
<b>Course Objective(s)</b>					
(1) To provide an overview of the organization of the nervous system and to understand its ultrastructure and cytoarchitectures. (2) To obtain a basic understanding of the spectroscopic techniques used to investigate morphological and functional connectivity of neurons.					
<b>Lecture Style</b>					
Special Lectures are open to every student interested in attending. Limited to 5–6 students in other programs.					
<b>Course Outline</b>					
Goals/Outline:					
Survey of the anatomy and functional organization of the human central nervous system with clinical applications, from basic to expert level.					
Advanced level of survey (including specialized journal club, and/or conference) is arranged, if necessary.					
<b>Grading System</b>					
Grading will be based on class participation (100% for Lecture and Practice, 75% for Lab) and on a short paper (25% for Lab) in English or Japanese.					
<b>Prerequisite Reading</b>					
Prerequisite: Basic undergraduate-level knowledge on biomedical sciences					
<b>Reference Materials</b>					
1. Jackson MB. Molecular and Cellular Biophysics. Cambridge Univ Press; 1st ed (2006).					
2. Hayat MA. Principles and techniques of electron microscopy. CRC Press; 3rd ed (1989).					
<b>Important Course Requirements</b>					
Consult your academic advisor in advance on schedule before taking the course.					
<b>Note(s) to Students</b>					
Enrollment limited up to 5–6 students except Special Lectures.					
Prereq; Permission of instructor for non-medical students.					
Preference to non-medical graduate students for Cellular neurobiology practice (Basic).					
<b>Email</b>					
TERADA SUMIO:terada.nana@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TERADA SUMIO:Contact the following address in advance for consultation.					

<b>Lecture No</b>	041260				
<b>Subject title</b>	Laboratory practice of Neuroanatomy and Cellular Neurobiology	<b>Subject ID</b>			
<b>Instructors</b>	TERADA SUMIO, KAWAGISHI MASAHIKO, SAITO KENTA, SATO KEISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in Japanese.					
<b>Lecture place</b>					
Lab: Lab Rooms, Department of Neuroanatomy and Cellular Neurobiology (Building 3, 13th floor) EM Room, Instrumental Analysis Research Division, Research Center for Medical and Dental Sciences (Building 8 South, 3rd floor)					
<b>Course Purpose and Outline</b>					
The aim of this course is to provide students with a basic understanding of the morphological organization of the human nervous system as well as neuroanatomical methodologies in sufficient depth to form the basis for further research studies.					
<b>Course Objective(s)</b>					
(1) To provide an overview of the organization of the nervous system and to understand its ultrastructure and cytoarchitectures. (2) To obtain a basic understanding of the spectroscopic techniques used to investigate morphological and functional connectivity of neurons.					
<b>Lecture Style</b>					
Special Lectures are open to every student interested in attending. Limited to 5–6 students in other programs.					
<b>Course Outline</b>					
Goals/Outline: Lectures and laboratory treating the central nervous system from the ultramicroscopic points of view are arranged.					
<b>Grading System</b>					
Grading will be based on class participation (100% for Lecture and Practice, 75% for Lab) and on a short paper (25% for Lab) in English or Japanese.					
<b>Prerequisite Reading</b>					
Prerequisite: Basic undergraduate-level knowledge on biomedical sciences					
<b>Reference Materials</b>					
1. Jackson MB. Molecular and Cellular Biophysics. Cambridge Univ Press; 1st ed (2006). 2. Hayat MA. Principles and techniques of electron microscopy. CRC Press; 3rd ed (1989).					
<b>Important Course Requirements</b>					
Consult your academic advisor in advance on schedule before taking the course.					
<b>Note(s) to Students</b>					
Enrollment limited up to 5–6 students except Special Lectures. Prereq; Permission of instructor for non-medical students. Preference to non-medical graduate students for Cellular neurobiology practice (Basic).					
<b>Email</b>					
TERADA SUMIO:terada.nana@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TERADA SUMIO:Contact the following address in advance for consultation.					



<b>Lecture No</b>	041261				
<b>Subject title</b>	Lecture of Systems Neurophysiology	<b>Subject ID</b>			
<b>Instructors</b>	SUGIHARA IZUMI, SUGIUCHI YURIKO, IZAWA YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Lecture place</b>					
Dr. Sugihara's office (14th floor, Building 3)					
<b>Course Purpose and Outline</b>					
We hope that the participants can learn knowledge, research techniques, and way of thinking in neuroscience, or neurophysiology and related fields in particular by attending our courses.					
<b>Course Objective(s)</b>					
We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.					
<b>Lecture Style</b>					
Weekly lectures are designed for a small group of participants. Practices are designed for a small number of students. All the courses can be in English.					
<b>Course Outline</b>					
(Check with the teacher in charge for the program which is not specifically scheduled.)					
Goals/outline:					
The nervous system is studied in a variety of ways from gene, molecular through cellular, neural network, and in vivo levels because of its anatomical complexity and functional diversity. The goal of our education is for students to understand the link between the morphology and function of the nervous system through neurophysiological approaches mainly at the neural network level and to learn a way of thinking about further questions about the nervous system, including those about pathological states of the nervous system in diseases. For this purpose, we give lectures on the neural structure, network, function, development and molecular expression of the cerebellum, cerebrum, basal ganglia, and brainstem.					
Practice					
Goals/Outline:					
To support for students to learn for themselves basic matters in neuroscience and neurophysiology, we provide technical practices, journal club and seminars for progress reports. Technical practices include basic electronics (e.g. designing and making an amplifier), computer simulation programming, and analysis of neural networks using light and fluorescent microscopes.					
Lab					
Goals/Outline:					
To understand the structural and functional organization of the nervous system, we support for students to learn several basic neuroscience techniques including neuronal labeling with viral tracers and genetically manipulated animals, in vivo and in vitro electrophysiological techniques in anesthetized and awake trained animals. We then recommend students to utilize these techniques to analyse structure and function of basic neuronal systems in the brain such as somatosensory, vicerocensory, vestibular, cerebellar, oculomotor and reward systems. Students are supposed to learn basic approach to basic and clinical problems in the nervous system.					
<b>Grading System</b>					
Lecture: evaluation will be based on participation, preparation and involvement of a student					
Practice: evaluation will be based on participation, preparation and involvement of a student					
Lab: evaluation will be based on participation, reports and external activity (presentation and publication).					
<b>Prerequisite Reading</b>					

<p>Participants have to prepare their presentation in the lecture. They have to read through the article for the Journal Club. They are supposed to arrange other things with the instructor (professor).</p>
<p><b>TextBook</b>  PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.</p>
<p><b>Reference Materials</b>  Ito, The Cerebellum, Brain for an Implicit Self. Pearson Education, 2012.  Carpenter and Reddi, Neurophysiology 5thEd, Hodder Arnold, 2012.  Bear et al., Neuroscience, Exploring the Brain, Lippincott.  Sanes et al., Development of the Nervous System, Academic Press Elsevier.  Squire et al., Fundamental Neuroscience, Academic Press Elsevier</p>
<p><b>Important Course Requirements</b>  N/A</p>
<p><b>Note(s) to Students</b>  <a href="http://www.tmd.ac.jp/med/eng/eng/phy1-E.html">http://www.tmd.ac.jp/med/eng/eng/phy1-E.html</a></p>
<p><b>Email</b>  SUGIHARA IZUMI:isugihara.phy1@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b>  SUGIHARA IZUMI:Monday–Friday, 1:00–18:00 p.m. In the office room or in the lab nearby, in the 14th floor of Building 3. However, the person in charge may be absent because of irregular meetings or other things.</p>

<b>Lecture No</b>	041262				
<b>Subject title</b>	Practice of Systems Neurophysiology	<b>Subject ID</b>			
<b>Instructors</b>	SUGIHARA IZUMI, SUGIUCHI YURIKO, IZAWA YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Lecture place</b>					
Dr. Sugihara's office (14th floor, Building 3)					
<b>Course Purpose and Outline</b>					
We hope that the participants can learn knowledge, research techniques, and way of thinking in neuroscience, or neurophysiology and related fields in particular by attending our courses.					
<b>Course Objective(s)</b>					
We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.					
<b>Lecture Style</b>					
Weekly lectures are designed for a small group of participants. Practices are designed for a small number of students. All the courses can be in English.					
<b>Course Outline</b>					
(Check with the teacher in charge for the program which is not specifically scheduled.)					
Goals/outline:					
The nervous system is studied in a variety of ways from gene, molecular through cellular, neural network, and in vivo levels because of its anatomical complexity and functional diversity. The goal of our education is for students to understand the link between the morphology and function of the nervous system through neurophysiological approaches mainly at the neural network level and to learn a way of thinking about further questions about the nervous system, including those about pathological states of the nervous system in diseases. For this purpose, we give lectures on the neural structure, network, function, development and molecular expression of the cerebellum, cerebrum, basal ganglia, and brainstem.					
Practice					
Goals/Outline:					
To support for students to learn for themselves basic matters in neuroscience and neurophysiology, we provide technical practices, journal club and seminars for progress reports. Technical practices include basic electronics (e.g. designing and making an amplifier), computer simulation programming, and analysis of neural networks using light and fluorescent microscopes.					
Lab					
Goals/Outline:					
To understand the structural and functional organization of the nervous system, we support for students to learn several basic neuroscience techniques including neuronal labeling with viral tracers and genetically manipulated animals, in vivo and in vitro electrophysiological techniques in anesthetized and awake trained animals. We then recommend students to utilize these techniques to analyse structure and function of basic neuronal systems in the brain such as somatosensory, vicerocensory, vestibular, cerebellar, oculomotor and reward systems. Students are supposed to learn basic approach to basic and clinical problems in the nervous system.					
<b>Grading System</b>					
Lecture: evaluation will be based on participation, preparation and involvement of a student					
Practice: evaluation will be based on participation, preparation and involvement of a student					
Lab: evaluation will be based on participation, reports and external activity (presentation and publication).					
<b>Prerequisite Reading</b>					

<p>Participants have to prepare their presentation in the lecture. They have to read through the article for the Journal Club. They are supposed to arrange other things with the instructor (professor).</p>
<p><b>TextBook</b>  PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.</p>
<p><b>Reference Materials</b>  Ito, The Cerebellum, Brain for an Implicit Self. Pearson Education, 2012.  Carpenter and Reddi, Neurophysiology 5thEd, Hodder Arnold, 2012.  Bear et al., Neuroscience, Exploring the Brain, Lippincott.  Sanes et al., Development of the Nervous System, Academic Press Elsevier.  Squire et al., Fundamental Neuroscience, Academic Press Elsevier</p>
<p><b>Important Course Requirements</b>  N/A</p>
<p><b>Note(s) to Students</b>  <a href="http://www.tmd.ac.jp/med/eng/eng/phy1-E.html">http://www.tmd.ac.jp/med/eng/eng/phy1-E.html</a></p>
<p><b>Email</b>  SUGIHARA IZUMI:isugihara.phy1@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b>  SUGIHARA IZUMI:Monday–Friday, 1:00–18:00 p.m. In the office room or in the lab nearby, in the 14th floor of Building 3. However, the person in charge may be absent because of irregular meetings or other things.</p>

<b>Lecture No</b>	041263				
<b>Subject title</b>	Laboratory practice of Systems Neurophysiology	<b>Subject ID</b>			
<b>Instructors</b>	SUGIHARA IZUMI, SUGIUCHI YURIKO, IZAWA YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in English.					
<b>Lecture place</b>					
Dr. Sugihara's office (14th floor, Building 3)					
<b>Course Purpose and Outline</b>					
We hope that the participants can learn knowledge, research techniques, and way of thinking in neuroscience, or neurophysiology and related fields in particular by attending our courses.					
<b>Course Objective(s)</b>					
We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.					
<b>Lecture Style</b>					
Weekly lectures are designed for a small group of participants. Practices are designed for a small number of students. All the courses can be in English.					
<b>Course Outline</b>					
(Check with the teacher in charge for the program which is not specifically scheduled.)					
Goals/outline:					
The nervous system is studied in a variety of ways from gene, molecular through cellular, neural network, and in vivo levels because of its anatomical complexity and functional diversity. The goal of our education is for students to understand the link between the morphology and function of the nervous system through neurophysiological approaches mainly at the neural network level and to learn a way of thinking about further questions about the nervous system, including those about pathological states of the nervous system in diseases. For this purpose, we give lectures on the neural structure, network, function, development and molecular expression of the cerebellum, cerebrum, basal ganglia, and brainstem.					
Practice					
Goals/Outline:					
To support for students to learn for themselves basic matters in neuroscience and neurophysiology, we provide technical practices, journal club and seminars for progress reports. Technical practices include basic electronics (e.g. designing and making an amplifier), computer simulation programming, and analysis of neural networks using light and fluorescent microscopes.					
Lab					
Goals/Outline:					
To understand the structural and functional organization of the nervous system, we support for students to learn several basic neuroscience techniques including neuronal labeling with viral tracers and genetically manipulated animals, in vivo and in vitro electrophysiological techniques in anesthetized and awake trained animals. We then recommend students to utilize these techniques to analyse structure and function of basic neuronal systems in the brain such as somatosensory, vicerocensory, vestibular, cerebellar, oculomotor and reward systems. Students are supposed to learn basic approach to basic and clinical problems in the nervous system.					
<b>Grading System</b>					
Lecture: evaluation will be based on participation, preparation and involvement of a student					
Practice: evaluation will be based on participation, preparation and involvement of a student					
Lab: evaluation will be based on participation, reports and external activity (presentation and publication).					
<b>Prerequisite Reading</b>					

<p>Participants have to prepare their presentation in the lecture. They have to read through the article for the Journal Club. They are supposed to arrange other things with the instructor (professor).</p>
<p><b>TextBook</b>  PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.</p>
<p><b>Reference Materials</b>  Ito, The Cerebellum, Brain for an Implicit Self. Pearson Education, 2012.  Carpenter and Reddi, Neurophysiology 5thEd, Hodder Arnold, 2012.  Bear et al., Neuroscience, Exploring the Brain, Lippincott.  Sanes et al., Development of the Nervous System, Academic Press Elsevier.  Squire et al., Fundamental Neuroscience, Academic Press Elsevier</p>
<p><b>Important Course Requirements</b>  N/A</p>
<p><b>Note(s) to Students</b>  <a href="http://www.tmd.ac.jp/med/eng/eng/phy1-E.html">http://www.tmd.ac.jp/med/eng/eng/phy1-E.html</a></p>
<p><b>Email</b>  SUGIHARA IZUMI:isugihara.phy1@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b>  SUGIHARA IZUMI:Monday–Friday, 1:00–18:00 p.m. In the office room or in the lab nearby, in the 14th floor of Building 3. However, the person in charge may be absent because of irregular meetings or other things.</p>

<b>Lecture No</b>	041264				
<b>Subject title</b>	Lecture of Pharmacology and Neurobiology			<b>Subject ID</b>	
<b>Instructors</b>	TANABE TSUTOMU, SAEGUSA HIRONAO, FUJIKAWA MAKOTO, TANAKA DAISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Special lecture course and practice course are in the laboratory No. 1 and lab works are in the other laboratories.					
<b>Course Purpose and Outline</b>					
Many intriguing mysteries left in the issue of brain function like (1) learning and memory, (2) cognition and behavior, (3) generation of consciousness, (4) personality and mentality. On the other hand, in the modernday world with a complicated human relations and prolonged life span, necessity of deeper understanding and development of the means to cure the numerous neurological disorders and pain is enormously increased.					
<b>Course Objective(s)</b>					
1. Become a scientist capable of lecturing science to students.					
2. Become a scientist capable of conducting major experiments by him/herself.					
3. Become a scientist capable of preparing a research plan by him/herself.					
4. Become a scientist capable of writing a grant proposal by him/herself.					
<b>Lecture Style</b>					
Small group (5~6 persons) study					
<b>Course Outline</b>					
Goals/outline: In the brain function like (1) learning and memory, (2) cognition and behavior, (3) generation of consciousness, (4) personality and mentality, many intriguing questions are still remained to be answered. On the other hand, in the era of satiation and longevity, needs for preventing and treating numerous neurological disorders and pain have been risen. For the purpose of integrating the accumulated findings of the neuronal function at the molecular and cellular level into the ones at the system level, we will lecture the subjects on (1) Neurotransmitter receptors, G-proteins and ion channels, (2) Ion channelopathies, (3) Neurodegeneration and functional disturbance in the central nervous system, (4) Central control of pain perception and sensation, (5) Pharmacological control of stem cell proliferation and differentiation in this special lecture course.					
<b>Grading System</b>					
Grading is based on the wide-ranging evaluations, including attendance record (60%) and the degree of contribution on the course (10%). Furthermore, contribution to the research planning and progress (20%), presentation at the research conference (10%).					
<b>Prerequisite Reading</b>					
Read reviews and original papers covering the fields and understand the contents. Read the textbook of brain science and neuroscience to deepen the knowledge related to the fields.					
<b>Reference Materials</b>					
Principles of Neural Science (5th ed.) McGraw Hill, 2013. ISBN 0-07-139011-1					
Molecular Biology of the Cell (6th ed.) Garland Science, 2014 ISBN 9780815344322					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
none					

<b>Lecture No</b>	041265				
<b>Subject title</b>	Practice of Pharmacology and Neurobiology	<b>Subject ID</b>			
<b>Instructors</b>	TANABE TSUTOMU, SAEGUSA HIRONAO, FUJIKAWA MAKOTO, TANAKA DAISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Special lecture course and practice course are in the laboratory No. 1 and lab works are in the other laboratories.					
<b>Course Purpose and Outline</b>					
Many intriguing mysteries left in the issue of brain function like (1) learning and memory, (2) cognition and behavior, (3) generation of consciousness, (4) personality and mentality. On the other hand, in the modern world with a complicated human relations and prolonged life span, necessity of deeper understanding and development of the means to cure the numerous neurological disorders and pain is enormously increased.					
<b>Course Objective(s)</b>					
1. Become a scientist capable of lecturing science to students.					
2. Become a scientist capable of conducting major experiments by him/herself.					
3. Become a scientist capable of preparing a research plan by him/herself.					
4. Become a scientist capable of writing a grant proposal by him/herself.					
<b>Lecture Style</b>					
Small group (5~6 persons) study					
<b>Course Outline</b>					
Goals/Outline:					
1. Acquire the skills of preparing an informative presentation and develop an effective way of presenting results in the audience.					
2. Understand the meaning of the research conducted and learn how to figure out the meaningful future directions from the conclusions.					
3. Practice answering the questions raised by the audience.					
<b>Grading System</b>					
Grading is based on the wide-ranging evaluations, including attendance record (60%) and the degree of contribution on the course (10%). Furthermore, contribution to the research planning and progress (20%), presentation at the research conference (10%).					
<b>Prerequisite Reading</b>					
Read reviews and original papers covering the fields and understand the contents. Read the textbook of brain science and neuroscience to deepen the knowledge related to the fields.					
<b>Reference Materials</b>					
Principles of Neural Science (5th ed.) McGraw Hill, 2013. ISBN 0-07-139011-1					
Molecular Biology of the Cell (6th ed.) Garland Science, 2014 ISBN 9780815344322					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
none					



<b>Lecture No</b>	041266				
<b>Subject title</b>	Laboratory practice of Pharmacology and Neurobiology			<b>Subject ID</b>	
<b>Instructors</b>	TANABE TSUTOMU, SAEGUSA HIRONAO, FUJIKAWA MAKOTO, TANAKA DAISUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All lectures are conducted in English.					
<b>Lecture place</b>					
Special lecture course and practice course are in the laboratory No. 1 and lab works are in the other laboratories.					
<b>Course Purpose and Outline</b>					
Many intriguing mysteries left in the issue of brain function like (1) learning and memory, (2) cognition and behavior, (3) generation of consciousness, (4) personality and mentality. On the other hand, in the modern world with a complicated human relations and prolonged life span, necessity of deeper understanding and development of the means to cure the numerous neurological disorders and pain is enormously increased.					
<b>Course Objective(s)</b>					
1. Become a scientist capable of lecturing science to students.					
2. Become a scientist capable of conducting major experiments by him/herself.					
3. Become a scientist capable of preparing a research plan by him/herself.					
4. Become a scientist capable of writing a grant proposal by him/herself.					
<b>Lecture Style</b>					
Small group (5~6 persons) study					
<b>Course Outline</b>					
Goals/Outline: During the first couple of months, students are requested to acquire basic techniques of biochemistry, molecular biology, pharmacology and electrophysiology that are routinely used in our laboratory. Then students will be given a small project to do using the techniques they have learned during the initial training. Students are also required to read relevant scientific papers and conduct seminar style lectures to other lab members monthly. After completion of the initial phase, students start their own project under the supervision of the faculties in the lab.					
<b>Grading System</b>					
Grading is based on the wide-ranging evaluations, including attendance record (60%) and the degree of contribution on the course (10%). Furthermore, contribution to the research planning and progress (20%), presentation at the research conference (10%).					
<b>Prerequisite Reading</b>					
Read reviews and original papers covering the fields and understand the contents. Read the textbook of brain science and neuroscience to deepen the knowledge related to the fields.					
<b>Reference Materials</b>					
Principles of Neural Science (5th ed.) McGraw Hill, 2013. ISBN 0-07-139011-1 Molecular Biology of the Cell (6th ed.) Garland Science, 2014 ISBN 9780815344322					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
none					

<b>Lecture No</b>	041267				
<b>Subject title</b>	Lecture of Molecular Neuroscience	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Please confirm venue with instructors					
<b>Course Purpose and Outline</b> The final goal of this course is to understand molecular, cellular, and neuronal ensemble mechanisms underlying higher order brain functions including learning and memory. For that purpose, we teach molecular genetics, physiological and behavioral methods.					
<b>Course Objective(s)</b> Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates					
<b>Lecture Style</b> All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.					
<b>Course Outline</b> Goals/outline: Cognition consists of sensory inputs from vision, somatic sensation, hearing, olfaction and taste, and memory retrieved from these. In this lecture, we will review the latest findings of mechanism of sensation and memory, the fundamental processes of cognition, at the level of molecule, cell, system and behavior. Furthermore, we address how sum of these findings constitutes cognition.					
<b>Grading System</b> Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.					
<b>Prerequisite Reading</b> N/A					
<b>Reference Materials</b> <ul style="list-style-type: none"> <li>•「Neuroscience-Exploring the brain」(Lippincott Williams &amp; Wilkins)</li> <li>•「From Neuron to Brain」(Sinauer)</li> </ul>					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> In principle, progress report and journal club are hold with less than ten participants.					
<b>Email</b> tanaka.aud@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> Questions on lectures are welcomed as needed.					

<b>Lecture No</b>	041268				
<b>Subject title</b>	Practice of Molecular Neuroscience	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Please confirm venue with instructors					
<b>Course Purpose and Outline</b> The final goal of this course is to understand molecular, cellular, and neuronal ensemble mechanisms underlying higher order brain functions including learning and memory. For that purpose, we teach molecular genetics, physiological and behavioral methods.					
<b>Course Objective(s)</b> Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates					
<b>Lecture Style</b> All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.					
<b>Course Outline</b> Goals/Outline: The aim of this practice is to learn molecular biological, anatomical, electrophysiological and psychological approaches to elucidate the mechanism of cognition. Moreover, based on previous case reports of cognitive deficits, students should plan and discuss what kinds of the researches are possible and meaningful to elucidate the pathology of these diseases, leading to unveil the mechanism of cognition.					
<b>Grading System</b> Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.					
<b>Prerequisite Reading</b> N/A					
<b>Reference Materials</b> <ul style="list-style-type: none"> <li>•「Neuroscience-Exploring the brain」(Lippincott Williams &amp; Wilkins)</li> <li>•「From Neuron to Brain」(Sinauer)</li> </ul>					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> In principle, progress report and journal club are hold with less than ten participants.					
<b>Email</b> tanaka.aud@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> Questions on lectures are welcomed as needed.					

<b>Lecture No</b>	041269				
<b>Subject title</b>	Laboratory practice of Molecular Neuroscience			<b>Subject ID</b>	
<b>Instructors</b>	TANAKA KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Please confirm venue with instructors					
<b>Course Purpose and Outline</b> The final goal of this course is to understand molecular, cellular, and neuronal ensemble mechanisms underlying higher order brain functions including learning and memory. For that purpose, we teach molecular genetics, physiological and behavioral methods.					
<b>Course Objective(s)</b> Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates					
<b>Lecture Style</b> All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.					
<b>Course Outline</b> Goals/Outline: Students should generate genetically modified animals to comprehensively understand the cognitive mechanisms at the level of molecule to behavior. Then, students should analyze cognitive deficits of mutant animals and those molecular mechanisms.					
<b>Grading System</b> Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.					
<b>Prerequisite Reading</b> N/A					
<b>Reference Materials</b> <ul style="list-style-type: none"> <li>•「Neuroscience–Exploring the brain」(Lippincott Williams &amp; Wilkins)</li> <li>•「From Neuron to Brain」(Sinauer)</li> </ul>					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> In principle, progress report and journal club are hold with less than ten participants.					
<b>Email</b> tanaka.aud@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> Questions on lectures are welcomed as needed.					

<b>Lecture No</b>	041270				
<b>Subject title</b>	Lecture of Neuropathology	<b>Subject ID</b>			
<b>Instructors</b>	OKAZAWA HITOSHI, TAGAWA KAZUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Need to check with professor in advance; classes are different in each program.					
<b>Course Purpose and Outline</b> Understanding of the outline of research on neurodegenerative diseases and developmental disorders					
<b>Course Objective(s)</b> Obtaining the ability to design and perform original research					
<b>Lecture Style</b> The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.					
<b>Course Outline</b> Goals/outline: Recently, not only elucidation of molecular mechanisms underlying neurodegenerative disease pathology, but also development of therapeutic approaches utilizing the elucidated molecular mechanisms has been extensively progressed. In this lecture, while we teach students the latest progress in the field, we will especially focus on understanding of aggregation of abnormal disease protein and molecular alteration or impairment of functional proteins caused by the protein aggregation in neuronal cells.					
<b>Grading System</b> Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.					
<b>Prerequisite Reading</b> Related papers would be suggested in each occasion.					
<b>Reference Materials</b> Suggestions will be provided in each project.					
<b>Important Course Requirements</b> n.a.					
<b>Note(s) to Students</b> Number of participants for journal club and research meeting in the lab should be around 10 people.					
<b>Email</b> OKAZAWA HITOSHI:okazawa.npat@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAZAWA HITOSHI:Neuropathology TEL 5803-5847					

<b>Lecture No</b>	041271				
<b>Subject title</b>	Practice of Neuropathology	<b>Subject ID</b>			
<b>Instructors</b>	OKAZAWA HITOSHI, TAGAWA KAZUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Need to check with professor in advance; classes are different in each program.					
<b>Course Purpose and Outline</b> Understanding of the outline of research on neurodegenerative diseases and developmental disorders					
<b>Course Objective(s)</b> Obtaining the ability to design and perform original research					
<b>Lecture Style</b> The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.					
<b>Course Outline</b> Each lab member should systematically describe their research progress and the knowledge in related field in short time. Advices to develop members' presentation skills will be given.					
<b>Grading System</b> Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.					
<b>Prerequisite Reading</b> Related papers would be suggested in each occasion.					
<b>Reference Materials</b> Suggestions will be provided in each project.					
<b>Important Course Requirements</b> n.a.					
<b>Note(s) to Students</b> Number of participants for journal club and research meeting in the lab should be around 10 people.					
<b>Email</b> OKAZAWA HITOSHI:okazawa.npat@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAZAWA HITOSHI:Neuropathology TEL 5803-5847					

<b>Lecture No</b>	041272				
<b>Subject title</b>	Laboratory practice of Neuropathology			<b>Subject ID</b>	
<b>Instructors</b>	OKAZAWA HITOSHI, TAGAWA KAZUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Need to check with professor in advance; classes are different in each program.					
<b>Course Purpose and Outline</b> Understanding of the outline of research on neurodegenerative diseases and developmental disorders					
<b>Course Objective(s)</b> Obtaining the ability to design and perform original research					
<b>Lecture Style</b> The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.					
<b>Course Outline</b> Goals/Outline: To elucidate molecular mechanisms underlying neurodegenerative diseases and to develop new therapeutic approaches utilizing the molecular mechanisms obtained. We generally use fly and mouse models expressing the disease genes in neurons. Techniques that we use are: molecular biology using plasmid, cosmid, and virus vector; immunohistochemistry; primary culture of neuronal cells and neural stem cells; creation of genetically modified mouse.					
<b>Grading System</b> Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.					
<b>Prerequisite Reading</b> Related papers would be suggested in each occasion.					
<b>Reference Materials</b> Suggestions will be provided in each project.					
<b>Important Course Requirements</b> n.a.					
<b>Note(s) to Students</b> Number of participants for journal club and research meeting in the lab should be around 10 people.					
<b>Email</b> OKAZAWA HITOSHI:okazawa.npat@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAZAWA HITOSHI:Neuropathology TEL 5803-5847					

<b>Lecture No</b>	041273				
<b>Subject title</b>	Lecture of Ophthalmology and Visual Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO KYOKO, TAKASE HIROSHI, YOSHIDA TAKESHI, KAMOI KOJU, HORIE SHINTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English. Research Progress meeting will be conducted in English.					
<b>Lecture place</b> Ask the instructor for details					
<b>Course Purpose and Outline</b> Basic and advanced learning of ophthalmology					
<b>Course Objective(s)</b> To learn the knowledges and skills required in ophthalmic research					
<b>Lecture Style</b> To discuss the details of research protocols in a small group and to provide some lectures to facilitate the students to make their own research plan					
<b>Course Outline</b> Goals/outline: To understand the pathophysiology of various tissues within the eye and visual pathways and to understand the pathogenesis, diagnosis, and treatments of various ocular disorders					
<b>Grading System</b> Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attitude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.					
<b>Prerequisite Reading</b> Reading textbooks of ophthalmology or basic research in this field.					
<b>Reference Materials</b> The Eye :Basic Science in Practice (SAUNDERS) etc					
<b>Important Course Requirements</b> Nothing particularly					
<b>Note(s) to Students</b> We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.					



<b>Lecture No</b>	041274				
<b>Subject title</b>	Practice of Ophthalmology and Visual Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO KYOKO, TAKASE HIROSHI, YOSHIDA TAKESHI, KAMOI KOJU, HORIE SHINTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English. Research Progress meeting will be conducted in English.					
<b>Lecture place</b> Ask the instructor for details					
<b>Course Purpose and Outline</b> Basic and advanced learning of ophthalmology					
<b>Course Objective(s)</b> To learn the knowledges and skills required in ophthalmic research					
<b>Lecture Style</b> To discuss the details of research protocols in a small group and to provide some lectures to facilitate the students to make their own research plan					
<b>Course Outline</b> Goals/Outline: To realize the diagnostic procedures and treatment strategies against various ocular disorders					
<b>Grading System</b> Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attitude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.					
<b>Prerequisite Reading</b> Reading textbooks of ophthalmology or basic research in this field.					
<b>Reference Materials</b> The Eye :Basic Science in Practice (SAUNDERS) etc					
<b>Important Course Requirements</b> Nothing particularly					
<b>Note(s) to Students</b> We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.					

<b>Lecture No</b>	041275				
<b>Subject title</b>	Laboratory practice of Ophthalmology and Visual Science	<b>Subject ID</b>			
<b>Instructors</b>	ONO KYOKO, TAKASE HIROSHI, YOSHIDA TAKESHI, KAMOI KOJU, HORIE SHINTARO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English. Research Progress meeting will be conducted in English.					
<b>Lecture place</b> Ask the instructor for details					
<b>Course Purpose and Outline</b> Basic and advanced learning of ophthalmology					
<b>Course Objective(s)</b> To learn the knowledges and skills required in ophthalmic research					
<b>Lecture Style</b> To discuss the details of research protocols in a small group and to provide some lectures to facilitate the students to make their own research plan					
<b>Course Outline</b> Goals/Outline: To investigate the pathogenesis of various ocular disorders using surgically obtained specimens or human eye samples by immunological, molecular biological, and pathological methods					
<b>Grading System</b> Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attitude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.					
<b>Prerequisite Reading</b> Reading textbooks of ophthalmology or basic research in this field.					
<b>Reference Materials</b> The Eye :Basic Science in Practice (SAUNDERS) etc					
<b>Important Course Requirements</b> Nothing particularly					
<b>Note(s) to Students</b> We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.					

<b>Lecture No</b>	041276				
<b>Subject title</b>	Lecture of Otorhinolaryngology	<b>Subject ID</b>			
<b>Instructors</b>	TSUTSUMI TAKESHI, KAWASHIMA YOSHIYUKI, SUZUKI YASUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please contact the leaders prior to lecture.					
<b>Course Purpose and Outline</b> Achieve the ability to perform the correct diagnosis and treatment of the disease in otorhinolaryngology and to design the basic research to analyze the pathophysiology of the disease in otorhinolaryngology.					
<b>Course Objective(s)</b> To study subjects of otolaryngology, that is, signs and symptoms of hearing loss, dysequilibrium, respiration, smell, swallowing, phonation. Also to research these pathologies using techniques of molecular biology, morphology and physiology.					
<b>Lecture Style</b> Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.					
<b>Course Outline</b> Goals/outline: Otorhinolaryngology manages various organs and disorders in ear, nose, throat, head and neck regions. Therefore, lots of signs, symptoms and disorders, that is, hearing disturbance, dysequilibrium, respiration, olfaction, swallowing, phonation, are research objects of otorhinolaryngology. Especially, communication disturbance concerning listening and speaking are featured speciality in otorhinolaryngology. Above mentioned organs have extremely precise mechanism, therefore, they suffer damages from various kinds of diseases, such like circulatory disturbance, infection, neoplasm and trauma. With current progress in molecular biology, novel mechanisms of otorhinolaryngological diseases will be investigated and the new prospects of the treatment will be presented. In this course, we lecture pathology, etiology, diagnosis and treatment of otorhinolaryngological disorders with latest topics.					
<b>Grading System</b> Achievement of attendance to the lecture, seminar, laboratory is evaluated. Research report and presentation in convention are also estimated. Your overall activity will be assessed.					
<b>Prerequisite Reading</b> Please consult to lecturer.					
<b>Reference Materials</b> Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> No limitation for applicant. Presenter in the journal group will be limited to 10 persons.					
<b>Email</b> TSUTSUMI TAKESHI:tsutsumi.oto@tmd.ac.jp					
<b>Instructor's Contact Information</b> TSUTSUMI TAKESHI:No settled office-hour, but advanced appointment is required.					

<b>Lecture No</b>	041277				
<b>Subject title</b>	Practice of Otorhinolaryngology	<b>Subject ID</b>			
<b>Instructors</b>	TSUTSUMI TAKESHI, KAWASHIMA YOSHIYUKI, SUZUKI YASUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please contact the leaders prior to lecture.					
<b>Course Purpose and Outline</b> Achieve the ability to perform the correct diagnosis and treatment of the disease in otorhinolaryngolgy and to design the basic research to analyze the pathophysiology of the disease in otorhinolaryngology.					
<b>Course Objective(s)</b> To study subjects of otolaryngology, that is, signs and symptoms of hearing loss, dysequilibrium, respiration, smell, swallowing, phonation. Also to research these pathologies using techniques of molecular biology, morphology and physiology.					
<b>Lecture Style</b> Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.					
<b>Course Outline</b> Goals/Outline: You will learn basic diagnostic techniques, examinations and data interpretations in otorhinolaryngology. Following subjects should be mastered; Techniques: otoscope, rhinoscope, laryngoscope. Examinations: Hearing tests including pure-tone, speech, Bekesy, impedance audiometry, tubal function testing, otoacoustic emission, electrocochleogram, auditory brainstem response. Equilibrium tests including standard tests, electronystagmography, gravicorder and three dimensional oculography. Rhinological test: smell test and rhinometry. Diagnostic observation: middle ear, paranasal sinus, nasopharynx, larynx and hypopharyngeal endoscope. Ultrasonography: parotid, submandibular gland, thyroid, parathyroid and lymph node. Data interpretations: After obtaining these data, you interpret the data and make an appropriate diagnosis and treatment for the patients by yourself. In addition to these program, cadaver dissection for temporal bone, nose and paranasal sinus, head and neck will be scheduled.					
<b>Grading System</b> Achievement of attendance to the lecture, seminar, laboratory is evaluated. Research report and presentation in convention are also estimated. Your overall activity will be assessed.					
<b>Prerequisite Reading</b> Please consult to lecturer.					
<b>Reference Materials</b> Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> No limitation for applicant. Presenter in the journal group will be limited to 10 persons.					
<b>Email</b> TSUTSUMI TAKESHI:tsumi.oto@tmd.ac.jp					
<b>Instructor's Contact Information</b> TSUTSUMI TAKESHI:No settled office-hour, but advanced appointment is required.					

<b>Lecture No</b>	041278				
<b>Subject title</b>	Laboratory practice of Otorhinolaryngology			<b>Subject ID</b>	
<b>Instructors</b>	TSUTSUMI TAKESHI, KAWASHIMA YOSHIYUKI, SUZUKI YASUHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Please contact the leaders prior to lecture.					
<b>Course Purpose and Outline</b> Achieve the ability to perform the correct diagnosis and treatment of the disease in otorhinolaryngology and to design the basic research to analyze the pathophysiology of the disease in otorhinolaryngology.					
<b>Course Objective(s)</b> To study subjects of otolaryngology, that is, signs and symptoms of hearing loss, dysequilibrium, respiration, smell, swallowing, phonation. Also to research these pathologies using techniques of molecular biology, morphology and physiology.					
<b>Lecture Style</b> Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.					
<b>Course Outline</b> Goals/Outline: Mechanism causing otorhinolaryngological disorder varies, therefore, anatomy and physiology should be mastered. After that, clinical data, such as diagnosis and treatment outcome of the patient, are investigated and analyzed. Through these processes, your task is to investigate new features of pathology, and also to develop novel diagnostic methods and treatments. For this purpose, you can perform basic research using an animal model. In the laboratory, techniques of molecular biology, morphology, histopathology and electrophysiology are used.					
<b>Grading System</b> Achievement of attendance to the lecture, seminar, laboratory is evaluated. Research report and presentation in convention are also estimated. Your overall activity will be assessed.					
<b>Prerequisite Reading</b> Please consult to lecturer.					
<b>Reference Materials</b> Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> No limitation for applicant. Presenter in the journal group will be limited to 10 persons.					
<b>Email</b> TSUTSUMI TAKESHI:tsutsumi.oto@tmd.ac.jp					
<b>Instructor's Contact Information</b> TSUTSUMI TAKESHI:No settled office-hour, but advanced appointment is required.					

<b>Lecture No</b>	041279				
<b>Subject title</b>	Lecture of Neurology and Neurological Science			<b>Subject ID</b>	
<b>Instructors</b>	YOKOTA TAKANORI, SANJO NOBUO, ISHIBASHI SATORU, OKUBO TAKUYA, NISHIDA YOICHIRO, ISHIGURO TARO, HATTORI Takaaki, YAGI Yousuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<p><b>Lecture place</b></p> <p>Check the website or office board for locations of lectures: Conference Room (B11F, medical hospital), Neurology and Neurological Science Laboratories (12F, 15F Building III), etc.</p> <p>Special Lecture (e.g. ONSA seminar): twice a year</p> <p>Ochanomizu Brain Science Seminar : twice a year</p> <p>Basic Research Journal Club (BRJC) :every Tuesday, 17:00 – 18:00</p> <p>Journal Club on Nucleic-acid therapeutics: every Tuesday, 18:00-19:00</p> <p>Clinical Pharmacology Seminar: Tuesday(occasionally), 14:30 – 14:45</p> <p>Neurology Seminar: every Tuesday, 14:30 – 14:45</p>					
<p><b>Course Purpose and Outline</b></p> <p>Students have to understand characteristics of neurological diseases as a research object, through getting lectures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvement of diagnostic procedures or evaluation of the diseases.</p>					
<p><b>Course Objective(s)</b></p> <p>Students have to understand characteristics of neurological diseases as a research object, and acquire at least one method (technique) to perform elucidating the pathogenic mechanisms, or development and improvement of diagnostic procedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.</p>					
<p><b>Lecture Style</b></p> <p>Students are trained by performing experiments, taking lectures and practicing in a small group. Throughout this course, students learn not only experimental techniques but also gain ideas and how to solve problems through discussions.</p>					
<p><b>Course Outline</b></p> <p>Goals/Outline:</p> <p>Neurology and Neurological Science is a very broad, multidisciplinary field including degeneration, demyelination, paroxysmal disorder, vascular disorder, and inflammation that occurred in the central nervous system, peripheral nervous system, autonomic nervous system, and skeletal muscle.</p> <p>Our field covers wide spectrum of neurological disorders, from those that are acute (e.g. stroke, disturbance of consciousness and seizure) to chronic/slowly progressive diseases (e.g. Alzheimer's disease), from common (e.g. epilepsy, headache) to very rare diseases, and from easily curable to intractable diseases. Throughout this doctoral course, the faculty and staff provide continued supports, explaining not only overview of the diseases but also new research methods such as molecular genetics, molecular biology, genetic engineering, immunological approach in order to elucidate causes and pathogenesis of these diseases and to establish therapies.</p>					
<p><b>Grading System</b></p> <p>Students are evaluated based on their participation in the lectures, internships and experiments as well as their presentation at conferences and seminars. Publication of original papers is highly evaluated.</p>					
<p><b>Prerequisite Reading</b></p> <p>Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are required to read those textbooks and well prepare for the lectures and practical trainings.</p>					
<p><b>Reference Materials</b> Students should ask their teachers (primary investigators) because textbooks are different according to their projects.</p>					
<p><b>Important Course Requirements</b> Not particularly.</p>					
<p><b>Note(s) to Students</b> The curriculum aims to provide education in a small group. Therefore, we may select applicants if candidates exceed the number of available enrollment spaces.No limitation for applicant. Presenter in the journal group will be limited to 10 persons.</p>					

<b>Lecture No</b>	041280				
<b>Subject title</b>	Practice of Neurology and Neurological Science			<b>Subject ID</b>	
<b>Instructors</b>	YOKOTA TAKANORI, SANJO NOBUO, ISHIBASHI SATORU, OKUBO TAKUYA, NISHIDA YOICHIRO, ISHIGURO TARO, HATTORI Takaaki, YAGI Yousuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Check the website or office board for locations of lectures: Conference Room (B11F, medical hospital), Neurology and Neurological Science Laboratories (12F, 15F Building III), etc.					
Clinical neurology ward round: every Tuesday, 8:00 – 12:00, 13:30 – 14:30					
Clinical conference: every Tuesday, 8:00 – 9:00					
Neuromuscular conference: every Monday, 17:00 – 17:30					
Electrophysiological examination conference: every Monday, 17:30 – 20:00					
Neuroimmunology conference: every Thursday, 16:00 – 18:00					
Neuroimaging conference: every Thursday, 16:00 – 18:00					
Stroke conference: alternate Wednesday, 18:00 – 19:00					
Electrophysiology Krusus: twice a month Tuesday, 15:30–16:00					
t-PA or NIHSS Krusus: twice a month Tuesday, 15:30–16:00					
Genetic diagnosis Krusus: once a month Tuesday, 15:30–16:00					
<b>Course Purpose and Outline</b>					
Students have to understand characteristics of neurological diseases as a research object, through getting lectures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvement of diagnostic procedures or evaluation of the diseases.					
<b>Course Objective(s)</b>					
Students have to understand characteristics of neurological diseases as a research object, and acquire at least one method (technique) to perform elucidating the pathogenic mechanisms, or development and improvement of diagnostic procedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.					
<b>Lecture Style</b>					
Students are trained by performing experiments, taking lectures and practicing in a small group. Throughout this course, students learn not only experimental techniques but also gain ideas and how to solve problems through discussions.					
<b>Course Outline</b>					
We conduct clinical research for elucidating a pathomechanism of neurological disorders such as cerebrovascular diseases, autoimmune diseases, or neurodegenerative diseases using a lot of techniques including electrophysiological and neuroimaging techniques. We also carry out clinical practices related to diagnosis and therapy for neurological disorders.					
<b>Grading System</b>					
Students are evaluated based on their participation in the lectures, internships and experiments as well as their presentation at conferences and seminars. Publication of original papers is highly evaluated.					
<b>Prerequisite Reading</b>					
Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are required to read those textbooks and well prepare for the lectures and practical trainings.					
<b>Reference Materials</b> Students should ask their teachers (primary investigators) because textbooks are different according to their projects.					
<b>Important Course Requirements</b> Not particularly.					
<b>Note(s) to Students</b>					
The curriculum aims to provide education in a small group. Therefore, we may select applicants if candidates exceed the number of available enrollment spaces.No limitation for applicant. Presenter in the journal group will be limited to 10 persons.					

<b>Lecture No</b>	041281				
<b>Subject title</b>	Laboratory practice of Neurology and Neurological Science			<b>Subject ID</b>	
<b>Instructors</b>	YOKOTA TAKANORI, SANJO NOBUO, ISHIBASHI SATORU, OKUBO TAKUYA, NISHIDA YOICHIRO, ISHIGURO TARO, HATTORI Takaaki, YAGI Yousuke]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Check the website or office board for locations of lectures: Conference Room (B11F, medical hospital), Neurology and Neurological Science Laboratories (12F, 15F Building III), etc.					
Molecular genetics experiment: Everyday, available any time					
Molecular biology experiment: Everyday, available any time					
Biochemistry experiment: Everyday, available any time					
Immunology experiment: Everyday, available any time					
Morphology experiment: Everyday, available any time					
Neuroimaging experiment: Everyday, available any time					
<b>Course Purpose and Outline</b>					
Students have to understand characteristics of neurological diseases as a research object, through getting lectures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvement of diagnostic procedures or evaluation of the diseases.					
<b>Course Objective(s)</b>					
Students have to understand characteristics of neurological diseases as a research object, and acquire at least one method (technique) to perform elucidating the pathogenic mechanisms, or development and improvement of diagnostic procedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.					
<b>Lecture Style</b>					
Students are trained by performing experiments, taking lectures and practicing in a small group. Throughout this course, students learn not only experimental techniques but also gain ideas and how to solve problems through discussions.					
<b>Course Outline</b>					
Goals/Outline: We conduct experiments by using immunological, molecular biological and molecular genetic methods in order to elucidate genes which are risk factors or causes of neurological diseases, metabolic derangement that leads to neuronal death, pathogenesis, and treatment for autoimmune diseases (e.g. Multiple Sclerosis, Myasthenia Gravis). We also carry out clinical studies using electrophysiological and neuroimaging techniques in order to elucidate pathophysiology.					
<b>Grading System</b>					
Students are evaluated based on their participation in the lectures, internships and experiments as well as their presentation at conferences and seminars. Publication of original papers is highly evaluated.					
<b>Prerequisite Reading</b>					
Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are required to read those textbooks and well prepare for the lectures and practical trainings.					
<b>Reference Materials</b>					
Students should ask their teachers (primary investigators) because textbooks are different according to their projects.					
<b>Important Course Requirements</b>					
Not particularly.					
<b>Note(s) to Students</b>					
The curriculum aims to provide education in a small group. Therefore, we may select applicants if candidates exceed the number of available enrollment spaces.No limitation for applicant. Presenter in the journal group will be limited to 10 persons.					



<b>Lecture No</b>	041282				
<b>Subject title</b>	Lecture of Psychiatry and Behavioral Sciences I			<b>Subject ID</b>	
<b>Instructors</b>	TAKAHASHI Hidehiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.					
<b>Course Purpose and Outline</b>					
This course aims at understanding the mechanisms of the brain function and dysfunction underlying the expression of cognition and behavior, as well as the etiology and pathophysiology of mental disorders by using molecular neurobiology, molecular genetics, neuroimaging, and neurophysiology. Its purposes also include to master various approaches to studies in the research field of forensic psychiatry. Fundamental knowledge of mental disorders, which is crucial to develop novel treatment and prophylaxis for them, will be provided during the course.					
<b>Course Objective(s)</b>					
The goals of this course are: 1) to understand major symptoms, treatment and hypothetical etiologies of schizophrenia, mood, anxiety, and other mental disorders, 2) to understand the mechanism of action of antipsychotics, antidepressants, anxiolytics, antiepileptics and others, 3) to understand psychotherapy and other treatment and care of mental disorders, and 4) to understand research objectives and methodologies of forensic psychiatry.					
<b>Lecture Style</b>					
Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.					
<b>Course Outline</b>					
Goals/outline: The lecture course aims at understanding the mechanisms of the brain function and dysfunction underlying the expression of cognition and behavior, as well as the etiology and pathophysiology of mental disorders. The methodologies of basic and clinical research using cutting-edge technologies of molecular neurobiology, molecular genetics, neuroimaging, and neurophysiology, and sociology and psychology will be instructed. Prevention and development of novel treatment of the disorders, and present condition and prospects of forensic psychiatry research will be further discussed.					
<b>Grading System</b>					
Evaluation will be based on the research progress reports and presentation, paper publication in the research journals, and presentation at the national and international conferences.					
<b>Prerequisite Reading</b>					
1) Required to read through the text and the handout-pinting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.					
<b>Reference Materials</b>					
1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electronic edition) 2009					
2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electronic edition) 2007					
3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015					
<b>Important Course Requirements</b>					
None					
<b>Email</b>					
hidepsyc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Building No3 13F					

<b>Lecture No</b>	041283				
<b>Subject title</b>	Practice of Psychiatry and Behavioral Sciences I	<b>Subject ID</b>			
<b>Instructors</b>	TAKAHASHI Hidehiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.					
<b>Course Purpose and Outline</b>					
This course aims at understanding the mechanisms of the brain function and dysfunction underlying the expression of cognition and behavior, as well as the etiology and pathophysiology of mental disorders by using molecular neurobiology, molecular genetics, neuroimaging, and neurophysiology. Its purposes also include to master various approaches to studies in the research field of forensic psychiatry. Fundamental knowledge of mental disorders, which is crucial to develop novel treatment and prophylaxis for them, will be provided during the course.					
<b>Course Objective(s)</b>					
The goals of this course are: 1) to understand major symptoms, treatment and hypothetical etiologies of schizophrenia, mood, anxiety, and other mental disorders, 2) to understand the mechanism of action of antipsychotics, antidepressants, anxiolytics, antiepileptics and others, 3) to understand psychotherapy and other treatment and care of mental disorders, and 4) to understand research objectives and methodologies of forensic psychiatry.					
<b>Lecture Style</b>					
Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.					
<b>Course Outline</b>					
Goals/Outline: Training session program will be provided to master the internationally standardized classifications of operational diagnosis and the clinical scaling tools for psychiatric disorders. The basics for the planning of treatment and prophylaxis based on the comprehension of the psychiatric symptoms and diagnosis process will be acquired through clinical pharmacology, neuroimaging, neurophysiology, clinical biochemistry, and molecular genetics. In the field of forensic psychiatry, the ways to learn and practice the method of psychiatric evaluation, the biological basis of illegal acts and their relationship with mental illnesses will be mastered. Further skills should be also obtained to establish research strategies to deal with unsolved problems.					
<b>Grading System</b>					
Evaluation will be based on the research progress reports and presentation, paper publication in the research journals, and presentation at the national and international conferences.					
<b>Prerequisite Reading</b>					
1) Required to read through the text and the handout-pinting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.					
<b>Reference Materials</b>					
1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electronic edition) 2009					
2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electronic edition) 2007					
3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015					
<b>Important Course Requirements</b>					
None					
<b>Email</b>					
hidepsyc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Building No3 13F					

<b>Lecture No</b>	041284				
<b>Subject title</b>	Laboratory practice of Psychiatry and Behavioral Sciences I	<b>Subject ID</b>			
<b>Instructors</b>	TAKAHASHI Hidehiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.					
<b>Course Purpose and Outline</b>					
This course aims at understanding the mechanisms of the brain function and dysfunction underlying the expression of cognition and behavior, as well as the etiology and pathophysiology of mental disorders by using molecular neurobiology, molecular genetics, neuroimaging, and neurophysiology. Its purposes also include to master various approaches to studies in the research field of forensic psychiatry. Fundamental knowledge of mental disorders, which is crucial to develop novel treatment and prophylaxis for them, will be provided during the course.					
<b>Course Objective(s)</b>					
The goals of this course are: 1) to understand major symptoms, treatment and hypothetical etiologies of schizophrenia, mood, anxiety, and other mental disorders, 2) to understand the mechanism of action of antipsychotics, antidepressants, anxiolytics, antiepileptics and others, 3) to understand psychotherapy and other treatment and care of mental disorders, and 4) to understand research objectives and methodologies of forensic psychiatry.					
<b>Lecture Style</b>					
Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.					
<b>Course Outline</b>					
Goals/Outline: The research goal is to investigate the neural mechanisms of mental disorders through the studies of clinical cases and experimental animal models. We will use the up-to-date techniques of the molecular biology, molecular genetics, neuroimaging, and neurophysiology to understand the etiology and pathophysiology of those illnesses and cognitive and behavioral dysfunctions at the molecular level. The final goal will be the development of novel diagnostic methods, treatment and prevention for the diseases. In the field of forensic psychiatry, we will conduct research from a new viewpoint on improvement of the method of psychiatric evaluation, the biological basis of illegal acts and their relationship with psychiatric disorders.					
<b>Grading System</b>					
Evaluation will be based on the research progress reports and presentation, paper publication in the research journals, and presentation at the national and international conferences.					
<b>Prerequisite Reading</b>					
1) Required to read through the text and the handout-pinting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.					
<b>Reference Materials</b>					
1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electronic edition) 2009					
2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electronic edition) 2007					
3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015					
<b>Important Course Requirements</b>					
None					
<b>Email</b>					
hidepsyc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Building No3 13F					

<b>Lecture No</b>	041285				
<b>Subject title</b>	Lecture of Psychiatry and Behavioral Sciences II	<b>Subject ID</b>			
<b>Instructors</b>	OKADA TAKAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Forensic Mental Health Laboratory on 25th floor of M&D Tower					
<b>Course Purpose and Outline</b>					
<p>The main purpose of this course is to introduce you to the basics of forensic, especially criminal psychiatry. Forensic psychiatry is one of the subspecialty of applied psychiatry and deal with varied topics between law and mental health. Some of the topics covered in this course will include the basic structure of the criminal and mental health systems for Mentally Disordered Offenders (MDOs), the historical and social background of the systems. We will explore these topics by reviewing psychiatry, psychology, legal, sociological research findings, and discussing how we can apply them to the research activity for revealing psychopathology of criminals and developing violence risk assessment and management tools and crime prevention strategy.</p>					
<b>Course Objective(s)</b>					
<p>(1) Outline the basic criminal system and mental health systems and the interaction between them.</p> <p>(2) Accurately describe the legal concept of forensic psychiatry examination and criminal responsibility (insanity defense)</p> <p>(3) Recognize the psychological features of offenders of various crime types.</p> <p>(4) Be able to identify and describe various theories of crime, diagnostics, treatment, correction, social reintegration of mentally disordered offenders.</p> <p>(5) Demonstrate a basic understanding of the latest research trend of criminal psychiatry, criminal psychology, criminal sociology, and criminal law study.</p>					
<b>Lecture Style</b> The lecture will be held in small-group basis.					
<b>Course Outline</b> This course provides students with insight into some of the basic interactions between legal system and mental health system. This course deal with a wide variety of materials relevant to the study of forensic psychiatry including treatment of MDOs, criminal responsibility, forensic psychiatric expert testimony, risk assessment and risk management of MDOs. Students will learn about the basic and applied biological research approach to the etiology of crime and social problematic behaviors.					
<b>Grading System</b> The grade determination is based on your attendance, class participation, oral participation in class discussion, report writings. Also, an excellent research activity, for example, frequent presentation in research meetings, publishing in major journal can be comprehensively considered to the grading.					
<b>Prerequisite Reading</b>					
<p>(1) Students are expected and required to have elementary knowledge of and enough background in general psychiatry, because this course is in APPLIED psychiatry.</p> <p>(2) Students should prep the relevant sections of the reference materials.</p> <p>(3) Instructor will provide advance notice when special preparation required.</p>					
<b>TextBook</b>					
Forensic Psychiatry: Clinical, Legal and Ethical Issues, Second Edition / John Gunn, Pamela Taylor: Routledge, 2014					
Principles and Practice of Forensic Psychiatry / Richard Rosner, Charles Scott: CRC Press, 2017					
The American Psychiatric Association Publishing Textbook of Forensic Psychiatry / Gold, Liza H., Frierson, Richard L.: Amer Psychiatric Pub Inc, 2017					
臨床医のための司法精神医学入門 / 日本精神神経学会司法精神医学委員会編, 日本精神神経学会司法精神医学委員会.: 新興医学出版社, 2017					
<b>Reference URL</b> <a href="http://www.tmd.ac.jp/fpsy/index.html">http://www.tmd.ac.jp/fpsy/index.html</a>					
<b>Email</b> takayukiok.psyc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Tue PM.5:00-PM.9:00 in Forensic Mental Health Laboratory on 25th floor of M&D Tower					

<b>Lecture No</b>	041286				
<b>Subject title</b>	Practice of Psychiatry and Behavioral Sciences II	<b>Subject ID</b>			
<b>Instructors</b>	OKADA TAKAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Forensic Mental Health Laboratory on 25th floor of M&D Tower					
<b>Course Purpose and Outline</b> The main purpose of this course is to introduce you to the basics of forensic, especially criminal psychiatry. Forensic psychiatry is one of the subspecialty of applied psychiatry and deal with varied topics between law and mental health. Some of the topics covered in this course will include the basic structure of the criminal and mental health systems for Mentally Disordered Offenders (MDOs), the historical and social background of the systems. We will explore these topics by reviewing psychiatry, psychology, legal, sociological research findings, and discussing how we can apply them to the research activity for revealing psychopathology of criminals and developing violence risk assessment and management tools and crime prevention strategy.					
<b>Course Objective(s)</b> (1) Outline the basic criminal system and mental health systems and the interaction between them. (2) Accurately describe the legal concept of forensic psychiatry examination and criminal responsibility (insanity defense) (3) Recognize the psychological features of offenders of various crime types. (4) Be able to identify and describe various theories of crime, diagnostics, treatment, correction, social reintegration of mentally disordered offenders. (5) Demonstrate a basic understanding of the latest research trend of criminal psychiatry, criminal psychology, criminal sociology, and criminal law study.					
<b>Lecture Style</b> The lecture will be held in small-group basis.					
<b>Course Outline</b> Students learn the basic concept and skills of forensic case assessment and management from discussing cases of forensic expert examinations and clinical cases under the Medical Treatment and Supervision Act (MTSA). Students will set a research agenda from these discussions and establish their basic research plan.					
<b>Grading System</b> The grade determination is based on your attendance, class participation, oral participation in class discussion, report writings. Also, an excellent research activity, for example, frequent presentation in research meetings, publishing in major journal can be comprehensively considered to the grading.					
<b>Prerequisite Reading</b> (1) Students are expected and required to have elementary knowledge of and enough background in general psychiatry, because this course is in APPLIED psychiatry. (2) Students should prep the relevant sections of the reference materials. (3) Instructor will provide advance notice when special preparation required.					
<b>TextBook</b> Forensic Psychiatry: Clinical, Legal and Ethical Issues, Second Edition／John Gunn, Pamela Taylor:Routledge, 2014 Principles and Practice of Forensic Psychiatry／Richard Rosner, Charles Scott: CRC Press, 2017 The American Psychiatric Association Publishing Textbook of Forensic Psychiatry／Gold, Liza H., Frierson, Richard L.: Amer Psychiatric Pub Inc, 2017 臨床医のための司法精神医学入門／日本精神神経学会司法精神医学委員会編,日本精神神経学会司法精神医学委員会,: 新興医学出版社, 2017					
<b>Reference URL</b> <a href="http://www.tmd.ac.jp/fpsy/index.html">http://www.tmd.ac.jp/fpsy/index.html</a>					
<b>Email</b> takayukiok.psy@tmd.ac.jp					
<b>Instructor's Contact Information</b> Tue PM.5:00-PM.9:00 in Forensic Mental Health Laboratory on 25th floor of M&D Tower					

<b>Lecture No</b>	041287				
<b>Subject title</b>	Laboratory practice of Psychiatry and Behavioral Sciences II	<b>Subject ID</b>			
<b>Instructors</b>	OKADA TAKAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Forensic Mental Health Laboratory on 25th floor of M&D Tower					
<b>Course Purpose and Outline</b>					
The main purpose of this course is to introduce you to the basics of forensic, especially criminal psychiatry. Forensic psychiatry is one of the subspecialty of applied psychiatry and deal with varied topics between law and mental health. Some of the topics covered in this course will include the basic structure of the criminal and mental health systems for Mentally Disordered Offenders (MDOs), the historical and social background of the systems. We will explore these topics by reviewing psychiatry, psychology, legal, sociological research findings, and discussing how we can apply them to the research activity for revealing psychopathology of criminals and developing violence risk assessment and management tools and crime prevention strategy.					
<b>Course Objective(s)</b>					
(1) Outline the basic criminal system and mental health systems and the interaction between them.					
(2) Accurately describe the legal concept of forensic psychiatry examination and criminal responsibility (insanity defense)					
(3) Recognize the psychological features of offenders of various crime types.					
(4) Be able to identify and describe various theories of crime, diagnostics, treatment, correction, social reintegration of mentally disordered offenders.					
(5) Demonstrate a basic understanding of the latest research trend of criminal psychiatry, criminal psychology, criminal sociology, and criminal law study.					
<b>Lecture Style</b>					
The lecture will be held in small-group basis.					
<b>Course Outline</b>					
Students establish their own research plan and conduct the research (collect data, analyze the data, discuss the results, write a research paper, and submit it to a scientific journal). The forensic psychiatry research topics may vary widely depending on the student's interest, for example, the political research about forensic mental health services and correctional medicine, methodological study about forensic report writing, developing effective practice of expert testimony, validation study of risk assessment and risk management tools in forensic settings.					
<b>Grading System</b>					
The grade determination is based on your attendance, class participation, oral participation in class discussion, report writings. Also, an excellent research activity, for example, frequent presentation in research meetings, publishing in major journal can be comprehensively considered to the grading.					
<b>Prerequisite Reading</b>					
<b>TextBook</b>					
Forensic Psychiatry: Clinical, Legal and Ethical Issues, Second Edition/John Gunn, Pamela Taylor:Routledge, 2014					
Principles and Practice of Forensic Psychiatry/Richard Rosner, Charles Scott: CRC Press, 2017					
The American Psychiatric Association Publishing Textbook of Forensic Psychiatry/Gold, Liza H., Frierson, Richard L.: Amer Psychiatric Pub Inc, 2017					
臨床医のための司法精神医学入門/日本精神神経学会司法精神医学委員会編,日本精神神経学会司法精神医学委員会,: 新興医学出版社, 2017					
<b>Email</b> takayukiok.psyc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Tue PM.5:00–PM.9:00 in Forensic Mental Health Laboratory on 25th floor of M&D Tower					

<b>Lecture No</b>	041288				
<b>Subject title</b>	Lecture of Neurosurgery	<b>Subject ID</b>			
<b>Instructors</b>	MAEHARA TAKETOSHI, NARIAI TADASHI, KARAKAMA Junn				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Ask the instructors before the class start.					
<b>Course Purpose and Outline</b> To acquire the sufficient knowledge and insight into the pathological conditions as well as normal functions of the central nervous system and spinal cord, and to nurture the mind of exploration.					
<b>Course Objective(s)</b> To acquire the proper knowledge for diagnosis of neurological disease and for neurosurgical treatment. To conduct experiments using novel research methods and give the solution to the clinical and basic problem in neuroscience field.					
<b>Lecture Style</b> Small group (~10 students) is favorable. Talk & discussion style.					
<b>Course Outline</b> Goals/outline There are various attracting subjects in the field of clinical or basic research. It is essential to acquire the sufficient knowledge and insight into the pathological conditions as well as normal functions of the central nervous system and spinal cord, which will directly benefit for the improvement of clinical results. Main educational purpose of neurosurgery in the graduate course is to provide students opportunity to acquire the proper technique as well as the broad knowledge, and to nurture the mind of exploration.					
<b>Grading System</b> By students' attendance rate, oral presentation.					
<b>Prerequisite Reading</b> Ask the instructors before the class start.					
<b>Reference Materials</b> Ask the instructors before the class start.					
<b>Important Course Requirements</b> none					
<b>Note(s) to Students</b> Journal club & Meet with patients: maximum of 10 students Join Lab team: maximum of 5 students.					

<b>Lecture No</b>	041289				
<b>Subject title</b>	Practice of Neurosurgery	<b>Subject ID</b>			
<b>Instructors</b>	MAEHARA TAKETOSHI, NARIAI TADASHI, KARAKAMA Junn				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Ask the instructors before the class start.					
<b>Course Purpose and Outline</b>					
To acquire the sufficient knowledge and insight into the pathological conditions as well as normal functions of the central nervous system and spinal cord, and to nurture the mind of exploration.					
<b>Course Objective(s)</b>					
To acquire the proper knowledge for diagnosis of neurological disease and for neurosurgical treatment.					
To conduct experiments using novel research methods and give the solution to the clinical and basic problem in neuroscience field.					
<b>Lecture Style</b>					
Small group (~10 students) is favorable.					
Talk & discussion style.					
<b>Course Outline</b>					
Goals/outline					
To acquire the proper knowledge for diagnosis of neurological disease and for neurosurgical treatment. Students will have the experience of various methods for the evaluation of neurological disorder as neurological exam, basic of neuro-imaging, physiological and molecular biological methods.					
<b>Grading System</b>					
By students' attendance rate, oral presentation.					
<b>Prerequisite Reading</b>					
Ask the instructors before the class start.					
<b>Reference Materials</b>					
Ask the instructors before the class start.					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
Journal club & Meet with patients: maximum of 10 students					
Join Lab team: maximum of 5 students.					



<b>Lecture No</b>	041290				
<b>Subject title</b>	Laboratory practice of Neurosurgery			<b>Subject ID</b>	
<b>Instructors</b>	MAEHARA TAKETOSHI, NARIAI TADASHI, KARAKAMA Junn				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Ask the instructors before the class start.					
<b>Course Purpose and Outline</b> To acquire the sufficient knowledge and insight into the pathological conditions as well as normal functions of the central nervous system and spinal cord, and to nurture the mind of exploration.					
<b>Course Objective(s)</b> To acquire the proper knowledge for diagnosis of neurological disease and for neurosurgical treatment. To conduct experiments using novel research methods and give the solution to the clinical and basic problem in neuroscience field.					
<b>Lecture Style</b> Small group (~10 students) is favorable. Talk & discussion style.					
<b>Course Outline</b> Goals/outline The main purpose of Lab study is to give the solution to the clinical and basic problem in neuroscience field, by using proper methods of physiological, biochemical, molecular–biological, and neuroimaging techniques.					
<b>Grading System</b> By students' attendance rate, oral presentation.					
<b>Prerequisite Reading</b> Ask the instructors before the class start.					
<b>Reference Materials</b> Ask the instructors before the class start.					
<b>Important Course Requirements</b> none					
<b>Note(s) to Students</b> Journal club & Meet with patients: maximum of 10 students Join Lab team: maximum of 5 students.					

<b>Lecture No</b>	041291				
<b>Subject title</b>	Lecture of Endovascular Surgery			<b>Subject ID</b>	
<b>Instructors</b>	ARAI HIROKUNI, SUMITA KAZUTAKA, MIKI KAZUNORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	conference room at 20F of MD tower				
<b>Course Purpose and Outline</b>	Main educational purpose of Endovascular Surgery in the graduate course is to provide students the proper technique as well as the basic knowledge of neuroendovascular surgery.				
<b>Course Objective(s)</b>	Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery.				
<b>Lecture Style</b>	Few members each group.				
<b>Course Outline</b>	Goals/outline: Integrated lectures on anatomy, physiology, pathology, neurology with regard to endovascular surgery are performed. Clinical neuroscience (peripheral neuropathy, cerebrovascular disease, brain tumors etc) are also included.				
<b>Grading System</b>	Attending the lecture and practice and oral exam.				
<b>Prerequisite Reading</b>	Student should learned basic knowledge of brain anatomy and neurology.				
<b>Reference Materials</b>	Surgical Neuroangiography 1-3 (Springer)				
<b>Important Course Requirements</b>	Nothing in particular.				
<b>Note(s) to Students</b>	Due to clinical services for patients, members are limited.				
<b>Email</b>	ARAI HIROKUNI:hiro.cvsg@tmd.ac.jp				

<b>Lecture No</b>	041292				
<b>Subject title</b>	Practice of Endovascular Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ARAI HIROKUNI, SUMITA KAZUTAKA, MIKI KAZUNORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> conference room at 20F of MD tower					
<b>Course Purpose and Outline</b> Main educational purpose of Endovascular Surgery in the graduate course is to provide students the proper technique as well as the basic knowledge of neuroendovascular surgery.					
<b>Course Objective(s)</b> Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery.					
<b>Lecture Style</b> Few members each group.					
<b>Course Outline</b> Goals/Outline: In each clinical case diagnostic imaging program is made for proper diagnosis and treatment. Interpretation of MRI, CT, SPECT and angiography findings are made at daily conference. Technical learning of angiography is obtained at angio-suite.					
<b>Grading System</b> Attending the lecture and practice and oral exam.					
<b>Prerequisite Reading</b> Student should learned basic knowledge of brain anatomy and neurology.					
<b>Reference Materials</b> Surgical Neuroangiography 1-3 (Springer)					
<b>Important Course Requirements</b> Nothing in particular.					
<b>Note(s) to Students</b> Due to clinical services for patients, members are limited.					
<b>Email</b> ARAI HIROKUNI:hiro.cvsg@tmd.ac.jp					

<b>Lecture No</b>	041293				
<b>Subject title</b>	Laboratory practice of Endovascular Surgery			<b>Subject ID</b>	
<b>Instructors</b>	ARAI HIROKUNI, SUMITA KAZUTAKA, MIKI KAZUNORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> conference room at 20F of MD tower					
<b>Course Purpose and Outline</b> Main educational purpose of Endovascular Surgery in the graduate course is to provide students the proper technique as well as the basic knowledge of neuroendovascular surgery.					
<b>Course Objective(s)</b> Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery.					
<b>Lecture Style</b> Few members each group.					
<b>Course Outline</b> Goals/Outline: Hemodynamic influence caused by endovascular devices are studied using computerized 3 dimension analysis of fluid hemodynamics. To obtain catheterization and endovascular technique animal model and virtual simulator training are used.					
<b>Grading System</b> Attending the lecture and practice and oral exam.					
<b>Prerequisite Reading</b> Student should learned basic knowledge of brain anatomy and neurology.					
<b>Reference Materials</b> Surgical Neuroangiography 1-3 (Springer)					
<b>Important Course Requirements</b> Nothing in particular.					
<b>Note(s) to Students</b> Due to clinical services for patients, members are limited.					
<b>Email</b> ARAI HIROKUNI:hiro.cvsg@tmd.ac.jp					

<b>Lecture No</b>	041294				
<b>Subject title</b>	Lecture of NCNP Brain Physiology and Pathology			<b>Subject ID</b>	
<b>Instructors</b>	Mikio Hoshino, Ichinohe Noritaka, HANAKAWA TAKASHI, GOTOH Yuichi, AOKI YOSHITSUGU, YAMASHITA Yuichi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> NCNP					
<b>Course Purpose and Outline</b> The nervous system is a very fine and complex organ to elicit the higher brain function and its malfunction causes a variety of neurological and psychiatric disorders in humans. In this lecture, students learn the structure, development and function of the normal nervous and muscle systems as well as pathology of developmental disorders, psychiatric disorders, neurological diseases and muscle diseases. Students also study the latest progress of advanced remedy for neuromuscular diseases. The lecture is held at NCNP (National Center of Neurology and Psychiatry).					
<b>Course Objective(s)</b> To know the basic structure and the developmental machinery of the nervous system of mammals including humans. To understand the pathology of some neuropsychiatric diseases.					
<b>Lecture Style</b> Lecture with Power Point Slides.					
<b>Course Outline</b> First, students learn the basic structure of the nervous system and the developmental machinery for the brain. Then, students study the pathology of neuropsychiatric disorders. They also learn recent progress of diagnosis and treatment for neuropsychiatric diseases					
<b>Grading System</b> We evaluate students generally based on progress reports on their studies in addition to attendance at lectures.					
<b>Prerequisite Reading</b>					
<b>Email</b> Mikio Hoshino:hoshino@ncnp.go.jp					
<b>Instructor's Contact Information</b> Mikio Hoshino: Mon-Fri 9:00~18:00					

<b>Lecture No</b>	041295				
<b>Subject title</b>	Practice of NCNP Brain Physiology and Pathology			<b>Subject ID</b>	
<b>Instructors</b>	Mikio Hoshino, Ichinohe Noritaka, HANAKAWA TAKASHI, GOTOH Yuichi, AOKI YOSHITSUGU, YAMASHITA Yuichi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> NCNP					
<b>Course Purpose and Outline</b> The nervous system is a very fine and complex organ to elicit the higher brain function and its malfunction causes a variety of neurological and psychiatric disorders in humans. In this lecture, students learn the structure, development and function of the normal nervous and muscle systems as well as pathology of developmental disorders, psychiatric disorders, neurological diseases and muscle diseases. Students also study the latest progress of advanced remedy for neuromuscular diseases. The practice is held at NCNP (National Center of Neurology and Psychiatry).					
<b>Course Objective(s)</b> To know the basic structure and the developmental machinery of the nervous system of mammals including humans. To understand the pathology of some neuropsychiatric diseases.					
<b>Lecture Style</b> The size of the class is small. A few students are supervised by a senior scientist.					
<b>Course Outline</b> Students should learn the structure, development and function of the nervous and muscle systems as well as experimental skills required for their research. Each member should give a talk at Journal Club and Research Progress. Advices to develop members' presentation skills will be given.					
<b>Grading System</b> We evaluate students generally based on presentations at meetings in addition to attendance at practices.					
<b>Prerequisite Reading</b>					
<b>Email</b> Mikio Hoshino:hoshino@ncnp.go.jp					
<b>Instructor's Contact Information</b> Mikio Hoshino: Mon-Fri 9:00~18:00					

<b>Lecture No</b>	041296				
<b>Subject title</b>	Laboratory practice of NCNP Brain Physiology and Pathology	<b>Subject ID</b>			
<b>Instructors</b>	Mikio Hoshino, Ichinohe Noritaka, HANAKAWA TAKASHI, GOTOH Yuichi, AOKI YOSHITSUGU, YAMASHITA Yuichi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> NCNP					
<b>Course Purpose and Outline</b> Our goal is to elucidate the molecular machinery underlying physiology and pathology of the nervous and muscle systems, which contributes to diagnosis and treatment of psychiatric, neurological and muscle diseases.					
<b>Course Objective(s)</b> Presentation at conferences. Acceptance of papers.					
<b>Lecture Style</b> Each student is supervised by a senior scientist.					
<b>Course Outline</b> Design the project, experiments, analysis of results, preparation of papers.					
<b>Grading System</b> We evaluate students generally based on progress reports on their studies and presentations at meetings in addition to accepted papers.					
<b>Prerequisite Reading</b>					
<b>Exam eligibility</b> The nervous system is a very fine and complex organ to elicit the higher brain function and its malfunction causes a variety of neurological and psychiatric disorders in humans. In this lecture, students learn the structure, development and function of the normal nervous and muscle systems as well as pathology of developmental disorders, psychiatric disorders, neurological diseases and muscle diseases. Students also study the latest progress of advanced remedy for neuromuscular diseases. The laboratory practice is held at NCNP (National Center of Neurology and Psychiatry).					
<b>Email</b> Mikio Hoshino:hoshino@ncnp.go.jp					
<b>Instructor's Contact Information</b> Mikio Hoshino:Mon–Fri 9:00~18:00					

<b>Lecture No</b>	041297				
<b>Subject title</b>	Lecture of Immune Regulation	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced					
<b>Course Purpose and Outline</b>					
The aim of this course is to understand how the immune system is organized and regulated to protect our body from the attack of pathogens, and to explore the molecular mechanisms underlying immune-related disorders, including allergy, autoimmune diseases, cancers, and chronic infections.					
<b>Course Objective(s)</b>					
Students gain an understanding of basic aspects of the structure and functions of the immune system and describe the applied aspects of immunology such as defense mechanism, allergy and autoimmunity.					
<b>Lecture Style</b>					
In a small group, with extensive discussion and bench works.					
<b>Course Outline</b>					
Goals/outline: Lectures are given regarding the front line researches on molecular mechanisms underlying the development and activation of immune cells as well as their functions in vivo. In particular, lectures focus on the latest topics about the roles of basophils in protective immunity and allergic reactions, the engineered animal models of allergy, and the in vivo imaging of allergic reaction.					
<b>Grading System</b>					
Evaluating the planning of experiments, the progress in the planned experiments, the presentation of data in the progress meeting, and the discussion during lectures and practice.					
<b>Prerequisite Reading</b>					
Start reading any chapter of your interest in the textbooks listed below.					
<b>Reference Materials</b>					
1. Immunobiology 9th Edition (2016), Garland Science 2. Cellular and Molecular Immunology 9th Edition (2017), Elsevier					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					



<b>Lecture No</b>	041298				
<b>Subject title</b>	Practice of Immune Regulation	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	To be announced				
<b>Course Purpose and Outline</b>	The aim of this course is to understand how the immune system is organized and regulated to protect our body from the attack of pathogens, and to explore the molecular mechanisms underlying immune-related disorders, including allergy, autoimmune diseases, cancers, and chronic infections.				
<b>Course Objective(s)</b>	Students gain an understanding of basic aspects of the structure and functions of the immune system and describe the applied aspects of immunology such as defense mechanism, allergy and autoimmunity.				
<b>Lecture Style</b>	In a small group, with extensive discussion and bench works.				
<b>Course Outline</b>	Goals/Outline: Access to and analysis of the database related to immunology, including DNA and protein sequences, and their 3D-structure.				
<b>Grading System</b>	Evaluating the planning of experiments, the progress in the planned experiments, the presentation of data in the progress meeting, and the discussion during lectures and practice.				
<b>Prerequisite Reading</b>	Start reading any chapter of your interest in the textbooks listed below.				
<b>Reference Materials</b>	<ol style="list-style-type: none"> <li>1. Immunobiology 9th Edition (2016), Garland Science</li> <li>2. Cellular and Molecular Immunology 9th Edition (2017), Elsevier</li> </ol>				
<b>Important Course Requirements</b>	None				
<b>Note(s) to Students</b>	None				

<b>Lecture No</b>	041299				
<b>Subject title</b>	Laboratory practice of Immune Regulation			<b>Subject ID</b>	
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced					
<b>Course Purpose and Outline</b>					
The aim of this course is to understand how the immune system is organized and regulated to protect our body from the attack of pathogens, and to explore the molecular mechanisms underlying immune-related disorders, including allergy, autoimmune diseases, cancers, and chronic infections.					
<b>Course Objective(s)</b>					
Students gain an understanding of basic aspects of the structure and functions of the immune system and describe the applied aspects of immunology such as defense mechanism, allergy and autoimmunity.					
<b>Lecture Style</b>					
In a small group, with extensive discussion and bench works.					
<b>Course Outline</b>					
Goals/Outline:					
–Analyze the molecules involved in the differentiation, activation and migration of basophils in vitro and in vivo by using biochemical and genetic approaches.					
–Establish engineered animal models of allergic disorders, and understand the cellular and molecular mechanism underlying the diseases, leading to the development of novel strategies for prevention and treatment of the diseases.					
<b>Grading System</b>					
Evaluating the planning of experiments, the progress in the planned experiments, the presentation of data in the progress meeting, and the discussion during lectures and practice.					
<b>Prerequisite Reading</b>					
Start reading any chapter of your interest in the textbooks listed below.					
<b>Reference Materials</b>					
1. Immunobiology 9th Edition (2016), Garland Science					
2. Cellular and Molecular Immunology 9th Edition (2017), Elsevier					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					

<b>Lecture No</b>	041300				
<b>Subject title</b>	Lecture of Molecular Virology	<b>Subject ID</b>			
<b>Instructors</b>	YAMAOKA SHIYOJI, TAKEUCHI HIROAKI, YOSHIDA TAKESHI, SUKEGAWA Sayaka]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> On the 17th floor of M&D Tower					
<b>Course Purpose and Outline</b> To learn general knowledge of virology and experimental techniques.					
<b>Course Objective(s)</b> To understand the virological research and analyze the experimental results for reaching the conclusion.					
<b>Lecture Style</b> No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.					
<b>Course Outline</b> Goals/outline: Learn the latest progress in the basic and clinical research of virology from the molecular and immunological view points. Language will be English when a foreign student joins.					
<b>Grading System</b> Students will be evaluated comprehensively on the basis of his/her participation in discussion, practice and experiments as well as research outcome, presentation and involvement in research meetings.					
<b>Prerequisite Reading</b> Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.					
<b>Reference Materials</b> Fields Virology, Medical Microbiology and Infection at a Glance					
<b>Important Course Requirements</b> Nothing particular					
<b>Note(s) to Students</b> The number of students joining the programs will be limited to 10.					
<b>Email</b> YAMAOKA SHIYOJI:shojmmb@tmd.ac.jp					
<b>Instructor's Contact Information</b> YAMAOKA SHIYOJI:Every Wednesday, AM.10:00-PM.2:00 the 17th floor of M&D Tower, Professor's office					

<b>Lecture No</b>	041301				
<b>Subject title</b>	Practice of Molecular Virology	<b>Subject ID</b>			
<b>Instructors</b>	YAMAOKA SHIYOJI, TAKEUCHI HIROAKI, YOSHIDA TAKESHI, SUKEGAWA Sayaka				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> On the 17th floor of M&D Tower					
<b>Course Purpose and Outline</b> To learn general knowledge of virology and experimental techniques.					
<b>Course Objective(s)</b> To understand the virological research and analyze the experimental results for reaching the conclusion.					
<b>Lecture Style</b> No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.					
<b>Course Outline</b> Goals/Outline: Understand experimental procedures for virology, bacteriology, immunology and molecular cell biology to prepare research article.					
<b>Grading System</b> Students will be evaluated comprehensively on the basis of his/her participation in discussion, practice and experiments as well as research outcome, presentation and involvement in research meetings.					
<b>Prerequisite Reading</b> Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.					
<b>Reference Materials</b> Fields Virology, Medical Microbiology and Infection at a Glance					
<b>Important Course Requirements</b> Nothing particular					
<b>Note(s) to Students</b> The number of students joining the programs will be limited to 10.					
<b>Email</b> YAMAOKA SHIYOJI:shojmmb@tmd.ac.jp					
<b>Instructor's Contact Information</b> YAMAOKA SHIYOJI:Every Wednesday, AM.10:00–PM.2:00 the 17th floor of M&D Tower, Professor's office					

<b>Lecture No</b>	041302				
<b>Subject title</b>	Laboratory practice of Molecular Virology			<b>Subject ID</b>	
<b>Instructors</b>	YAMAOKA SHIYOJI, TAKEUCHI HIROAKI, YOSHIDA TAKESHI, SUKEGAWA Sayaka				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
On the 17th floor of M&D Tower					
<b>Course Purpose and Outline</b>					
To learn general knowledge of virology and experimental techniques.					
<b>Course Objective(s)</b>					
To understand the virological research and analyze the experimental results for reaching the conclusion.					
<b>Lecture Style</b>					
No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.					
<b>Course Outline</b>					
Goals/Outline: Learn and acquire experimental procedures and techniques. Special attention will be paid to handling pathogens. Evaluate experimental results and plan new experiments. English will be used for foreign students.					
<b>Grading System</b>					
Students will be evaluated comprehensively on the basis of his/her participation in discussion, practice and experiments as well as research outcome, presentation and involvement in research meetings.					
<b>Prerequisite Reading</b>					
Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.					
<b>Reference Materials</b>					
Fields Virology, Medical Microbiology and Infection at a Glance					
<b>Important Course Requirements</b>					
Nothing particular					
<b>Note(s) to Students</b>					
The number of students joining the programs will be limited to 10.					
<b>Email</b>					
YAMAOKA SHIYOJI:shojmmb@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
YAMAOKA SHIYOJI:Every Wednesday, AM.10:00-PM.2:00 the 17th floor of M&D Tower, Professor's office					

<b>Lecture No</b>	041303				
<b>Subject title</b>	Lecture of Immunotherapeutics	<b>Subject ID</b>			
<b>Instructors</b>	MASUDA TAKAO, HASEGAWA ATSUHIKO, NAGANO YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office and laboratory at the M & D tower 17 th floor.					
<b>Course Purpose and Outline</b>					
Our research area is in between clinical and basic science, involving immunology, microbiology, and molecular biology. We participate in education for undergraduate medical students in basic immunology and a part of clinical immunology. For graduate students, we provide opportunities to research mechanisms of infectious diseases and develop immunological therapeutics.					
<b>Course Objective(s)</b>					
We investigate the disease mechanisms of human retroviral infection, such as AIDS caused by human immunodeficiency virus type 1 (HIV-1) and adult T-cell leukemia (ATL) caused by human T-cell leukemia virus type I (HTLV-I). These diseases are not simply explained by the direct pathogenic effects of the viruses, but influenced by a complex interplay between viruses and the host immune system. The aim of our research is the understanding disease mechanisms and the development of prophylactic and therapeutic strategies in these viruses infection. In order to conduct experiments of this area, students will be trained for tissue culture, immunological methods, molecular biological methods, and handling infectious materials and animals.					
<b>Lecture Style</b>					
Personal instruction by the supervisor, and total discussion at a seminar.					
<b>Course Outline</b>					
【Outline】 To understand disease mechanisms and develop new therapies of persistent viral infection, we focus on recently published papers in related areas including clinical science, immunology, microbiology, and molecular biology in the seminar. The seminar is mainly in English and all the students and stuffs in the laboratory study the paper with active discuss. Every other Monday (12:30-14:30)					
<b>Grading System</b>					
Evaluation will be made based on the attendance and performance at the seminar and practice.					
<b>Prerequisite Reading</b>					
Basic immunological knowledge is required.					
<b>Reference Materials</b>					
<a href="http://www.tmd.ac.jp/english/faculties/graduate_school/index.html">http://www.tmd.ac.jp/english/faculties/graduate_school/index.html</a>					
<b>Important Course Requirements</b>					
The students make presentation on their study periodically in seminars.					

<b>Lecture No</b>	041304				
<b>Subject title</b>	Practice of Immunotherapeutics	<b>Subject ID</b>			
<b>Instructors</b>	MASUDA TAKAO, HASEGAWA ATSUSHIKO, NAGANO YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office and laboratory at the M & D tower 17 th floor.					
<b>Course Purpose and Outline</b>					
Our research area is in between clinical and basic science, involving immunology, microbiology, and molecular biology. We participate in education for undergraduate medical students in basic immunology and a part of clinical immunology. For graduate students, we provide opportunities to research mechanisms of infectious diseases and develop immunological therapeutics.					
<b>Course Objective(s)</b>					
We investigate the disease mechanisms of human retroviral infection, such as AIDS caused by human immunodeficiency virus type 1 (HIV-1) and adult T-cell leukemia (ATL) caused by human T-cell leukemia virus type I (HTLV-I). These diseases are not simply explained by the direct pathogenic effects of the viruses, but influenced by a complex interplay between viruses and the host immune system. The aim of our research is the understanding disease mechanisms and the development of prophylactic and therapeutic strategies in these viruses infection. In order to conduct experiments of this area, students will be trained for tissue culture, immunological methods, molecular biological methods, and handling infectious materials and animals.					
<b>Lecture Style</b>					
Personal instruction by the supervisor, and total discussion at a seminar.					
<b>Course Outline</b>					
【Outline】 We handle human materials that are infected with human retroviruses or other viruses. The students will be trained for handling biohazardous materials. Some of the students need skill to handle experimental animals (mice and rats). Other techniques required in our research area include cell and tissue culture, flow cytometry, PCR, immunoblotting, etc. The students will be trained for these skills. First Monday (15:010–17:00)					
<b>Grading System</b>					
Evaluation will be made based on the attendance and performance at the seminar and practice.					
<b>Prerequisite Reading</b>					
Basic immunological knowledge is required.					
<b>Reference Materials</b>					
<a href="http://www.tmd.ac.jp/english/faculties/graduate_school/index.html">http://www.tmd.ac.jp/english/faculties/graduate_school/index.html</a>					
<b>Important Course Requirements</b>					
The students make presentation on their study periodically in seminars.					

<b>Lecture No</b>	041305				
<b>Subject title</b>	Laboratory practice of Immunotherapeutics			<b>Subject ID</b>	
<b>Instructors</b>	MASUDA TAKAO, HASEGAWA ATSUHIKO, NAGANO YOSHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Office and laboratory at the M & D tower 17 th floor.					
<b>Course Purpose and Outline</b>					
Our research area is in between clinical and basic science, involving immunology, microbiology, and molecular biology. We participate in education for undergraduate medical students in basic immunology and a part of clinical immunology. For graduate students, we provide opportunities to research mechanisms of infectious diseases and develop immunological therapeutics.					
<b>Course Objective(s)</b>					
We investigate the disease mechanisms of human retroviral infection, such as AIDS caused by human immunodeficiency virus type 1 (HIV-1) and adult T-cell leukemia (ATL) caused by human T-cell leukemia virus type I (HTLV-I). These diseases are not simply explained by the direct pathogenic effects of the viruses, but influenced by a complex interplay between viruses and the host immune system. The aim of our research is the understanding disease mechanisms and the development of prophylactic and therapeutic strategies in these viruses infection. In order to conduct experiments of this area, students will be trained for tissue culture, immunological methods, molecular biological methods, and handling infectious materials and animals.					
<b>Lecture Style</b>					
Personal instruction by the supervisor, and total discussion at a seminar.					
<b>Course Outline</b>					
【Outline】 We have the P1, P2 and P3 facilities in our laboratory. The flowcytometer is placed in the P2 facility so that the clinical materials can be analyzed immediately. The infectious materials are manipulated inside the safety cabinets in the P2 and P3. We also run regular molecular cloning, quantitative PCR, immunoblot analyses in a P1 area. The animal experiments will be performed in the central experimental animal center.					
<b>Grading System</b>					
Evaluation will be made based on the attendance and performance at the seminar and practice.					
<b>Prerequisite Reading</b>					
Basic immunological knowledge is required.					
<b>Reference Materials</b>					
<a href="http://www.tmd.ac.jp/english/faculties/graduate_school/index.html">http://www.tmd.ac.jp/english/faculties/graduate_school/index.html</a>					
<b>Important Course Requirements</b>					
The students make presentation on their study periodically in seminars.					



<b>Lecture No</b>	041306				
<b>Subject title</b>	Lecture of Cellular and Environmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	HARA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
It is mainly performed in the department.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to develop the ability to perform the following. 1. Find out problems in an environmental variation of a living organism. 2. Conceive the experimental ways of coping for the problems solving. 3. Prove the validity of the way. 4. Evaluate the results correctly.					
<b>Course Objective(s)</b>					
The student of this course can find out his/her own task from the problems in an environmental variation of a living organism, conceive the experimental ways of coping for the task, prove the validity of the way, and evaluate the results correctly.					
<b>Lecture Style</b>					
It is performed in an individual or a seminar form for few students.					
<b>Course Outline</b>					
Goals/outline: The organism has been influenced by the environment, has been adapted for the environment, has formed the environment, and has evolved. The organism exists as a part of earth environment, and it is thought that each structure and function of an organism is necessary for the survival plan against the environment. The interaction of each cell in a multicellular organism and the microenvironment on which it was put is not exceptional including the process of differentiation. In order to understand the response and adaptation of an organism (cell) against an environmental alteration, the interaction mechanisms are explained.					
<b>Grading System</b>					
It is performed based on the situation of attendance to lectures, practice, and experiments (80%), and the situation of presentation to academic meeting and/or journal about the details of your research (20%).					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mhara.ric@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AM.10:00-PM.6:00 Instructor's office, B1, Building 8 South					

<b>Lecture No</b>	041307				
<b>Subject title</b>	Practice of Cellular and Environmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	HARA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
It is mainly performed in the department.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to develop the ability to perform the following. 1. Find out problems in an environmental variation of a living organism. 2. Conceive the experimental ways of coping for the problems solving. 3. Prove the validity of the way. 4. Evaluate the results correctly.					
<b>Course Objective(s)</b>					
The student of this course can find out his/her own task from the problems in an environmental variation of a living organism, conceive the experimental ways of coping for the task, prove the validity of the way, and evaluate the results correctly.					
<b>Lecture Style</b>					
It is performed in an individual or a seminar form for few students.					
<b>Course Outline</b>					
Goals/Outline: In advancing a study, we discuss about the following: (1) examination of the related paper, and extraction of controversial points, (2) evaluation against the performed experimental procedure, (3) reliability of the experimental results, and (4) concluded points. Furthermore, we plan an experimental design about the new direction drawn from the discussion, and examine the validity.					
<b>Grading System</b>					
It is performed based on the situation of attendance to lectures, practice, and experiments (80%), and the situation of presentation to academic meeting and/or journal about the details of your research (20%).					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mhara.rio@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AM.10:00–PM.6:00 Instructor's office, B1, Building 8 South					

<b>Lecture No</b>	041308				
<b>Subject title</b>	Laboratory practice of Cellular and Environmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	HARA MASAYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
It is mainly performed in the department.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to develop the ability to perform the following. 1. Find out problems in an environmental variation of a living organism. 2. Conceive the experimental ways of coping for the problems solving. 3. Prove the validity of the way. 4. Evaluate the results correctly.					
<b>Course Objective(s)</b>					
The student of this course can find out his/her own task from the problems in an environmental variation of a living organism, conceive the experimental ways of coping for the task, prove the validity of the way, and evaluate the results correctly.					
<b>Lecture Style</b>					
It is performed in an individual or a seminar form for few students.					
<b>Course Outline</b>					
Goals/Outline: In this department, the experimental approaches from biochemistry, molecular biology, and cell biology are mainly performed. Therefore, these procedures must enough become skilled, simultaneously must be understood about the principle.					
<b>Grading System</b>					
It is performed based on the situation of attendance to lectures, practice, and experiments (80%), and the situation of presentation to academic meeting and/or journal about the details of your research (20%).					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
mhara.ric@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AM.10:00-PM.6:00 Instructor's office, B1, Building 8 South					

<b>Lecture No</b>	041309				
<b>Subject title</b>	Lecture of Biodefense Research			<b>Subject ID</b>	
<b>Instructors</b>	OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced upon inquiry.					
<b>Course Purpose and Outline</b>					
The aim of this course is to understand the molecular basis of induction and failure of homeostasis by focusing on immune cells, tissue stem cells, and their functional interplay in the living body.					
<b>Course Objective(s)</b>					
Students should be able to understand differentiation and function of immune cells and tissue stem cells, and their abnormalities as possible causes of disease development.					
<b>Lecture Style</b>					
Small group or individual training/lesson will be given.					
<b>Course Outline</b>					
Goals/outline: Immune cells and tissue stem cells are essential for the maintenance of homeostasis in the body by eradicating invading pathogens and regenerating tissue cells, respectively. Based on the background, this course deal with immune cells playing a role in the host defense and tissue stem cells playing a role in the tissue regeneration, and introduce up-to-date information on differentiation and function of these cells and related disorders.					
<b>Grading System</b>					
Evaluating based on attendance, research reports, and discussion status at the course.					
<b>Prerequisite Reading</b>					
Basic understanding of immunology and stem cell biology is required before attending this course.					
<b>Reference Materials</b>					
Janeway's Immunobiology 8th edition					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
OTEKI TOSHIAKI: ohteki.bre@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
OTEKI TOSHIAKI: Every Monday, AM.10:00-PM.2:00, M&D Tower 19F, N1901 room					

<b>Lecture No</b>	041310				
<b>Subject title</b>	Practice of Biodefense Research	<b>Subject ID</b>			
<b>Instructors</b>	OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> To be announced upon inquiry.					
<b>Course Purpose and Outline</b> The aim of this course is to understand the molecular basis of induction and failure of homeostasis by focusing on immune cells, tissue stem cells, and their functional interplay in the living body.					
<b>Course Objective(s)</b> Students should be able to understand differentiation and function of immune cells and tissue stem cells, and their abnormalities as possible causes of disease development.					
<b>Lecture Style</b> Small group or individual training/lesson will be given.					
<b>Course Outline</b> Goals/Outline: This course deal with the latest research papers related to immunology and tissue stem cell biology. Students are expected and discuss the novelty and points remaining unsolved in these papers and the data weekly presented by themselves with supervisors in terms of their technical accuracy, immunological meaning, and future experimental design.					
<b>Grading System</b> Evaluating based on attendance, research reports, and discussion status at the course.					
<b>Prerequisite Reading</b> Basic understanding of immunology and stem cell biology is required before attending this course.					
<b>Reference Materials</b> Janeway's Immunobiology 8th edition					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> None					
<b>Email</b> OTEKI TOSHIAKI:ohteki.bre@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> OTEKI TOSHIAKI:Every Monday, AM.10:00–PM.2:00, M&D Tower 19F, N1901 room					

<b>Lecture No</b>	041311				
<b>Subject title</b>	Laboratory practice of Biodefense Research			<b>Subject ID</b>	
<b>Instructors</b>	OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
To be announced upon inquiry.					
<b>Course Purpose and Outline</b>					
The aim of this course is to understand the molecular basis of induction and failure of homeostasis by focusing on immune cells, tissue stem cells, and their functional interplay in the living body.					
<b>Course Objective(s)</b>					
Students should be able to understand differentiation and function of immune cells and tissue stem cells, and their abnormalities as possible causes of disease development.					
<b>Lecture Style</b>					
Small group or individual training/lesson will be given.					
<b>Course Outline</b>					
Goals/Outline: Students are expected to learn the basic techniques to prepare immune cells and tissue stem cells from various tissues of normal, transgenic, and gene-targeting mice, and manipulate differentiation and function of these cells ex vivo and in vivo.					
<b>Grading System</b>					
Evaluating based on attendance, research reports, and discussion status at the course.					
<b>Prerequisite Reading</b>					
Basic understanding of immunology and stem cell biology is required before attending this course.					
<b>Reference Materials</b>					
Janeway's Immunobiology 8th edition					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
None					
<b>Email</b>					
OTEKI TOSHIAKI: ohteki.bre@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
OTEKI TOSHIAKI: Every Monday, AM.10:00–PM.2:00, M&D Tower 19F, N1901 room					

<b>Lecture No</b>	041312				
<b>Subject title</b>	Lecture of Pathological Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	SHIMIZU SHIGEOMI, SHIMIZU NORIO, ARAKAWA SATOKO, HONDA SHINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Venue is changed depending on the program. Please ask Instructors.					
<b>Course Purpose and Outline</b> Cell death and autophagy are fundamental cellular function to regulate various biological events. This course will provide an overview of molecular mechanisms and physiological and pathological roles of "Cell death" and "Autophagy". This course will also provide a comparative overview of virus life cycles and strategies viruses use to infect and replicate in hosts. We will discuss virus structure and classification and the molecular basis of viral reproduction, and virus-host interactions.					
<b>Course Objective(s)</b> The first object of the course is to understand biological significance of "Cell death" and "Autophagy". The second object of the course is to describe at the molecular level the replication strategies of representative DNA and RNA viruses and the effects of virus infection on cell growth control and survival.					
<b>Lecture Style</b> Lecture is done by individual guidance or seminar for a few students. Lab is done by individual guidance.					
<b>Course Outline</b> Goals/outline: The lecture explains basic pathways of life phenomena causing variety of disease from the points of molecular, cellular, or organism level. Concretely, the lecture explains cell growth, cell death and cell division that are responsible for development, homeostasis, and disease based on these abnormalities. In virus treatment, we explained the molecular mechanisms of continuous infection of EB virus and HIV type I virus, and also explained the novel virus treatment.					
<b>Grading System</b> We evaluate the percentage of attendance at class. In some case, we set a report.					
<b>Prerequisite Reading</b> Students do not have to prepare for the class					
<b>Reference Materials</b> Molecular Biology of the Cell, Medical Virology					
<b>Important Course Requirements</b> nothing					
<b>Email</b> SHIMIZU SHIGEOMI:shimizu.pcb@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> SHIMIZU SHIGEOMI:Thursday 16:00-18:00 MD tower22floor Pathological Cell Biology Professor room					

<b>Lecture No</b>	041313				
<b>Subject title</b>	Practice of Pathological Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	SHIMIZU SHIGEOMI, SHIMIZU NORIO, ARAKAWA SATOKO, HONDA SHINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Venue is changed depending on the program. Please ask Instructors.					
<b>Course Purpose and Outline</b>					
Cell death and autophagy are fundamental cellular function to regulate various biological events. This course will provide an overview of molecular mechanisms and physiological and pathological roles of "Cell death" and "Autophagy". This course will also provide a comparative overview of virus life cycles and strategies viruses use to infect and replicate in hosts. We will discuss virus structure and classification and the molecular basis of viral reproduction, and virus-host interactions.					
<b>Course Objective(s)</b>					
The first object of the course is to understand biological significance of "Cell death" and "Autophagy". The second object of the course is to describe at the molecular level the replication strategies of representative DNA and RNA viruses and the effects of virus infection on cell growth control and survival.					
<b>Lecture Style</b>					
Lecture is done by individual guidance or seminar for a few students. Lab is done by individual guidance.					
<b>Course Outline</b>					
Goals/outline: The practice examines research papers about physiological and pathological cell function, especially focusing cell death and autophagy. The practice also studies strategies in life science research by a research drafting for investigation of cell function and its abnormality, analyses of results and simulations of discussion.					
<b>Grading System</b>					
We evaluate the percentage of attendance at class. In some case, we set a report.					
<b>Prerequisite Reading</b>					
Students do not have to prepare for the class					
<b>Reference Materials</b>					
Molecular Biology of the Cell, Medical Virology					
<b>Important Course Requirements</b>					
nothing					
<b>Email</b>					
SHIMIZU SHIGEOMI:shimizu.pcb@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SHIMIZU SHIGEOMI:Thursday 16:00–18:00 MD tower22floor Pathological Cell Biology Professor room					



<b>Lecture No</b>	041314				
<b>Subject title</b>	Laboratory practice of Pathological Cell Biology			<b>Subject ID</b>	
<b>Instructors</b>	SHIMIZU SHIGEOMI, SHIMIZU NORIO, ARAKAWA SATOKO, HONDA SHINYA				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Venue is changed depending on the program. Please ask Instructors.					
<b>Course Purpose and Outline</b>					
Cell death and autophagy are fundamental cellular function to regulate various biological events. This course will provide an overview of molecular mechanisms and physiological and pathological roles of "Cell death" and "Autophagy". This course will also provide a comparative overview of virus life cycles and strategies viruses use to infect and replicate in hosts. We will discuss virus structure and classification and the molecular basis of viral reproduction, and virus-host interactions.					
<b>Course Objective(s)</b>					
The first object of the course is to understand biological significance of "Cell death" and "Autophagy". The second object of the course is to describe at the molecular level the replication strategies of representative DNA and RNA viruses and the effects of virus infection on cell growth control and survival.					
<b>Lecture Style</b>					
Lecture is done by individual guidance or seminar for a few students. Lab is done by individual guidance.					
<b>Course Outline</b>					
Goals/outline: The lab focuses on the acquisition of experimental techniques such as analyses of gene-targeting mice, analytic methods of cellular and organellar function. We also focus on the practice of research drafting. In virus treatment, we focus on the acquisition of techniques for detection of EB virus and HIV type I virus. Methods of cell culture for virus detection are also acquired.					
<b>Grading System</b>					
We evaluate the percentage of attendance at class. In some case, we set a report.					
<b>Prerequisite Reading</b>					
Students do not have to prepare for the class					
<b>Reference Materials</b>					
Molecular Biology of the Cell, Medical Virology					
<b>Important Course Requirements</b>					
nothing					
<b>Email</b>					
SHIMIZU SHIGEOMI:shimizu.pcb@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SHIMIZU SHIGEOMI:Thursday 16:00–18:00 MD tower22floor Pathological Cell Biology Professor room					

<b>Lecture No</b>	041315				
<b>Subject title</b>	Lecture of Lipid Biology	<b>Subject ID</b>			
<b>Instructors</b>	SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<p>Partial classes are taught in English.  When an international student registers this subject for credits, this course is taught in English.</p>					
<b>Lecture place</b> M&D Tower 19F South, Department of Biochemical Pathophysiology/Lipid Biology					
<b>Course Purpose and Outline</b> This course will focus on the pathophysiological conditions emanate from dysregulation of cellular lipid metabolism.					
<b>Course Objective(s)</b>					
<p>The objective of the course is to provide the students with current knowledge on the role of lipid metabolism in the integrity of cellular membranes, energy storage/consumption and intra/extracellular signal transduction. Further, students will recognize the relationship between lipid metabolism and a wide variety of diseases such as cancer, immune disease, inflammatory disease, bone disease, neurological disorder and cardiovascular disease. The new methodology of lipid biology by virtue of the recent progress in LC-MS/MS technique will also be discussed in the context of medical sciences.</p>					
<b>Lecture Style</b>					
Lecture and small group discussion.					
<b>Course Outline</b>					
Goals/outline:					
Upon completion of this course, students are expected to effectively:					
<ol style="list-style-type: none"> <li>1. Describe the chemical nature of the various classes of lipids and cellular membranes;</li> <li>2. Discuss the synthesis/degradation/modification of fatty acids and complex lipids;</li> <li>3. Describe the relationship between lipid metabolism and various diseases;</li> <li>4. Understand the basic strategies for lipid biology (cell biological, biochemical, mass spectrometric analyses)</li> </ol>					
<b>Grading System</b>					
A comprehensive evaluation: participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b>					
It is advisable to recognize limitations of the current knowledge and appreciate unresolved questions in the medical/biological field that you are interested in in particular.					
<b>TextBook</b>					
細胞の分子生物学／Bruce Alberts [ほか] 著；青山聖子 [ほか] 翻訳,Alberts, Bruce,Johnson, Alexander D.,Lewis, Julian,Morgan, David Owen,Raff, Martin C.,Roberts, K. (Keith),Walter, Peter,青山, 聖子,齊藤, 英裕,滋賀, 陽子,田口, マミ子,滝田, 郁子,中塚, 公子,羽田, 裕子,船田, 晶子,宮下, 悦子,中村, 桂子,松原, 謙一,.;ニュートンプレス, 2017					
<b>Reference Materials</b>					
<p>ガイドン生理学／ガイドン [原著],John E.Hall 著,石川義弘, 岡村康司, 尾仲達史, 河野憲二 総監訳,金子猛, 北村義浩, 藤乘嗣泰, 松嶋成志 監訳,Guyton, Arthur C,Hall, John Edward, 1946-,石川, 義弘,岡村, 康司,尾仲, 達史,金子, 猛, 呼吸器内科学,北村, 義浩,藤乘, 嗣泰,.;エルゼビア・ジャパン, 2018</p> <p>Molecular Biology of the CELL (Garland Science)</p> <p>Original research papers and review articles that we have published.</p>					
<b>Important Course Requirements</b>					
Capable of communicating with lab members in English or Japanese language.					
<b>Reference URL</b>					
<a href="https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home">https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home</a>					
<b>Email</b> SASAKI Takehiko:tsaspip@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959					

<b>Lecture No</b>	041316				
<b>Subject title</b>	Practice of Lipid Biology	<b>Subject ID</b>			
<b>Instructors</b>	SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<p>Partial classes are taught in English. When an international student registers this subject for credits, this course is taught in English.</p>					
<b>Lecture place</b>					
M&D Tower 19F South, Department of Biochemical Pathophysiology/Lipid Biology					
<b>Course Purpose and Outline</b>					
This course will focus on the pathophysiological conditions emanate from dysregulation of cellular lipid metabolism.					
<b>Course Objective(s)</b>					
The objective of the course is to provide the students with current knowledge on the role of lipid metabolism in the integrity of cellular membranes, energy storage/consumption and intra/extracellular signal transduction. Further, students will recognize the relationship between lipid metabolism and a wide variety of diseases such as cancer, immune disease, inflammatory disease, bone disease, neurological disorder and cardiovascular disease. The new methodology of lipid biology by virtue of the recent progress in LC-MS/MS technique will also be discussed in the context of medical sciences.					
<b>Lecture Style</b>					
Lecture and small group discussion.					
<b>Course Outline</b>					
Goals/Outline: Training program will be provided to master the basic skills to characterize biological lipids extracted from cell lines, primary cultured cells, specimens obtained from gene-targeted mice and clinical samples.					
<b>Grading System</b>					
A comprehensive evaluation: participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b>					
It is advisable to recognize limitations of the current knowledge and appreciate unresolved questions in the medical/biological field that you are interested in in particular.					
<b>TextBook</b>					
細胞の分子生物学／Bruce Alberts [ほか] 著；青山聖子 [ほか] 翻訳,Alberts, Bruce,Johnson, Alexander D.,Lewis, Julian,Morgan, David Owen,Raff, Martin C.,Roberts, K. (Keith),Walter, Peter,青山, 聖子,齊藤, 英裕,滋賀, 陽子,田口, マミ子,滝田, 郁子,中塚, 公子,羽田, 裕子,船田, 晶子,宮下, 悦子,中村, 桂子,松原, 謙一,.;ニュートンプレス, 2017					
<b>Reference Materials</b>					
ガイドン生理学／ガイドン [原著],John E.Hall 著,石川義弘, 岡村康司, 尾仲達史, 河野憲二 総監訳,金子猛, 北村義浩, 藤乘嗣泰, 松嶋成志, 監訳,Guyton, Arthur C,Hall, John Edward, 1946-,石川, 義弘,岡村, 康司,尾仲, 達史,金子, 猛, 呼吸器内科学,北村, 義浩,藤乘, 嗣泰,.;エルゼビア・ジャパン, 2018					
Molecular Biology of the CELL (Garland Science) Original research papers and review articles that we have published.					
<b>Important Course Requirements</b>					
Capable of communicating with lab members in English or Japanese language.					
<b>Reference URL</b>					
<a href="https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home">https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home</a>					
<b>Email</b> SASAKI Takehiko:tsaspip@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959					

<b>Lecture No</b>	041317				
<b>Subject title</b>	Laboratory practice of Lipid Biology			<b>Subject ID</b>	
<b>Instructors</b>	SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English. When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D Tower 19F South, Department of Biochemical Pathophysiology/Lipid Biology					
<b>Course Purpose and Outline</b> This course will focus on the pathophysiological conditions emanate from dysregulation of cellular lipid metabolism.					
<b>Course Objective(s)</b> The objective of the course is to provide the students with current knowledge on the role of lipid metabolism in the integrity of cellular membranes, energy storage/consumption and intra/extracellular signal transduction. Further, students will recognize the relationship between lipid metabolism and a wide variety of diseases such as cancer, immune disease, inflammatory disease, bone disease, neurological disorder and cardiovascular disease. The new methodology of lipid biology by virtue of the recent progress in LC-MS/MS technique will also be discussed in the context of medical sciences.					
<b>Lecture Style</b> Lecture and small group discussion.					
<b>Course Outline</b> Goals/Outline: From the lipid point of view, our lab aims to elucidate the molecular mechanisms underlying pathophysiology of intractable diseases including cancers and inflammatory diseases, which will be useful in developing novel diagnostic and therapeutic approaches for treatment of the diseases. Each graduate student sets their own research theme after consultation with the supervisors. Students will conduct experiments using techniques such as DNA sequencing, FACS analysis, western blotting, genome editing and reverse phase LC-MS/MS, obtain data, interpret the results and write original papers with the supervisors.					
<b>Grading System</b> A comprehensive evaluation: participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b> It is advisable to recognize limitations of the current knowledge and appreciate unresolved questions in the medical/biological field that you are interested in in particular.					
<b>TextBook</b> 細胞の分子生物学／Bruce Alberts [ほか] 著；青山聖子 [ほか] 翻訳Alberts, Bruce,Johnson, Alexander D.,Lewis, Julian,Morgan, David Owen,Raff, Martin C.,Roberts, K. (Keith),Walter, Peter,青山, 聖子,齊藤, 英裕,滋賀, 陽子,田口, マミ子,滝田, 郁子,中塚, 公子,羽田, 裕子,船田, 晶子,宮下, 悦子,中村, 桂子,松原, 謙一,.;ニュートンプレス, 2017 Biochemistry of lipids, lipoproteins and membranes／edited by Neale D. Ridgway and Roger S. McLeod,Ridgway, Neale D.,McLeod, Roger S. : Elsevier, 2015					
<b>Reference Materials</b> ガイドン生理学／ガイドン [原著],John E.Hall 著,石川義弘, 岡村康司, 尾仲達史, 河野憲二 総監訳金子猛, 北村義浩, 藤乗嗣泰, 松嶋成志 監訳Guyton, Arthur C,Hall, John Edward, 1946-,石川, 義弘,岡村, 康司,尾仲, 達史,金子, 猛, 呼吸器内科学,北村, 義浩,藤乗, 嗣泰,.;エルゼビア・ジャパン, 2018 Molecular Biology of the CELL (Garland Science) Original research papers and review articles that we have published.					
<b>Important Course Requirements</b> Capable of communicating with lab members in English or Japanese language.					
<b>Reference URL</b> <a href="https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home">https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home</a>					
<b>Email</b> SASAKI Takehiko:tsaspip@tmd.ac.jp					
<b>Instructor's Contact Information</b> SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959					

<b>Lecture No</b>	041318				
<b>Subject title</b>	Lecture of Pediatrics and Developmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	MORIO TOMOHIRO, TAKAGI MASATOSHI, DOI SHIYOZABURO, KANEGANE HIROKAZU, MORI MASA AKI, IMAI KOSUKE, KASHIMADA KENICHI, TAKI ATSUKO, YANAGIMACHI Masakatsu, ISODA Takeshi, MIZUNO Tomoko, TAKASAWA Kei, ISHII Taku, UDAGAWA Tomohiro, SUZUKI TOMONORI, SHIDEI Tsunanori, AKUTSU Yuuko, HOSOKAWA SUSUMU, YAMASHITA Motoi, OKANO Tsubasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Research meeting and small discussions with PI are held in postgraduate seminar room in Level 9 of M&D tower. The room of lab meetings and other seminars are not fixed and will be timely announced.					
<b>Course Purpose and Outline</b> The target of the course is learning the molecular mechanisms of organ development and cellular differentiation, leading to comprehensively understanding the pathophysiology of pediatric diseases. The goal of our research is to elucidate the molecular mechanisms of intractable and rare diseases in children and to develop innovative therapeutic strategies for the diseases.					
<b>Course Objective(s)</b> Learning ontogeny and development of human. Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.					
<b>Lecture Style</b> Format: Small grouped seminar Each student will be given an assignment. The given assignments can be shared with 2–3 students.					
<b>Course Outline</b> Goals/outline: Learning normal development and organogenesis during fetal, pediatric, pubertal period. Understanding the disorders of diseases caused by abnormal differentiation or development of the organs. Special lecture course: Understanding molecular and cellular pathogenesis of pediatric diseases as below Pediatric Immunology: Inborn Errors of Immunity (Primary Immunodeficiency, Autoinflammatory diseases, etc) Pediatric Hematology/Oncology: Childhood hematological disorders and malignancy Pediatric Endocrinology: Disorders of sex differentiation and other endocrinological diseases caused by genetic mutations. Pediatric Cardiology: Pulmonary hypertension Seminars and meetings Monday seminar: 6–7PM every Monday Special Seminar for post graduate students: 2–3/year, will be announced timely Journal club: Monday (1st, 3rd) Wednesday (2nd, 4th) 7–8AM Clinical conference: Morning conference 8–8:30AM from Monday to Friday Clinical Conference of hematology and immunology : 8:30–9:30AM Wednesday Lab meeting: 6:30–7:30PM Tuesday					
<b>Grading System</b> Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.					
<b>Prerequisite Reading</b> Basic approaches to practice of pediatrics and molecular cellular biology.					
<b>TextBook</b> Nelson textbook of pediatrics/[edited by] Robert M. Kliegman ... [et al.] ; editor emeritus Richard E. Behrman, Kliegman, Robert, Stanton, Bonita F., St Geme, Joseph W., III, Schor, Nina F., Behrman, Richard E., Nelson, Waldo E. (Waldo Emerson), : Elsevier, 2016 Molecular biology of the cell/Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, with problems by John Wilson, Tim Hunt, Johnson, Alexander D, Lewis, Julian, 1946–2014, Morgan, David Owen, 1958–, Wilson, John, 1944–, Hunt, Tim, 1943– : Garland Science, Taylor and Francis Group, 2015 Human Molecular Genetics 5th edition/Tom Strachan, Andrew Read: T&F/CRC PRESS, 2019					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Guidance and instruction can be done in English.					

<b>Lecture No</b>	041319				
<b>Subject title</b>	Practice of Pediatrics and Developmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	MORIO TOMOHIRO, TAKAGI MASATOSHI, DOI SHIYOZABURO, KANEGANE HIROKAZU, MORI MASAOKI, IMAI KOSUKE, KASHIMADA KENICHI, TAKI ATSUKO, YANAGIMACHI Masakatsu, ISODA Takeshi, MIZUNO Tomoko, TAKASAWA Kei, ISHII Taku, UDAGAWA Tomohiro, SUZUKI TOMONORI, SHIDEI Tsunanori, AKUTSU Yuuko, HOSOKAWA SUSUMU, YAMASHITA Motoi, OKANO Tsubasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Research meeting and small discussions with PI are held in postgraduate seminar room in Level 9 of M&D tower. The room of lab meetings and other seminars are not fixed and will be timely announced.					
<b>Course Purpose and Outline</b> The target of the course is learning the molecular mechanisms of organ development and cellular differentiation, leading to comprehensively understanding the pathophysiology of pediatric diseases. The goal of our research is to elucidate the molecular mechanisms of intractable and rare diseases in children and to develop innovative therapeutic strategies for the diseases.					
<b>Course Objective(s)</b> Learning ontogeny and development of human. Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.					
<b>Lecture Style</b> Format: Small grouped seminar Each student will be given an assignment. The given assignments can be shared with 2–3 students.					
<b>Course Outline</b> Goals/Outline: Learning the skills and the knowledge of physical and laboratory examination of the pediatric patients, Understanding the options of the therapies for the pediatric diseases. Hands on seminars Cardiology: UCG, EEG etc, monthly (3rd Friday 7–9PM) Neurology: EEG, Imaging studies, Polygraphs (4th Friday 7–9PM) Nephrology: Interpretation of renal biopsy samples etc., (4th Thursday 7–9PM) Hematology, Immunology: Planning diagnostic/therapeutic approach for hematologic/immunologic diseases. (Wednesday 8:30–9:30AM) Endocrinology: Planning diagnostic/therapeutic approach for Endocrinological diseases. (1st Friday 6:30–8:30PM) Neonatology: Learning basis for neonatal care (3rd Thursday, 7:30–9:00PM)					
<b>Grading System</b> Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.					
<b>Prerequisite Reading</b> Basic approaches to practice of pediatrics and molecular cellular biology.					
<b>TextBook</b> Nelson textbook of pediatrics/[edited by] Robert M. Kliegman ... [et al.] ; editor emeritus Richard E. Behrman, Kliegman, Robert, Stanton, Bonita F., St Geme, Joseph W., III, Schor, Nina F., Behrman, Richard E., Nelson, Waldo E. (Waldo Emerson), : Elsevier, 2016 Molecular biology of the cell/Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, with problems by John Wilson, Tim Hunt, Johnson, Alexander D., Lewis, Julian, 1946–2014, Morgan, David Owen, 1958–, Wilson, John, 1944–, Hunt, Tim, 1943– : Garland Science, Taylor and Francis Group, 2015 Human Molecular Genetics 5th edition/Tom Strachan, Andrew Read: T&F/CRC PRESS, 2019					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Guidance and instruction can be done in English.					

<b>Lecture No</b>	041320				
<b>Subject title</b>	Laboratory practice of Pediatrics and Developmental Biology	<b>Subject ID</b>			
<b>Instructors</b>	MORIO TOMOHIRO, TAKAGI MASATOSHI, DOI SHIYOZABURO, KANEGANE HIROKAZU, MORI MASAOKI, IMAI KOSUKE, KASHIMADA KENICHI, TAKI ATSUKO, YANAGIMACHI Masakatsu, ISODA Takeshi, MIZUNO Tomoko, TAKASAWA Kei, ISHII Taku, UDAGAWA Tomohiro, SUZUKI TOMONORI, SHIDEI Tsunanori, AKUTSU Yuuko, HOSOKAWA SUSUMU, YAMASHITA Motoi, OKANO Tsubasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Research meeting and small discussions with PI are held in postgraduate seminar room in Level 9 of M&D tower. The room of lab meetings and other seminars are not fixed and will be timely announced.					
<b>Course Purpose and Outline</b> The target of the course is learning the molecular mechanisms of organ development and cellular differentiation, leading to comprehensively understanding the pathophysiology of pediatric diseases. The goal of our research is to elucidate the molecular mechanisms of intractable and rare diseases in children and to develop innovative therapeutic strategies for the diseases.					
<b>Course Objective(s)</b> Learning ontogeny and development of human. Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.					
<b>Lecture Style</b> Format: Small grouped seminar Each student will be given an assignment. The given assignments can be shared with 2-3 students.					
<b>Course Outline</b> Goals/Outline: By learning the basic knowledge and skills in cellular biology, molecular biology, genetics, and physiology, cultivating technical skills to plan research strategies for clarifying pathophysiology of pediatric diseases. Primary goal (1) learning basic skills of genetics and molecular biology (2) learning strategies to identify the causative genes for pediatric diseases (3) learning the techniques to sort a population of cells into subpopulation, including flow Cytometry and Fluorescence-Activated Cell Sorting (FACS) Advanced Based on above skills, having a focused research project, e.g., identifying the pathophysiology and developing innovative therapeutic approaches for rare and intractable pediatric diseases.					
<b>Grading System</b> Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.					
<b>Prerequisite Reading</b> Basic approaches to practice of pediatrics and molecular cellular biology.					
<b>TextBook</b> Nelson textbook of pediatrics/[edited by] Robert M. Kliegman ... [et al.] ; editor emeritus Richard E. Behrman, Kliegman, Robert, Stanton, Bonita F., St Geme, Joseph W., III, Schor, Nina F., Behrman, Richard E., Nelson, Waldo E. (Waldo Emerson), : Elsevier, 2016 Molecular biology of the cell/Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, Peter Walter, with problems by John Wilson, Tim Hunt, Johnson, Alexander D, Lewis, Julian, 1946-2014, Morgan, David Owen, 1958-, Wilson, John, 1944-, Hunt, Tim, 1943- : Garland Science, Taylor and Francis Group, 2015 Human Molecular Genetics 5th edition/Tom Strachan, Andrew Read: T&F/CRC PRESS, 2019					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Guidance and instruction can be done in English.					

<b>Lecture No</b>	041321				
<b>Subject title</b>	Lecture of Rheumatology			<b>Subject ID</b>	
<b>Instructors</b>	YASUDA Shinnsuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> M&D Tower 13th floor					
<b>Course Purpose and Outline</b> The objectives of this program are to gain an accurate understanding of molecular and cellular pathology and therapy of rheumatic diseases, and to learn about methods to resolve various problems in clinical practice.					
<b>Course Objective(s)</b> The goal of this program is to acquire the ability to plan and conduct research that resolves issues in relation to diagnosis and treatment of rheumatic diseases.					
<b>Lecture Style</b> Small group meeting					
<b>Course Outline</b> Goals/outline: Understanding molecular and cellular pathology and treatment of rheumatic diseases					
<b>Grading System</b> Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.					
<b>Prerequisite Reading</b> It is preferable for students to acquire the general knowledge of rheumatic diseases.					
<b>Reference Materials</b> Standard medical textbooks					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> 10 students at maximum					



<b>Lecture No</b>	041322				
<b>Subject title</b>	Practice of Rheumatology	<b>Subject ID</b>			
<b>Instructors</b>	YASUDA Shinnsuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> M&D Tower 13th floor					
<b>Course Purpose and Outline</b> The objectives of this program are to gain an accurate understanding of molecular and cellular pathology and therapy of rheumatic diseases, and to learn about methods to resolve various problems in clinical practice.					
<b>Course Objective(s)</b> The goal of this program is to acquire the ability to plan and conduct research that resolves issues in relation to diagnosis and treatment of rheumatic diseases.					
<b>Lecture Style</b> Small group meeting					
<b>Course Outline</b> Goals/Outline: Familiarizing how pathology of rheumatic diseases is investigated for development of new treatments.					
<b>Grading System</b> Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.					
<b>Prerequisite Reading</b> It is preferable for students to acquire the general knowledge of rheumatic diseases.					
<b>Reference Materials</b> Standard medical textbooks					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> 10 students at maximum					

<b>Lecture No</b>	041323				
<b>Subject title</b>	Laboratory practice of Rheumatology	<b>Subject ID</b>			
<b>Instructors</b>	YASUDA Shinnsuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> M&D Tower 13th floor					
<b>Course Purpose and Outline</b> The objectives of this program are to gain an accurate understanding of molecular and cellular pathology and therapy of rheumatic diseases, and to learn about methods to resolve various problems in clinical practice.					
<b>Course Objective(s)</b> The goal of this program is to acquire the ability to plan and conduct research that resolves issues in relation to diagnosis and treatment of rheumatic diseases.					
<b>Lecture Style</b> Small group meeting					
<b>Course Outline</b> Goals/Outline: Investigating pathology of rheumatic diseases for development of new treatments.					
<b>Grading System</b> Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.					
<b>Prerequisite Reading</b> It is preferable for students to acquire the general knowledge of rheumatic diseases.					
<b>Reference Materials</b> Standard medical textbooks					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> 10 students at maximum					

<b>Lecture No</b>	041324				
<b>Subject title</b>	Lecture of Dermatology	<b>Subject ID</b>			
<b>Instructors</b>	OKOZEKI HIROO, NAMIKI TAKESHI, MUNETSUGU Takichi, UGAJINN Tsukasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	N/A				
<b>Course Purpose and Outline</b>	To study the pathology, Imuunodermatology, Physiology of the skin, To study the mechanism of skin diseases				
<b>Course Objective(s)</b>	To understand the pathogenesis of skin diseases				
<b>Lecture Style</b>	Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.				
<b>Course Outline</b>	Goals/outline: To understand a structure, function, imuunological roles, biological roles of the skin To understand the pathophysiological mechanism of skin diseases				
<b>Grading System</b>	Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.				
<b>Prerequisite Reading</b>	To understand the immunology and pathology				
<b>Reference Materials</b>	Lever's Histopathology of the skin, David E Elder, 2005. Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003				
<b>Important Course Requirements</b>	Nothing				

<b>Lecture No</b>	041325				
<b>Subject title</b>	Practice of Dermatology	<b>Subject ID</b>			
<b>Instructors</b>	YOKOZEKI HIROO, NAMIKI TAKESHI, MUNETSUGU Takichi, UGAJINN Tsukasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	N/A				
<b>Course Purpose and Outline</b>	To study the pathology, Immunodermatology, Physiology of the skin, To study the mechanism of skin diseases				
<b>Course Objective(s)</b>	To understand the pathogenesis of skin diseases				
<b>Lecture Style</b>	Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.				
<b>Course Outline</b>	Goals/Outline: To practice how to make a diagnosis of skin diseases by clinical and pathological examination.				
<b>Grading System</b>	Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.				
<b>Prerequisite Reading</b>	To understand the immunology and pathology				
<b>Reference Materials</b>	Lever's Histopathology of the skin, David E Elder, 2005. Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003				
<b>Important Course Requirements</b>	Nothing				

<b>Lecture No</b>	041326				
<b>Subject title</b>	Laboratory practice of Dermatology			<b>Subject ID</b>	
<b>Instructors</b>	YOKOZEKI HIROO, NAMIKI TAKESHI, MUNETSUGU Takichi, UGAJINN Tsukasa				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	N/A				
<b>Course Purpose and Outline</b>	To study the pathology, Immunodermatology, Physiology of the skin, To study the mechanism of skin diseases				
<b>Course Objective(s)</b>	To understand the pathogenesis of skin diseases				
<b>Lecture Style</b>	Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.				
<b>Course Outline</b>	<p>Goals/Outline:</p> <p>General:</p> <p>Etiological and immunological mechanisms of cutaneous allergic responses.</p> <p>Establishment of a potent therapeutic approach for treatment-resistant allergic skin diseases.</p> <p>Research projects:</p> <ol style="list-style-type: none"> <li>1. Biological significance of prostaglandin D2 and its receptors in skin inflammation.</li> <li>2. Mechanisms of eosinophil and basophil infiltration to the skin.</li> <li>3. Biosynthesis of prostanoids in basophils and contribution to skin diseases.</li> <li>4. Therapeutic approach for atopic dermatitis with STAT6 siRNA.</li> <li>5. Stable form of galectin-9 as a novel therapeutic tool for psoriasis.</li> <li>6. Analysis of scratching behavior in mouse model of skin inflammation.</li> <li>7. Development of potent therapeutic tools for a mouse model of angiosarcoma</li> <li>8. Analysis of skin diseases by using iPS cells induced epidermal sheets</li> </ol>				
<b>Grading System</b>	Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.				
<b>Prerequisite Reading</b>	To understand the immunology and pathology				
<b>Reference Materials</b>	Lever's Histopathology of the skin, David E Elder, 2005. Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003				
<b>Important Course Requirements</b>	Nothing				

<b>Lecture No</b>	041327				
<b>Subject title</b>	Lecture of NCCHD Child Health and Development			<b>Subject ID</b>	
<b>Instructors</b>	Hidenori Akutsu, ONODERA Masafumi, FUKAMI Maki, HATA Kenichiroh, MATSUMOTO Kenji, Shuji Takada				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)					
<b>Course Purpose and Outline</b>					
Our course purpose is to educate the developmental process of human life from the viewpoints of latest molecular biology and genetics. NCCHD Child Health and Development is to study the health and development of infants, children, adolescents, and young adults through basic science education and innovative research. We support to learn the Child Health Care and Development through educating and training by experts.					
<b>Course Objective(s)</b>					
To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through genetic differentiation.					
<b>Lecture Style</b>					
Lectures are setting in small group discussion style					
<b>Course Outline</b>					
Goals/outline: The goal of this course is to learn the developmental process of human life from the viewpoints of latest molecular biology and genetics. Medical science for child health and development is the study to comprehensively grasp various health problems related to "human life cycle" to begin with the fertilization and to continue to the next generation through generation and development. Students of this course are required to understand a role and a function of medical care for child health and development, to acquire ability to handle such health problems and support relevant person with specialized theory and technique.					
<b>Grading System</b>					
Your attendance to lectures and lab works including your commitments to presentation and publishing will affect your final grade of the course. Conducting your research and attendance to lectures: 70%, Presentation and/or publishing your works: 30%					
<b>Prerequisite Reading</b>					
It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Reference Materials</b>					
Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Important Course Requirements</b>					
Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.					
<b>Note(s) to Students</b>					
The documents such as English general remarks are distributed as needed.					

<b>Lecture No</b>	041328				
<b>Subject title</b>	Practice of NCCHD Child Health and Development	<b>Subject ID</b>			
<b>Instructors</b>	Hidenori Akutsu, ONODERA Masafumi, FUKAMI Maki, HATA Kenichiroh, MATSUMOTO Kenji, Shuji Takada				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)					
<b>Course Purpose and Outline</b>					
Our course purpose is to educate the developmental process of human life from the viewpoints of latest molecular biology and genetics. NCCHD Child Health and Development is to study the health and development of infants, children, adolescents, and young adults thorough basic science education and innovative research. We support to learn the Child Health Care and Development through educating and training by experts.					
<b>Course Objective(s)</b>					
To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through gametic differentiation.					
<b>Lecture Style</b>					
Lectures are setting in small group discussion style					
<b>Course Outline</b>					
Goals/Outline: Students report progress of each study and discuss research plan each other. When someone derives a certain conclusion from the series of experimental results, those findings will be reported in national and international academic meetings or published in an academic journal.					
<b>Grading System</b>					
Your attendance to lectures and lab works including your commitments to presentation and publishing will affect your final grade of the course. Conducting your research and attendance to lectures: 70%, Presentation and/or publishing your works: 30%					
<b>Prerequisite Reading</b>					
It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Reference Materials</b>					
Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Important Course Requirements</b>					
Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.					
<b>Note(s) to Students</b>					
The documents such as English general remarks are distributed as needed.					

<b>Lecture No</b>	041329				
<b>Subject title</b>	Laboratory practice of NCCHD Child Health and Development			<b>Subject ID</b>	
<b>Instructors</b>	Hidenori Akutsu, ONODERA Masafumi, FUKAMI Maki, HATA Kenichiroh, MATSUMOTO Kenji, Shuji Takada				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)					
<b>Course Purpose and Outline</b>					
Our course purpose is to educate the developmental process of human life from the viewpoints of latest molecular biology and genetics. NCCHD Child Health and Development is to study the health and development of infants, children, adolescents, and young adults thorough basic science education and innovative research. We support to learn the Child Health Care and Development through educating and training by experts.					
<b>Course Objective(s)</b>					
To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through gametic differentiation.					
<b>Lecture Style</b>					
Lectures are setting in small group discussion style					
<b>Course Outline</b>					
Goals/Outline:					
[Hidenori Akutsu] Exploring molecular mechanism for acquisition of zygote totipotency, epigenetic reprogramming and pluripotency in stem cells. Application studies for reproductive medicine and regenerative medicine.					
[Shuji Takada] Identification of target molecules in severe diseases and establishment of disease model mice by studying molecular mechanisms of genomic imprinting, gametogenesis and sexual differentiation.					
[Maki Fukami] Elucidation of genetic abnormality in congenital severe metabolic diseases using advanced genetic analysis					
[Masashi Onodera] Studying for cellular model in human severe disease by advancing flow cytometry.					
[Kenji Matsumoto] Elucidation for allergic disease mechanism and target molecules using molecular biology and ‘omics’ technology.					
[Kenichiro Hata] Elucidating for molecular mechanism of perinatal abnormality using system biology.					
<b>Grading System</b>					
Your attendance to lectures and lab works including your commitments to presentation and publishing will affect your final grade of the course. Conducting your research and attendance to lectures: 70%, Presentation and/or publishing your works: 30%					
<b>Prerequisite Reading</b>					
It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Reference Materials</b>					
Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.					
<b>Important Course Requirements</b>					
Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.					
<b>Note(s) to Students</b>					
The documents such as English general remarks are distributed as needed.					



<b>Lecture No</b>	041330				
<b>Subject title</b>	Lecture of Human Pathology	<b>Subject ID</b>			
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Department of Pathology, 15th floor, MD tower					
<b>Course Purpose and Outline</b> To understand the human pathological methodology and research policy					
<b>Course Objective(s)</b> To explain the human pathological methodology and research policy					
<b>Lecture Style</b> Education through meetings, conferences and seminars					
<b>Course Outline</b> Pathological methodology and research policy					
<b>Grading System</b> Interview and reports					
<b>Grading Rule</b> Interpretation of each step					
<b>Prerequisite Reading</b> Pre-reading of the references					
<b>TextBook</b> Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS					
<b>Relationship With Other Subjects</b> Related module: 人体病理学演習・人体病理学実習(theories of human pathology)					
<b>Important Course Requirements</b> Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.					
<b>Email</b> masa.pth2@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM.9:00-PM.5:00					

<b>Lecture No</b>	041331				
<b>Subject title</b>	Practice of Human Pathology	<b>Subject ID</b>			
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Department of Pathology, 15th floor, MD tower					
<b>Course Purpose and Outline</b> To understand the pathological methodology and research policy					
<b>Course Objective(s)</b> To explain the human pathological methodology and research policy					
<b>Lecture Style</b> Education through meetings, conferences and seminars					
<b>Course Outline</b> Pathological methodology and research policy					
<b>Grading System</b> Interview and reports					
<b>Grading Rule</b> Interpretation of each step					
<b>Prerequisite Reading</b> Pre-reading of the references					
<b>TextBook</b> Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS					
<b>Relationship With Other Subjects</b> Related module: 人体病理学特論・人体病理学実習(theories of human pathology)					
<b>Important Course Requirements</b> Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.					
<b>Email</b> masa.pth2@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM.9:00-PM.5:00					

<b>Lecture No</b>	041332				
<b>Subject title</b>	Laboratory practice of Human Pathology	<b>Subject ID</b>			
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Department of Pathology, 15th floor, MD tower					
<b>Course Purpose and Outline</b> To understand the pathological methodology and research policy					
<b>Course Objective(s)</b> To explain the pathological methodology and research policy					
<b>Lecture Style</b> Education through meetings, conferences and seminars					
<b>Course Outline</b> Pathological methodology and research policy					
<b>Grading System</b> Interview and reports					
<b>Grading Rule</b> Interpretation of each step					
<b>Prerequisite Reading</b> Pre-reading of the references					
<b>TextBook</b> Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS					
<b>Relationship With Other Subjects</b> Related module: 人体病理学特論・人体病理学演習(theories of human pathology)					
<b>Important Course Requirements</b> Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.					
<b>Email</b> masa.pth2@tmd.ac.jp					
<b>Instructor's Contact Information</b> AM.9:00–PM.5:00					

<b>Lecture No</b>	041333				
<b>Subject title</b>	Lecture of Physiology and Cell Biology			<b>Subject ID</b>	
<b>Instructors</b>	ISOMURA Yoshikazu				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
TBA (M&D Tower, 17F)					
<b>Course Purpose and Outline</b>					
Versatile brain functions are achieved by fast spike processing through neural circuits among brain areas at millisecond scale. Yet, the neural mechanism remains a large mystery. In this lecture, participants will learn how to clarify the neural mechanism by means of behavioral and physiological experiments and theoretical analyses.					
<b>Course Objective(s)</b>					
To get an ability to study a brain function and its mechanism by performing behavioral and physiological experiments using rodents and analyzing the data theoretically and statistically to test one hypothesis and conclude it.					
<b>Lecture Style</b>					
Small group discussion					
<b>Course Outline</b>					
Researchers should understand many cases of behavioral and physiological experiments and their advantage and disadvantage to consider the essence of circuit mechanism for brain functions. In this lecture, participants will show and know the latest researches in neuroscience fields and discuss about their validity carefully.					
<b>Grading System</b>					
You will be evaluated based on your attendance rate for the lecture, practice, lab, and academic meetings, and your attitude for scientific research.					
<b>Prerequisite Reading</b>					
You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on.					
<b>Reference Materials</b>					
Principles of Neural Science (5th edition, 2012), E. Kandel et al., McGraw-Hill					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
N/A					
<b>Email</b>					
isomura.phy2@tmd.c.jp					
<b>Instructor's Contact Information</b>					
10:00 to 18:00, Monday to Friday					

<b>Lecture No</b>	041334				
<b>Subject title</b>	Practice of Physiology and Cell Biology			<b>Subject ID</b>	
<b>Instructors</b>	ISOMURA Yoshikazu				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> TBA (M&D Tower, 17F)					
<b>Course Purpose and Outline</b> Versatile brain functions are achieved by fast spike processing through neural circuits among brain areas at millisecond scale. Yet, the neural mechanism remains a large mystery. In this lecture, participants will learn how to clarify the neural mechanism by means of behavioral and physiological experiments and theoretical analyses.					
<b>Course Objective(s)</b> To get an ability to study a brain function and its mechanism by performing behavioral and physiological experiments using rodents and analyzing the data theoretically and statistically to test one hypothesis and conclude it.					
<b>Lecture Style</b> Small group discussion					
<b>Course Outline</b> Participants will learn to understand the background of the research field and bring up relevant scientific questions, and also to develop scientific thinking with effective questions and learn the way of scientific presentation.					
<b>Grading System</b> You will be evaluated based on your attendance rate for the lecture, practice, lab, and academic meetings, and your attitude for scientific research.					
<b>Prerequisite Reading</b> You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on.					
<b>Reference Materials</b> Principles of Neural Science (5th edition, 2012), E. Kandel et al., McGraw-Hill					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> N/A					
<b>Email</b> isomura.phy2@tmd.c.jp					
<b>Instructor's Contact Information</b> 10:00 to 18:00, Monday to Friday					

<b>Lecture No</b>	041335				
<b>Subject title</b>	Laboratory practice of Physiology and Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	ISOMURA Yoshikazu				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> TBA (M&D Tower, 17F)					
<b>Course Purpose and Outline</b> Versatile brain functions are achieved by fast spike processing through neural circuits among brain areas at millisecond scale. Yet, the neural mechanism remains a large mystery. In this lecture, participants will learn how to clarify the neural mechanism by means of behavioral and physiological experiments and theoretical analyses.					
<b>Course Objective(s)</b> To get an ability to study a brain function and its mechanism by performing behavioral and physiological experiments using rodents and analyzing the data theoretically and statistically to test one hypothesis and conclude it.					
<b>Lecture Style</b> Small group discussion					
<b>Course Outline</b> You can join our research team and learn various experimental techniques including neurophysiology, animal psychology, computational neuroscience and so on.					
<b>Grading System</b> You will be evaluated based on your attendance rate for the lecture, practice, lab, and academic meetings, and your attitude for scientific research.					
<b>Prerequisite Reading</b> You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on.					
<b>Reference Materials</b> Principles of Neural Science (5th edition, 2012), E. Kandel et al., McGraw-Hill					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> N/A					
<b>Email</b> isomura.phy2@tmd.c.jp					
<b>Instructor's Contact Information</b> 10:00 to 18:00, Monday to Friday					

<b>Lecture No</b>	041336				
<b>Subject title</b>	Lecture of Molecular Cellular Cardiology	<b>Subject ID</b>			
<b>Instructors</b>	FURUKAWA TETSUSHI, IHARA KENSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> It will be held in seminar room in M&D tower, which will be announced in time.					
<b>Course Purpose and Outline</b> The purpose of this course is to learn basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases in taking into consideration to advance to the translational research.					
<b>Course Objective(s)</b> The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.					
<b>Lecture Style</b> In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.					
<b>Course Outline</b> Goals/outline: You will learn pathogenesis for cardiovascular diseases including fetal arrhythmias, sudden cardiac death, and gender difference through lecture and discussion. The goal is to obtain knowledge, with which you will proceed your own research project.					
<b>Grading System</b> It will be given on the status of attendance to discussion, seminar, and research conference, and on presentations and remarks. In addition, it will be given comprehensively also considering research content, attendance to research meetings, and presentation in meetings. (Writing a report would be imposed in assessing grades.)					
<b>Prerequisite Reading</b> The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.					
<b>Reference Materials</b> N/A					
<b>Important Course Requirements</b> Communication skill in English Strong motivation to perform research Cooperativity with other lab. members					
<b>Email</b> FURUKAWA TETSUSHI: furukawa.bip@mri.tmd.ac.jp M & D • 19F					

<b>Lecture No</b>	041337				
<b>Subject title</b>	Practice of Molecular Cellular Cardiology	<b>Subject ID</b>			
<b>Instructors</b>	FURUKAWA TETSUSHI, IHARA KENSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
It will be held in seminar room in M&D tower, which will be announced in time.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to learn basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases in taking into consideration to advance to the translational research.					
<b>Course Objective(s)</b>					
The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.					
<b>Lecture Style</b>					
In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.					
<b>Course Outline</b>					
Goals/Outline: You will learn pathogenesis for cardiovascular diseases including fetal arrhythmias, sudden cardiac death, and gender difference through experiment and practice. The goal is to obtain technique, with which you will proceed your own research project.					
<b>Grading System</b>					
It will be given on the status of attendance to discussion, seminar, and research conference, and on presentations and remarks. In addition, it will be given comprehensively also considering research content, attendance to research meetings, and presentation in meetings. (Writing a report would be imposed in assessing grades.)					
<b>Prerequisite Reading</b>					
The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.					
<b>Reference Materials</b>					
N/A					
<b>Important Course Requirements</b>					
Communication skill in English   Strong motivation to perform research   Cooperativity with other lab. members					
<b>Email</b>					
FURUKAWA TETSUSHI: furukawa.bip@mri.tmd.ac.jp   M & D • 19F					



<b>Lecture No</b>	041338				
<b>Subject title</b>	Laboratory practice of Molecular Cellular Cardiology	<b>Subject ID</b>			
<b>Instructors</b>	FURUKAWA TETSUSHI, IHARA KENSUKE				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> It will be held in seminar room in M&D tower, which will be announced in time.					
<b>Course Purpose and Outline</b> The purpose of this course is to learn basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases in taking into consideration to advance to the translational research.					
<b>Course Objective(s)</b> The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.					
<b>Lecture Style</b> In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.					
<b>Course Outline</b> Goals/Outline: Using multi-disciplinary approach including molecular, genetic, and electrophysiological techniques, we will study unproven important cardiovascular theme shown below.					
<b>Grading System</b> It will be given on the status of attendance to discussion, seminar, and research conference, and on presentations and remarks. In addition, it will be given comprehensively also considering research content, attendance to research meetings, and presentation in meetings. (Writing a report would be imposed in assessing grades.)					
<b>Prerequisite Reading</b> The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.					
<b>Reference Materials</b> N/A					
<b>Important Course Requirements</b> Communication skill in English   Strong motivation to perform research   Cooperativity with other lab. members					
<b>Email</b> FURUKAWA TETSUSHI: furukawa.bip@mri.tmd.ac.jp   M&D•19F					

<b>Lecture No</b>	041342				
<b>Subject title</b>	Lecture of Stem Cell Regulation	<b>Subject ID</b>			
<b>Instructors</b>	TAGA TETSUYA, NOBUHISA IKUO, TABU KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to encourage students to comprehensively understand stem cells in normal and pathological conditions. Students will improve their abilities to independently study stem cell regulations and applications through education and training about origins, properties, and regulations of stem cells that function in tissue development, maintenance and regeneration. The course will especially focus on neural stem cells, hematopoietic stem cells, and cancer stem cells in view of cell-external cues from "niches" and cell-intrinsic cues such as epigenetic regulations.					
<b>Course Objective(s)</b>					
The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand and employ regulatory mechanisms of stem cell development, maintenance, and fate determinations, particularly in neural stem cells, hematopoietic stem cells, and cancer stem cells. To make students learn molecular biological, cell biological, and histological methods for conducting research projects. To develop students' skills to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve them, properly discuss experimental results, and, report the summary of research in English.					
<b>Lecture Style</b>					
Programs are set up for a small number of students for more intense discussion and in-depth participation.					
<b>Course Outline</b>					
Goals/outline: This course will introduce to students the recent topics in the research field of stem cell regulation. Tissue stem cells possess potential to generate all cell types present in a given tissue. In order to understand tissue development and regeneration from the biological and clinical viewpoints, it is important to study the molecular regulation of stem cell maintenance and fate specification. Not only normal tissue stem cells, e.g. neural and hematopoietic stem cells on which we place particular focus, but also cancer stem cells will be discussed to consider the problem of cancer recurrence. We will refer to cell-extrinsic signals like growth factors in the niche and cell-intrinsic program such as epigenetic modifications as cell fate regulatory elements.					
<b>Grading System</b>					
Grading will be undertaken based on lecture/practice/lab participation, performance, presentation, reports, and lab work execution.					
<b>Prerequisite Reading</b>					
Students should read in advance literature on stem cell regulations. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.					
<b>Reference Materials</b>					
Molecular Biology of the Cell, fifth edition. Garland Science. 2008. StemBook. Harvard Stem Cell Institute. 2008-. ( <a href="http://www.ncbi.nlm.nih.gov/books/NBK27044/">http://www.ncbi.nlm.nih.gov/books/NBK27044/</a> )					
<b>Important Course Requirements</b>					
Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b>					
None.					
<b>Email</b> TAGA TETSUYA:taga.scr@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)					

<b>Lecture No</b>	041343				
<b>Subject title</b>	Practice of Stem Cell Regulation	<b>Subject ID</b>			
<b>Instructors</b>	AGA TETSUYA, NOBUHISA IKUO, TABU KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to encourage students to comprehensively understand stem cells in normal and pathological conditions. Students will improve their abilities to independently study stem cell regulations and applications through education and training about origins, properties, and regulations of stem cells that function in tissue development, maintenance and regeneration. The course will especially focus on neural stem cells, hematopoietic stem cells, and cancer stem cells in view of cell-external cues from "niches" and cell-intrinsic cues such as epigenetic regulations.					
<b>Course Objective(s)</b>					
The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand and employ regulatory mechanisms of stem cell development, maintenance, and fate determinations, particularly in neural stem cells, hematopoietic stem cells, and cancer stem cells. To make students learn molecular biological, cell biological, and histological methods for conducting research projects. To develop students' skills to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve them, properly discuss experimental results, and, report the summary of research in English.					
<b>Lecture Style</b>					
Programs are set up for a small number of students for more intense discussion and in-depth participation.					
<b>Course Outline</b>					
Goals/outline: In this course, students will learn the molecular basis of stem cell regulation in view of cell-extrinsic signals and cell intrinsic programs during tissue development, maintenance, and regeneration from molecular to whole-body levels. Students will receive exposure to cutting edge concepts and research technologies, and study regulatory mechanisms in neural, hematopoietic and cancer stem cells from multiple viewpoints. With emphasis also on physiological and pathological conditions surrounding the stem cells, the course aims to improve student's understanding of stem cells.					
<b>Grading System</b>					
Grading will be undertaken based on lecture/practice/lab participation, performance, presentation, reports, and lab work execution.					
<b>Prerequisite Reading</b>					
Students should read in advance literature on stem cell regulations. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.					
<b>Reference Materials</b>					
Molecular Biology of the Cell, fifth edition. Garland Science. 2008. StemBook. Harvard Stem Cell Institute. 2008-. ( <a href="http://www.ncbi.nlm.nih.gov/books/NBK27044/">http://www.ncbi.nlm.nih.gov/books/NBK27044/</a> )					
<b>Important Course Requirements</b>					
Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b>					
None.					
<b>Email</b>					
TAGA TETSUYA:taga.scr@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)					

<b>Lecture No</b>	041344				
<b>Subject title</b>	Laboratory practice of Stem Cell Regulation			<b>Subject ID</b>	
<b>Instructors</b>	TAGA TETSUYA, NOBUHISA IKUO, TABU KOICHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to encourage students to comprehensively understand stem cells in normal and pathological conditions. Students will improve their abilities to independently study stem cell regulations and applications through education and training about origins, properties, and regulations of stem cells that function in tissue development, maintenance and regeneration. The course will especially focus on neural stem cells, hematopoietic stem cells, and cancer stem cells in view of cell-external cues from "niches" and cell-intrinsic cues such as epigenetic regulations.					
<b>Course Objective(s)</b>					
The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand and employ regulatory mechanisms of stem cell development, maintenance, and fate determinations, particularly in neural stem cells, hematopoietic stem cells, and cancer stem cells. To make students learn molecular biological, cell biological, and histological methods for conducting research projects. To develop students' skills to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve them, properly discuss experimental results, and, report the summary of research in English.					
<b>Lecture Style</b>					
Programs are set up for a small number of students for more intense discussion and in-depth participation.					
<b>Course Outline</b>					
Goals/Outline: Each student will conduct independent research, under supervision of instructors, on regulatory mechanisms of either the neural, hematopoietic, and cancer stem cells. Other tissue stem cells can be tackled by consultation. Students are advised to design experiments regarding, for example, stem cell development, maintenance of multipotentiality, cell-fate specification, cell migration, maturation, maintenance, and regeneration. Through execution of such experiments, students shall understand general property of stem cells in both/either physiological and/or pathological conditions and obtain a hint for going into translational research.					
<b>Grading System</b>					
Grading will be undertaken based on lecture/practice/lab participation, performance, presentation, reports, and lab work execution.					
<b>Prerequisite Reading</b>					
Students should read in advance literature on stem cell regulations. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.					
<b>Reference Materials</b>					
Molecular Biology of the Cell, fifth edition. Garland Science. 2008. StemBook. Harvard Stem Cell Institute. 2008-. ( <a href="http://www.ncbi.nlm.nih.gov/books/NBK27044/">http://www.ncbi.nlm.nih.gov/books/NBK27044/</a> )					
<b>Important Course Requirements</b>					
Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b>					
None.					
<b>Email</b>					
TAGA TETSUYA:taga.scr@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)					

<b>Lecture No</b>	041348				
<b>Subject title</b>	Lecture of Stem Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	NISHIMURA EMI, NAMBA DAISUKE, MATSUMURA HIROYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
To be announced by E-mail					
<b>Course Purpose and Outline</b>					
The purpose of this course is to provide students with opportunities to learn Stem Cell Biology and its clinical relevance.					
<b>Course Objective(s)</b>					
1) define the term "stem cell" and "tissue stem cells" 2) learn methodology for stem cell research 3) understand the mechanisms underlying tissue cell turnover and homeostasis 4) learn about diseases caused by stem cell defects 4) learn about clinical applications					
<b>Lecture Style</b>					
Seminar & Hands-on Lab					
<b>Course Outline</b>					
Goals/outline: Our goal is to understand the mechanisms of tissue homeostasis driven by stem cell systems and to apply the knowledge to better understand the mechanisms underlying the tissue decline, cancer development and other diseases associated with aging. We will discuss how stem cells including both tissue stem cells and cancer stem cells are generated and maintained in tissues and apply the knowledge to regenerative medicine and treatment of cancer and other diseases.					
<b>Grading System</b>					
Report (80%) and discussion (20%) for grading					
<b>Prerequisite Reading</b>					
Read the sections about stem cells in "Molecular Biology of THE CELL", "the biology of Cancer" (by Robert A. Weinberg) and StemBook online.					
<b>Reference Materials</b>					
Molecular Biology of THE CELL, the biology of Cancer (by Robert A. Weinberg) etc.					
<b>Important Course Requirements</b>					
Please make contact with Prof. Emi Nishimura by e-mail first. Please prepare the report which include the summary for the definitions and key concepts of "somatic stem cells", "stem cell niche" and "stem cell renewal". Submit the report (in 3 pages) by the end of November for further discussion.					
<b>Note(s) to Students</b>					
NP					

<b>Lecture No</b>	041349				
<b>Subject title</b>	Practice of Stem Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	NISHIMURA EMI, NAMBA DAISUKE, MATSUMURA HIROYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
To be announced by E-mail					
<b>Course Purpose and Outline</b>					
The purpose of this course is to provide students with opportunities to learn Stem Cell Biology and its clinical relevance.					
<b>Course Objective(s)</b>					
1) define the term "stem cell" and "tissue stem cells" 2) learn methodology for stem cell research 3) understand the mechanisms underlying tissue cell turnover and homeostasis 4) learn about diseases caused by stem cell defects 4) learn about clinical applications					
<b>Lecture Style</b>					
Seminar & Hands-on Lab					
<b>Course Outline</b>					
Goals/Outline: The purpose of our Journal Club is to introduce Stem Cell Biology and Cancer Biology to participants by providing an opportunity to read, present, and discuss some noteworthy papers of high impact and quality in the field. We will aim to distinguish what is known from what is not known, and determine what should be done next. Students will learn how to plan experiments, how to analyze and interpret the results.					
<b>Grading System</b>					
Report (80%) and discussion (20%) for grading					
<b>Prerequisite Reading</b>					
Read the sections about stem cells in "Molecular Biology of THE CELL", "the biology of Cancer" (by Robert A. Weinberg) and StemBook online.					
<b>Reference Materials</b>					
Molecular Biology of THE CELL, the biology of Cancer (by Robert A. Weinberg) etc.					
<b>Important Course Requirements</b>					
Please make contact with Prof. Emi Nishimura by e-mail first. Please prepare the report which include the summary for the definitions and key concepts of "somatic stem cells", "stem cell niche" and "stem cell renewal". Submit the report (in 3 pages) by the end of November for further discussion.					
<b>Note(s) to Students</b>					
NP					

<b>Lecture No</b>	041350				
<b>Subject title</b>	Laboratory practice of Stem Cell Biology	<b>Subject ID</b>			
<b>Instructors</b>	NISHIMURA EMI, NAMBA DAISUKE, MATSUMURA HIROYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
To be announced by E-mail					
<b>Course Purpose and Outline</b>					
The purpose of this course is to provide students with opportunities to learn Stem Cell Biology and its clinical relevance.					
<b>Course Objective(s)</b>					
1) define the term "stem cell" and "tissue stem cells" 2) learn methodology for stem cell research 3) understand the mechanisms underlying tissue cell turnover and homeostasis 4) learn about diseases caused by stem cell defects 4) learn about clinical applications					
<b>Lecture Style</b>					
Seminar & Hands-on Lab					
<b>Course Outline</b>					
Goals/Outline: The purpose of our Lab is to provide an opportunity to learn in vivo and in vitro analysis of tissue stem cells from genetically modified mice. The techniques include immunohistochemical staining, histological analysis, FACS analysis and generation of transgenic mice.					
<b>Grading System</b>					
Report (80%) and discussion (20%) for grading					
<b>Prerequisite Reading</b>					
Read the sections about stem cells in "Molecular Biology of THE CELL", "the biology of Cancer" (by Robert A. Weinberg) and StemBook online.					
<b>Reference Materials</b>					
Molecular Biology of THE CELL, the biology of Cancer (by Robert A. Weinberg) etc.					
<b>Important Course Requirements</b>					
Please make contact with Prof. Emi Nishimura by e-mail first. Please prepare the report which include the summary for the definitions and key concepts of "somatic stem cells", "stem cell niche" and "stem cell renewal". Submit the report (in 3 pages) by the end of November for further discussion.					
<b>Note(s) to Students</b>					
NP					

<b>Lecture No</b>	041351				
<b>Subject title</b>	Lecture of Respiratory Medicine			<b>Subject ID</b>	
<b>Instructors</b>	MIYAZAKI YASUNARI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D tower, north1303					
<b>Course Purpose and Outline</b> Pulmonary diseases include many categories such as immunological/allergic diseases, tumors, and infectious diseases. The disease is related to each other and genetic/environmental factors. The course aim is students' development of the basic ability to be able to understand the mechanism of pulmonary diseases from a scientific point of view.					
<b>Course Objective(s)</b> The main objective of Respiratory Medicine in the graduate course is to provide students to study specific diagnostic modalities as well as basic scientific findings regarding the pathogenesis of pulmonary diseases.					
<b>Lecture Style</b> After reviewing a variety of pulmonary diseases and the latest topics of the diseases, the pathogenesis of each pulmonary disease should be discussed with an aggressive attitude.					
<b>Course Outline</b> The respiratory system is susceptible to external factors such as virus infection, smoking, dust exposure, and internal factors such as hormones, aging, genetic factor. Respiratory Medicine deals with a variety of pulmonary diseases including tumors, infectious diseases, allergic diseases, non-allergic inflammatory diseases, and genetic disorders. The graduate course is comprised that to learn specific diagnostic modalities as well as basic scientific findings regarding the pathogenesis of pulmonary diseases.					
<b>Grading System</b> We evaluate the student by the contribution in the discussion, exercise, research practice (60%). For example, presentation and remarks in the meeting. In addition, we comprehensively evaluate (40%) the grade on the basis of research content, degree of involvement in a study group meeting, number of presentations at academic conference and paper submission.					
<b>Prerequisite Reading</b> Instruct at any time if necessary.					
<b>Reference Materials</b> None					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Students who have interest in pulmonary medicine are welcome to join us.					
<b>Email</b> miyazaki.pilm@tmd.ac.jp					
<b>Instructor's Contact Information</b> Every week Mon. to Fri. AM.8.30-PM.5.30 (secretary exit. 5950) Professor's office at MDtower13Floor, Ward/Outpatient clinic of Respiratory Medicine					



<b>Lecture No</b>	041352				
<b>Subject title</b>	Practice of Respiratory Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIYAZAKI YASUNARI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Check the location with the instructor before attending the lectures, because it varies from program to program.					
<b>Course Purpose and Outline</b>					
Respiratory Medicine deals with a variety of pulmonary diseases including tumors, infectious diseases, allergic diseases, non-allergic inflammatory diseases, and genetic disorders. The main objective of Respiratory Medicine in the graduate course is to provide students to study specific diagnostic modalities as well as basic scientific findings regarding the pathogenesis of pulmonary diseases.					
<b>Course Objective(s)</b>					
The goal of the course is to find out the unresolved problems in medical care and research on respiratory diseases and make appropriate research plans for solutions.					
<b>Lecture Style</b>					
After reviewing a variety of pulmonary diseases and the latest topics, pathogenesis of each pulmonary disease will be discussed with an aggressive attitude.					
<b>Course Outline</b>					
Respiratory Medicine clinic provides a full spectrum of diagnosis and treatment of a wide variety of pulmonary diseases. Consultant system is open to all departments in our hospital and daily clinical conference regarding inpatients is organized by professors of the Department. In the outpatient clinic, chemotherapy, home oxygen therapy, support for ceasing smoke, management of sleep apnea, and clinical studies are provided.					
<b>Grading System</b>					
We evaluate the contribution in the discussion, exercise, research practice (60%). For example, presentation and remarks in the meeting. Also, we comprehensively evaluate (40%) the grade based on research content, degree of involvement in a study group meeting, number of presentations at academic conference and paper submission.					
<b>Prerequisite Reading</b>					
Instructs you when necessary.					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Students who have an interest in pulmonary medicine are welcome to join us.					
<b>Email</b>					
miyazaki.pilm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every week Mon. to Fri. AM.8.30–PM.5.30 (secretary exit. 5950)					
Professor's office at MDtower13Floor, Ward/Outpatient clinic of Respiratory Medicine					

<b>Lecture No</b>	041353				
<b>Subject title</b>	Laboratory practice of Respiratory Medicine			<b>Subject ID</b>	
<b>Instructors</b>	MIYAZAKI YASUNARI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Check the place with your instructor before taking the course, as it will vary by program.					
<b>Course Purpose and Outline</b>					
Respiratory Medicine deals with a variety of pulmonary diseases including tumors, infectious diseases, allergic diseases, non-allergic inflammatory diseases, and genetic disorders. The main objective of Respiratory Medicine in the graduate course is to provide students to study specific diagnostic modalities as well as basic scientific findings regarding the pathogenesis of pulmonary diseases.					
<b>Course Objective(s)</b>					
The goal of the course is to find out the unresolved problems in medical care and research on respiratory diseases and make appropriate research plans for solutions.					
<b>Lecture Style</b>					
After reviewing a variety of pulmonary diseases and the latest topics, the pathogenesis of each pulmonary disease will be discussed with an aggressive attitude.					
<b>Course Outline</b>					
Select some of the following research projects to elucidate the pathology of respiratory diseases. It is possible to discuss other projects with the instructor. Elucidate pathological conditions using immunology, molecular biology, genetic techniques, and animal models.					
Projects:					
1) Pathogenesis of hypersensitivity pneumonitis					
2) Identification of environmental causative antigen					
2) Acute exacerbation in interstitial lung diseases (ILDs)					
3) Pulmonary fibrosis associated with collagen vascular disease					
4) Genetic factors in ILDs					
5) Airway remodeling in a bronchial asthma model					
6) Mechanisms in COPD					
7) Antimicrobial resistance (AMR) in infectious diseases					
<b>Grading System</b>					
We evaluate the contribution in the discussion, exercise, research practice (60%). For example, presentation and remarks in the meeting. Also, we comprehensively evaluate (40%) the grade based on research content, degree of involvement in a study group meeting, number of presentations at academic conference and paper submission.					
<b>Prerequisite Reading</b>					
Instructor instructs as appropriate.					
<b>Reference Materials</b> None					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b>					
Students who have an interest in pulmonary medicine are welcome to join us.					
<b>Email</b>					
miyazaki.pilm@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every week Mon. to Fri. AM.8.30–PM.5.30 (secretary exit. 5950)					
Profesor's office at MDtower13Floor, Ward/Outpatient clinic of Respiratory Medicine					

<b>Lecture No</b>	041354				
<b>Subject title</b>	Lecture of Gastroenterology and Hepatology	<b>Subject ID</b>			
<b>Instructors</b>	TSUCHIYA KIICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology					
<b>Course Purpose and Outline</b> The purpose of this course is the understanding the situation of inflammatory bowel disease (IBD) in Japan and the problems about the pathogenesis and intractable cause of IBD. In addition, the understanding the pathogenesis and problems about the liver diseases such as viral hepatitis, cirrhosis and hepatocellular carcinoma is the purpose of this course.					
<b>Course Objective(s)</b> The objective of this course is to learn the basic science such as molecular biology, immunology, cancer biology and regenerative medicine for understanding the problems about GI and liver disease. Moreover, it is to perform the examination for the elucidation of own study theme.					
<b>Lecture Style</b> Different with each course.					
<b>Course Outline</b> Research project is selected from the clinical problems in the Gastroenterology and Hepatology to understand the research policy, as clinical science that the results of research project finally should be restored to clinical medicine. Research Conference and Journal Club every Tuesday 18:00~19:30					
<b>Grading System</b> Participation, discussion and attitude.					
<b>Prerequisite Reading</b> To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.					
<b>TextBook</b> Not specified. Books for molecular biology, immunology, clinical medicine.					
<b>Email</b> TSUCHIYA KIICHIRO:dept.gast@tmd.ac.jp					
<b>Instructor's Contact Information</b> TSUCHIYA KIICHIRO:Every Wednesday AM 9:00-12:00 (reservation required) M&D Tower 14F, Staff room of Gastroenterology and Hepatology					

<b>Lecture No</b>	041355				
<b>Subject title</b>	Practice of Gastroenterology and Hepatology	<b>Subject ID</b>			
<b>Instructors</b>	TSUCHIYA KIICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology Medical Hospital, Endoscopic room.					
<b>Course Purpose and Outline</b>					
The objective of this course is to learn the basic science such as molecular biology, immunology, cancer biology and regenerative medicine for understanding the problems about G.I and liver disease. Moreover, it is to perform the examination for the elucidation of own study theme.					
<b>Course Objective(s)</b>					
To cultivate the awareness of the issues that the subject of basic research is awakened from medical practice through learning the fundamental knowledge such as endoscopic technique and clinical information of gastroenterology.					
<b>Lecture Style</b>					
Clinical conference, Endoscopic examination, Abdominal echo examination					
<b>Course Outline</b>					
Clinical conference, Endoscopic examination, Abdominal echo examination					
<b>Grading System</b>					
Participation, discussion and attitude.					
<b>Prerequisite Reading</b>					
To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.					
<b>TextBook</b>					
Not specified. Books for molecular biology, immunology, clinical medicine					
<b>Email</b>					
TSUCHIYA KIICHIRO:dept.gast@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TSUCHIYA KIICHIRO:Every Wednesday AM 9:00–12:00 (reservation required) M&D Tower 14F, Staff room of Gastroenterology and Hepatology					

<b>Lecture No</b>	041356				
<b>Subject title</b>	Laboratory practice of Gastroenterology and Hepatology	<b>Subject ID</b>			
<b>Instructors</b>	TSUCHIYA KIICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology					
<b>Course Purpose and Outline</b> The purpose of this course is the understanding the situation of inflammatory bowel disease (IBD) in Japan and the problems about the pathogenesis and intractable cause of IBD. In addition, the understanding the pathogenesis and problems about the liver diseases such as viral hepatitis, cirrhosis and hepatocellular carcinoma is the purpose of this course.					
<b>Course Objective(s)</b> To get novel knowledge by basic research raised from clinical practice.					
<b>Lecture Style</b> Participation to research group and joint research.					
<b>Course Outline</b> Mucosal immunology, Inflammatory related carcinogenesis Digestive regeneration Hepatitis / HCC Liver regeneration					
<b>Grading System</b> Participation, discussion and attitude.					
<b>Prerequisite Reading</b> To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.					
<b>TextBook</b> Not specified. Books for molecular biology, immunology, clinical medicine					
<b>Email</b> TSUCHIYA KIICHIRO:dept.gast@tmd.ac.jp					
<b>Instructor's Contact Information</b> TSUCHIYA KIICHIRO:Every Wednesday AM 9:00–12:00 (reservation required) M&D Tower 14F, Staff room of Gastroenterology and Hepatology					

<b>Lecture No</b>	041357				
<b>Subject title</b>	Lecture of Specialized Surgeries			<b>Subject ID</b>	
<b>Instructors</b>	UETAKE HIROYUKI, ISHIKAWA TOSHIAKI, KUDO TOSHIFUMI, NAKAGAWA TSUYOSHI, OKAMOTO Kenntarou				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room					
<b>Course Purpose and Outline</b>					
1) To understand ethiology, diagnosis and adequate treatment for colorectal and breast cancer. 2) To understand multidisciplinary treatment for unresectable colorectal cancer. 3) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 4) To understand ethiology, diagnosis and adequate treatment for pediatric surgical disease.					
<b>Course Objective(s)</b>					
1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and assess QoL and organ function after operation. 3) To make the multidisciplinary treatment strategy for advanced colorectal and breast cancer. 4) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 5) To make the treatment strategy for pediatric surgical disease.					
<b>Lecture Style</b>					
To improve the ability of presentation and communication, enough opportunities of presentation and discussion are set.					
<b>Course Outline</b>					
Goals/Outline: Surgery for cancers of the colon and rectum and the breast is the most important tool, but recently chemotherapy has achieved great advance. In order to establish the strategy how to eradicate cancers, it is important to elucidate the mechanism of development and progression of cancers. The latest findings on surgical oncology are reviewed. The most effective therapy for nonresectable cancers is reviewed in view of a multidisciplinary treatment approach. Surgical treatment for cancers often complicates physiological dysfunctions in digestion ,absorption, defecation, sexual intercourse and urination, resulting in impairing post-operative QOL. The students take the lectures about anatomy and physiology of the digestive organs and the breast to acquire the knowledge required to prevent a decline in QOL.					
<b>Grading System</b>					
1) Attendance to the lectures and the conferences 2) Contents of the research presentation 3) Contents of the article The student is evaluated in consideration of the above three points.					
<b>Prerequisite Reading</b>					
No					
<b>Reference Materials</b>					
No					
<b>Important Course Requirements</b>					
No					

<b>Lecture No</b>	041358				
<b>Subject title</b>	Practice of Specialized Surgeries			<b>Subject ID</b>	
<b>Instructors</b>	UETAKE HIROYUKI, ISHIKAWA TOSHIKI, KUDO TOSHIFUMI, NAKAGAWA TSUYOSHI, OKAMOTO Kenntarou				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room					
<b>Course Purpose and Outline</b>					
1) To understand ethiology, diagnosis and adequate treatment for colorectal and breast cancer. 2) To understand multidisciplinary treatment for unresectable colorectal cancer. 3) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 4) To understand ethiology, diagnosis and adequate treatment for pediatric surgical disease.					
<b>Course Objective(s)</b>					
1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and assess QoL and organ function after operation. 3) To make the multidisciplinary treatment strategy for advanced colorectal and breast cancer. 4) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 5) To make the treatment strategy for pediatric surgical disease.					
<b>Lecture Style</b>					
To improve the ability of presentation and communication, enough opportunities of presentation and discussion are set.					
<b>Course Outline</b>					
Goals/Outline: The goals of the practice in this course are as follows:					
1) Understanding the procedures of diagnosis of cancers of the gastrointestinal tract and the breast.					
2) Selecting the most appropriate treatment approach including surgical resection and chemotherapy based on the staging and patient survival.					
3) Preventing the physiological and neurological dysfunction complicated after surgery.					
<b>Grading System</b>					
1) Attendance to the lectures and the conferences					
2) Contents of the research presentation					
3) Contents of the article					
The student is evaluated in consideration of the above three points.					
<b>Prerequisite Reading</b>					
No					
<b>Reference Materials</b>					
No					
<b>Important Course Requirements</b>					
No					

<b>Lecture No</b>	041359				
<b>Subject title</b>	Laboratory practice of Specialized Surgeries			<b>Subject ID</b>	
<b>Instructors</b>	UETAKE HIROYUKI, ISHIKAWA TOSHIKI, KUDO TOSHIFUMI, NAKAGAWA TSUYOSHI, OKAMOTO Kenntarou				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room					
<b>Course Purpose and Outline</b>					
1) To understand ethiology, diagnosis and adequate treatment for colorectal and breast cancer. 2) To understand multidisciplinary treatment for unresectable colorectal cancer. 3) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 4) To understand ethiology, diagnosis and adequate treatment for pediatric surgical disease.					
<b>Course Objective(s)</b>					
1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and assess QoL and organ function after operation. 3) To make the multidisciplinary treatment strategy for advanced colorectal and breast cancer. 4) To understand ethiology, diagnosis and adequate treatment for periferal vascular disease. 5) To make the treatment strategy for pediatric surgical disease.					
<b>Lecture Style</b>					
To improve the ability of presentation and communication, enough opportunities of presentation and discussion are set.					
<b>Course Outline</b>					
Goals/Outlines:					
1) Development of novel therapeutics for gastrointestinal and breast cancers by elucidating invasion/metastasis mechanisms of cancer.					
2) Identification of genes involved in gastrointestinal carcinogenesis by comprehensive analysis of mRNA and genomic DNA					
3) Identification of predictive factors for response to chemotherapeutic agent and application of these findings to individualized medicine.					
4) Development of the radical operation without dysfunction by clarifying the involvement of the automatic nerves in gastrointestinal motility, digestion and absorption, urination and ejaculation.					
5) Development of less invasive operation for cancer of the stomach, the colon and rectum, and the breast.					
<b>Grading System</b>					
1) Attendance to the lectures and the conferences					
2) Contents of the research presentation					
3) Contents of the article					
The student is evaluated in consideration of the above three points.					
<b>Prerequisite Reading</b>					
No					
<b>Reference Materials</b>					
No					
<b>Important Course Requirements</b>					
No					



<b>Lecture No</b>	041360				
<b>Subject title</b>	Lecture of Cardiovascular Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Lecture place</b>					
Appropriate location would be selected to study efficiently.					
<b>Course Purpose and Outline</b>					
The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine					
<b>Course Objective(s)</b>					
The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.					
<b>Lecture Style</b>					
Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.					
<b>Course Outline</b>					
The rising epidemic of cardiovascular disease is fuelled by obesity, hypertension, diabetes and aging. Extensive research identified immunoinflammatory mechanisms as key drivers in the initiation and progression of the disease, from early asymptomatic stages of vascular and myocardial injury leading to the clinically manifest dysfunction and remodeling in advanced stages. Heart failure is the end stage of all cardiovascular diseases including arrhythmia, hypertension, myocarditis and others. We investigate the mechanisms of vascular and myocardial inflammation in cardiovascular disease. Besides, many clinical technique are required to treat both in-hospital and out-hospital patients, i.e PCI and ablation and implantation of ICD and CRT. Cardiac imaging (ultrasound, MRI, CT, PET, intracoronary imaging and others) is one of the most exciting and fast-developing area. Our aim of the lecture is to understand broad knowledge on the cardiovascular diseases from bench to bedside.					
<b>Grading System</b>					
You will be graded as multi-dimensional and appropriate way.					
Publication of articles and abstract presentation will be also evaluated.					
Attendance of lecture: 80%					
Publication and abstract presentation: 20%					
<b>Prerequisite Reading</b>					
It is necessary for our students to have essential knowledge regarding biology and medicine.					
<b>Note(s) to Students</b>					
Please contact us before subscription.					

<b>Lecture No</b>	041361				
<b>Subject title</b>	Practice of Cardiovascular Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Lecture place</b> Appropriate location would be selected to study efficiently.					
<b>Course Purpose and Outline</b> The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine.					
<b>Course Objective(s)</b> The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.					
<b>Lecture Style</b> Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.					
<b>Course Outline</b> Goals/Outline: We can offer all techniques to treat patients from fundamental skills to new and challenging techniques. For example, we are doing PCI, Ablation on many origins of arrhythmia, implantation of pacemaker/ ICD/ CRT. We also conduct non-invasive imaging and medical treatment of patients with cardiovascular diseases.					
<b>Grading System</b> You will be graded as multi-dimensional and appropriate way. Publication of articles and abstract presentation will be also evaluated. Attendance of lecture: 80% Publication and abstract presentation: 20%					
<b>Prerequisite Reading</b> It is necessary for our students to have essential knowledge regarding biology and medicine.					
<b>Important Course Requirements</b> None.					
<b>Note(s) to Students</b> Please contact us before subscription.					

<b>Lecture No</b>	041362				
<b>Subject title</b>	Laboratory practice of Cardiovascular Medicine	<b>Subject ID</b>			
<b>Instructors</b>					
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Same classes are offered in English on different schedules.					
<b>Lecture place</b>					
Appropriate location would be selected to study efficiently.					
<b>Course Purpose and Outline</b>					
The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine.					
<b>Course Objective(s)</b>					
The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.					
<b>Lecture Style</b>					
Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.					
<b>Course Outline</b>					
Goals/Outline: We identify the mechanisms of cardiovascular diseases especially focusing on the inflammation with cardiac transplantation and myocarditis. Our investigation is based on deep interest and passion to contribute findings new treatments of heart disease. The targets of our investigation cover myocardial ischemia, cardiac rejection of the transplantation, myocarditis, heart failure, atherosclerosis, periodontal disease, pulmonary hypertension, atrial fibrillation, and so on.					
<b>Grading System</b>					
You will be graded as multi-dimensional and appropriate way. Publication of articles and abstract presentation will be also evaluated. Attendance of lecture: 80% Publication and abstract presentation: 20%					
<b>Prerequisite Reading</b>					
It is necessary for our students to have essential knowledge regarding biology and medicine.					
<b>Important Course Requirements</b>					
None.					
<b>Note(s) to Students</b>					
Please contact us before subscription.					

<b>Lecture No</b>	041366				
<b>Subject title</b>	Lecture of Anesthesiology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA TOKUJIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Depends on the program. Contacts the tutor before the course.					
<b>Course Purpose and Outline</b>					
A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.					
<b>Course Objective(s)</b>					
Understanding research background, basic knowledge and skills necessary for the research.					
<b>Lecture Style</b>					
Laboratory programs are conducted by the tutor.					
<b>Course Outline</b>					
Goals/outline: Fostering the academic specialists with particular knowledge and skills in the areas related to our professional. In particular, aiming ①to acquire the knowledge and technology throughout the perioperative management patients with severe systemic impaired organ function, ②to clarify the mechanisms of general anesthetic action and pain chronification in the human central nervous system that will help to develop methods to monitor intraoperative awareness and to diagnose chronic pain, ③to invent new modality of artificial ventilation, pain management, and fluid management in patients undergoing thoracic surgery aiming to improve their outcome, ④to identify mechanisms behind postoperative acute kidney injury and invent new measures for prevention, diagnosis, and treatment.					
<b>Grading System</b>					
A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b>					
Articles related to the research projects					
<b>TextBook</b>					
Miller's Anesthesia, 9 edition / Michael A. Gropper MD PhD: Elsevier, 2019					
<b>Reference Materials</b>					
Journals such as "Anesthesiology", "Anesthesia and Analgesia", "British Journal of Anaesthesia"					
<b>Email</b>					
uchida.mane@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Monday, PM13:00-17:00 Hospital, 5th Floor, Director's room in the OR					

<b>Lecture No</b>	041367				
<b>Subject title</b>	Practice of Anesthesiology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA TOKUJIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Depends on the program. Contacts the tutor before the course.					
<b>Course Purpose and Outline</b>					
A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.					
<b>Course Objective(s)</b>					
Understanding research background, basic knowledge and skills necessary for the research.					
<b>Lecture Style</b>					
Laboratory programs are conducted by the tutor.					
<b>Course Outline</b>					
Goals/Outline: Acquiring various anesthetic methods for clinical use as well as the basic knowledge and skills for research. In addition, future educators in the field experience teaching practice for trainee doctors.					
<b>Grading System</b>					
A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b>					
Articles related to the research projects					
<b>Reference Materials</b>					
Journals such as "Anesthesiology", "Anesthesia and Analgesia", "British Journal of Anaesthesia"					
<b>Email</b>					
uchida.mane@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Monday, PM13:00–17:00 Hospital, 5th Floor, Director's room in the OR					

<b>Lecture No</b>	041368				
<b>Subject title</b>	Laboratory practice of Anesthesiology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA TOKUJIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Depends on the program. Contacts the tutor before the course.					
<b>Course Purpose and Outline</b>					
A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.					
<b>Course Objective(s)</b>					
Understanding research background, basic knowledge and skills necessary for the research.					
<b>Lecture Style</b>					
Laboratory programs are conducted by the tutor.					
<b>Course Outline</b>					
Goals/Outline: Acquiring various anesthetic methods for clinical use as well as the basic knowledge and skills for research. In addition, future educators in the field experience teaching practice for trainee doctors.					
<b>Grading System</b>					
A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.					
<b>Prerequisite Reading</b>					
Articles related to the research projects					
<b>Reference Materials</b>					
Journals such as "Anesthesiology", "Anesthesia and Analgesia", "British Journal of Anaesthesia"					
<b>Email</b>					
uchida.mane@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Monday, PM13:00–17:00 Hospital, 5th Floor, Director's room in the OR					

<b>Lecture No</b>	041369				
<b>Subject title</b>	Lecture of Cardiovascular Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ARAI HIROKUNI, MIZUNO TOMOHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Different venue depending on the specific program					
<b>Course Purpose and Outline</b>					
To analyze the unsolved phenomena and etiologies of Cardiovascular diseases, and to acquire the ability and the skill to solve those mechanisms.					
<b>Course Objective(s)</b>					
To be able to point out the unsolved phenomena and the etiologies of Cardiovascular diseases, and to acquire the skills of analyzing and solving those problems.					
<b>Lecture Style</b>					
Small-group guidance					
<b>Course Outline</b>					
Goals/outline: Cardiovascular Surgery is a discipline of medical science which deals the surgical treatment of the disease of heart and aorta. Main objective of Cardiovascular Surgery in the graduate course is to provide students opportunity to study surgical anatomy, pathophysiology, pharmacology, and advanced treatment. Students are also taught basic research for the surgical treatment.					
<b>Grading System</b>					
Comprehensive evaluation system					
<b>Prerequisite Reading</b>					
You have to learn about basic knowledge about the etiologies, pathophysiologies, diagnosis, indications and surgical procedures of Cardiovascular diseases in advance.					
<b>Reference Materials</b>					
Nicholas Kouchoukos, Eugene Blackstone, Frank Hanley, James Kirklin, Kirklin/Barratt-Boyes CARDIAC SURGERY 4th Siavosh Khonsari, CARDIAC SURGERY: Safegards and Pitfalls in Operative Technique Laurence Cohn, CARDIAC SURGERY IN THE ADULT					
<b>Important Course Requirements</b>					
N/A					
<b>Note(s) to Students</b>					
N/A					
<b>Email</b>					
ARAI HIROKUNI:hiro.cvsg@tmd.ac.jp					

<b>Lecture No</b>	041370				
<b>Subject title</b>	Practice of Cardiovascular Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ARAI HIROKUNI, MIZUNO TOMOHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Different venue depending on the specific program					
<b>Course Purpose and Outline</b> To analyze the unsolved phenomena and etiologies of Cardiovascular diseases, and to acquire the ability and the skill to solve those mechanisms.					
<b>Course Objective(s)</b> To be able to point out the unsolved phenomena and the etiologies of Cardiovascular diseases, and to acquire the skills of analyzing and solving those problems.					
<b>Lecture Style</b> Small-group guidance					
<b>Course Outline</b> Goals/Outline: Practices on the methods and points of case history, physical examination, imaging diagnosis, and laboratory tests. The treatments and cares of patients are learned in accordance with the disease, as well as the perioperative cares and surgical techniques of cardiovascular surgery.					
<b>Grading System</b> Comprehensive evaluation system					
<b>Prerequisite Reading</b> You have to learn about basic knowledge about the etiologies, pathophysiologies, diagnosis, indications and surgical procedures of Cardiovascular diseases in advance.					
<b>Reference Materials</b> Nicholas Kouchoukos, Eugene Blackstone, Frank Hanley, James Kirklin, Kirklin/Barratt-Boyes CARDIAC SURGERY 4th Siavosh Khonsari, CARDIAC SURGERY: Safeguards and Pitfalls in Operative Technique Laurence Cohn, CARDIAC SURGERY IN THE ADULT					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> N/A					
<b>Email</b> ARAI HIROKUNI@hiro.cvsg@tmd.ac.jp					



<b>Lecture No</b>	041371				
<b>Subject title</b>	Laboratory practice of Cardiovascular Surgery	<b>Subject ID</b>			
<b>Instructors</b>	ARAI HIROKUNI, MIZUNO TOMOHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Different venue depending on the specific program					
<b>Course Purpose and Outline</b> To analyze the unsolved phenomena and etiologies of Cardiovascular diseases, and to acquire the ability and the skill to solve those mechanisms.					
<b>Course Objective(s)</b> To be able to point out the unsolved phenomena and the etiologies of Cardiovascular diseases, and to acquire the skills of analyzing and solving those problems.					
<b>Lecture Style</b> Small-group guidance					
<b>Course Outline</b> Goals/Outline: To elucidate the mechanism of ischemic heart diseases, such as left ventricle dilatation and subsequent heart failure, mitral valve regurgitation (MR) and left ventricle aneurysm. 1) Developing technique of beating mitral valve surgery 2) Developing new technique/surgery for ischemic heart disease 3) Research for prognosis of postoperative patients with long term follow up					
<b>Grading System</b> Comprehensive evaluation system					
<b>Prerequisite Reading</b> You have to learn about basic knowledge about the etiologies, pathophysiologies, diagnosis, indications and surgical procedures of Cardiovascular diseases in advance.					
<b>Reference Materials</b> Nicholas Kouchoukos, Eugene Blackstone, Frank Hanley, James Kirklin, Kirklin/Barratt-Boyes CARDIAC SURGERY 4th Siavosh Khonsari, CARDIAC SURGERY: Safeguards and Pitfalls in Operative Technique Laurence Cohn, CARDIAC SURGERY IN THE ADULT					
<b>Important Course Requirements</b> N/A					
<b>Note(s) to Students</b> N/A					
<b>Email</b> ARAI HIROKUNI:hiro.cvsg@tmd.ac.jp					

<b>Lecture No</b>	041372				
<b>Subject title</b>	Lecture of Nephrology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA SHINICHI, SOHARA EISEI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
MD Tower 13th floor Department of Nephrology					
<b>Course Purpose and Outline</b>					
We try to clarify the homeostatic actions in kidney and to understand the molecular pathogenesis of diseases caused by the dysregulations of kidney. Based on the pathogenesis, we try to develop novel therapeutic strategies.					
<b>Course Objective(s)</b>					
To understand the homeostatic actions in kidney and its dysregulations in disease states.					
<b>Lecture Style</b>					
Please refer to the teacher in charge of each program.					
<b>Course Outline</b>					
Goals/outline: We lecture molecular mechanism of homeostatic actions in kidney, and mechanisms of diseases when the homeostatic actions are dysregulated. In addition, we mention future prospective for advanced treatments for these diseases.					
<b>Grading System</b>					
We give a grade from comprehensive standpoint based on attendance and research results.					
<b>Prerequisite Reading</b>					
You should know the basic kidney structures and functions.					
<b>Reference Materials</b>					
Renal Pathophysiology The essential. Lippincott Williams & Wilkins Brenner & Recor's The Kidney. Elsevier.					
<b>Important Course Requirements</b>					
nothing special					
<b>Email</b>					
UCHIDA SHINICHI:suchida.kid@tmd.ac.jp					

<b>Lecture No</b>	041373				
<b>Subject title</b>	Practice of Nephrology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA SHINICHI, SOHARA EISEI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
MD Tower 13th floor Department of Nephrology					
<b>Course Purpose and Outline</b>					
We try to clarify the homeostatic actions in kidney and to understand the molecular pathogenesis of diseases caused by the dysregulations of kidney. Based on the pathogenesis, we try to develop novel therapeutic strategies.					
<b>Course Objective(s)</b>					
To understand the homeostatic actions in kidney and its dysregulations in disease states.					
<b>Lecture Style</b>					
Please refer to the teacher in charge of each program.					
<b>Course Outline</b>					
Goals/Outline: In hospitalized patients, we try to understand pathogenesis of their diseases caused by dysregulation of homeostatic actions in the kidney, and to discuss therapeutic approaches based on the pathogenesis.					
<b>Grading System</b>					
We give a grade from comprehensive standpoint based on attendance and research results.					
<b>Prerequisite Reading</b>					
You should know the basic kidney structures and functions.					
<b>Reference Materials</b>					
Renal Pathophysiology The essential. Lippincott Williams & Wilkins Brenner & Recor's The Kidney. Elsevier.					
<b>Important Course Requirements</b>					
nothing special					
<b>Email</b>					
UCHIDA SHINICHI:suchida.kid@tmd.ac.jp					

<b>Lecture No</b>	041374				
<b>Subject title</b>	Laboratory practice of Nephrology	<b>Subject ID</b>			
<b>Instructors</b>	UCHIDA SHINICHI, SOHARA EISEI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
MD Tower 13th floor Department of Nephrology					
<b>Course Purpose and Outline</b>					
We try to clarify the homeostatic actions in kidney and to understand the molecular pathogenesis of diseases caused by the dysregulations of kidney. Based on the pathogenesis, we try to develop novel therapeutic strategies.					
<b>Course Objective(s)</b>					
To understand the homeostatic actions in kidney and its dysregulations in disease states.					
<b>Lecture Style</b>					
Please refer to the teacher in charge of each program.					
<b>Course Outline</b>					
Goals/Outline: We are extensively studying channels and transporters and their upstream regulators. Especially, we are focusing on the molecular pathogenesis of salt-sensitive hypertension and its consequence in various organs in the body. Generation and analysis of genetically engineered mice is one of the major strategies for this research. We are considering the use of next generation sequencing to identify responsible genes for kidney disease of unknown etiology.					
<b>Grading System</b>					
We give a grade from comprehensive standpoint based on attendance and research results.					
<b>Prerequisite Reading</b>					
You should know the basic kidney structures and functions.					
<b>Reference Materials</b>					
Renal Pathophysiology The essential. Lippincott Williams & Wilkins Brenner & Recor's The Kidney. Elsevier.					
<b>Important Course Requirements</b>					
nothing special					
<b>Email</b>					
UCHIDA SHINICHI:suchida.kid@tmd.ac.jp					

<b>Lecture No</b>	041375				
<b>Subject title</b>	Lecture of Comprehensive Reproductive Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIYASAKA NAOYUKI, YOSHIKI NAOYUKI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese					
<b>Prerequisite Reading</b>					
<b>Email</b> MIYASAKA NAOYUKI:Miyasaka Naoyuki: n.miyasaka.gyne@tmd.ac.jp					
<b>Instructor's Contact Information</b> MIYASAKA NAOYUKI:sepcial lecture: once/year journal club: every monday 8:00-8:30 case conference: every monday 15:00-17:00 gynecology, radiology and pathology joint meeting: every month 18:00-19:30 research confenrece: every month 18:30-20:00					

<b>Lecture No</b>	041376				
<b>Subject title</b>	Practice of Comprehensive Reproductive Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIYASAKA NAOYUKI, YOSHIKI NAOYUKI, ISHIKAWA TOMONORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Prerequisite Reading</b>					
<b>Email</b> MIYASAKA NAOYUKI:Miyasaka Naoyuki: n.miyasaka.gyne@tmd.ac.jp					
<b>Instructor's Contact Information</b> MIYASAKA NAOYUKI:sepcial lecture: once/year journal club: every monday 8:00–8:30 case conference: every monday 15:00–17:00 gynecology, radiology and pathology joint meeting: every month 18:00–19:30 research confenrece: every month 18:30–20:00					

<b>Lecture No</b>	041377				
<b>Subject title</b>	Laboratory practice of Comprehensive Reproductive Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIYASAKA NAOYUKI, YOSHIKI NAOYUKI, ISHIKAWA TOMONORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
All classes are taught in Japanese.					
<b>Prerequisite Reading</b>					
<b>Email</b>					
MIYASAKA NAOYUKI: Miyasaka Naoyuki: n.miyasaka.gyne@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MIYASAKA NAOYUKI: sepcial lecture: once/year					
journal club: every monday 8:00–8:30					
case conference: every monday 15:00–17:00					
gynecology, radiology and pathology joint meeting: every month 18:00–19:30					
research confenrece: every month 18:30–20:00					

<b>Lecture No</b>	041378				
<b>Subject title</b>	Lecture of Urology	<b>Subject ID</b>			
<b>Instructors</b>	FUJII YASUHISA, YOSHIDA SOICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
Venues are different according to the program.					
<b>Course Purpose and Outline</b>					
Urology is the surgical specialty that focuses on the urinary tracts, and on the male reproductive system. The organs covered by urology include the kidneys, adrenal glands, ureters, urinary bladder, urethra, and the male reproductive organs (testes, epididymis, vas deferens, seminal vesicles, prostate and penis). Urology is closely related to, and in some cases overlaps with, diverse medical fields including oncology, nephrology, gynecology, andrology, neurology, pediatric surgery, gastroenterology, and endocrinology. Minimally-invasive surgery for urological disorders has been one of the most important topics in this field.					
<b>Course Objective(s)</b>					
Our course objectives include;					
1) to understand the pathophysiology and means of diagnosis and treatment of various urological disorders and to appropriately diagnose, treat, and manage patients with these diseases.					
2) to learn gasless single-port surgery, which is one of the minimally-invasive surgeries and has been developed in our department.					
3) through basic research, to gain new findings which will lead to the improvement of oncological and functional outcomes of patients with urological diseases.					
<b>Lecture Style</b>					
A small class in which the students will be trained through mutual discussion.					
<b>Course Outline</b>					
Goals/outline					
The urinary tracts and the male reproductive system are well controlled by automatic and somatic nervous systems and endocrine systems. The students will learn these modulating systems, destruction of which will lead to various urologic symptoms and diseases. And the students will also learn the etiology, diagnosis and treatment of urologic malignant diseases. Minimally-invasive surgery for urological disorders has been one of the most important topics in this field.					
<b>Grading System</b>					
Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, the number of presentation in the international meetings and publication in the journals, conference presentations, and surgery participation.					
<b>Prerequisite Reading</b>					
It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.					
<b>TextBook</b>					
ガスレス・シングルポート泌尿器手術：入門編：若手術者による手術写真と手引き／日本ミニマム創泌尿器内視鏡外科学会編,日本ミニマム創泌尿器内視鏡外科学会,：医学図書出版, 2016					
Gasless Single-Port RoboSurgeon Surgery in Urology／Kazunori Kihara：Springer, 2015					
イラストレイテッドミニマム創内視鏡下泌尿器手術／木原和徳著,木原, 和徳,：医学書院, 2007					
Campbell-Walsh Urology 12th Edition／Alan Partin：Elsevier, 2020					
European Association of Urology Guidelines, <a href="http://www.uroweb.org/guidelines/online-guidelines/">http://www.uroweb.org/guidelines/online-guidelines/</a>					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
Nothing in particular					



<b>Lecture No</b>	041379				
<b>Subject title</b>	Practice of Urology	<b>Subject ID</b>			
<b>Instructors</b>	FUJII YASUHISA, YOSHIDA SOICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Venues are different according to the program.					
<b>Course Purpose and Outline</b>					
Urology is the surgical specialty that focuses on the urinary tracts, and on the male reproductive system. The organs covered by urology include the kidneys, adrenal glands, ureters, urinary bladder, urethra, and the male reproductive organs (testes, epididymis, vas deferens, seminal vesicles, prostate and penis). Urology is closely related to, and in some cases overlaps with, diverse medical fields including oncology, nephrology, gynecology, andrology, neurology, pediatric surgery, gastroenterology, and endocrinology. Minimally-invasive surgery for urological disorders has been one of the most important topics in this field.					
<b>Course Objective(s)</b>					
Our course objectives include;					
1) to understand the pathophysiology and means of diagnosis and treatment of various urological disorders and to appropriately diagnose, treat, and manage patients with these diseases.					
2) to learn gasless single-port surgery, which is one of the minimally-invasive surgeries and has been developed in our department.					
3) through basic research, to gain new findings which will lead to the improvement of oncological and functional outcomes of patients with urological diseases.					
<b>Lecture Style</b>					
A small class in which the students will be trained through mutual discussion.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
<b>Grading System</b>					
Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, the number of presentation in the international meetings and publication in the journals, conference presentations, and surgery participation.					
<b>Prerequisite Reading</b>					
It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.					
<b>TextBook</b>					
ガスレス・シングルポート泌尿器手術：入門編：若手術者による手術写真と手引き／日本ミニマム創泌尿器内視鏡外科学会編、日本ミニマム創泌尿器内視鏡外科学会：医学図書出版、2016					
Gasless Single-Port RoboSurgeon Surgery in Urology／Kazunori Kihara：Springer、2015					
イラストレイテッドミニマム創内視鏡下泌尿器手術／木原和徳著、木原、和徳：医学書院、2007					
CAMPBELL-WALSH UROLOGY, 12th EDITION／Alan Partin：Elsevier、2020					
European Association of Urology Guidelines, <a href="http://www.uroweb.org/guidelines/online-guidelines/">http://www.uroweb.org/guidelines/online-guidelines/</a>					
<b>Relationship With Other Subjects</b>					
Nothing in particular					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
Nothing in particular					

<b>Lecture No</b>	041380				
<b>Subject title</b>	Laboratory practice of Urology			<b>Subject ID</b>	
<b>Instructors</b>	FUJII YASUHISA, YOSHIDA SOICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b> Venues are different according to the program.					
<b>Course Purpose and Outline</b> Urology is the surgical specialty that focuses on the urinary tracts, and on the male reproductive system. The organs covered by urology include the kidneys, adrenal glands, ureters, urinary bladder, urethra, and the male reproductive organs (testes, epididymis, vas deferens, seminal vesicles, prostate and penis). Urology is closely related to, and in some cases overlaps with, diverse medical fields including oncology, nephrology, gynecology, andrology, neurology, pediatric surgery, gastroenterology, and endocrinology. Minimally-invasive surgery for urological disorders has been one of the most important topics in this field.					
<b>Course Objective(s)</b> Our course objectives include; 1) to understand the pathophysiology and means of diagnosis and treatment of various urological disorders and to appropriately diagnose, treat, and manage patients with these diseases. 2) to learn gasless single-port surgery, which is one of the minimally-invasive surgeries and has been developed in our department. 3) through basic research, to gain new findings which will lead to the improvement of oncological and functional outcomes of patients with urological diseases.					
<b>Lecture Style</b> A small class in which the students will be trained through mutual discussion.					
<b>Course Outline</b> Goals/Outline: Following studies have been extensively carried out in our laboratory with various biological and molecular biological techniques: 1) Overcoming therapeutic resistance to chemo- and/or radiotherapy against urological malignancies using novel molecular targeted agents 2) Investigation on functional roles of mitochondrial molecular chaperone TRAP1 in malignant cancer cells 3) Development of radiation-sensitizing strategy to bone metastasis by modulating STAT1 expression 4) Investigation on the underlying mechanisms of diffusion-weighted MRI signals of urological malignancies					
<b>Grading System</b> Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, the number of presentation in the international meetings and publication in the journals, conference presentations, and surgery participation.					
<b>Prerequisite Reading</b> It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.					
<b>TextBook</b> ガスレス・シングルポート泌尿器手術：入門編：若手術者による手術写真と手引き／日本ミニマム創泌尿器内視鏡外科学会編,日本ミニマム創泌尿器内視鏡外科学会：医学図書出版, 2016 Gasless Single-Port RoboSurgeon Surgery in Urology／Kazunori Kihara：Springer, 2015 イラストレイテッドミニマム創内視鏡下泌尿器手術／木原和徳著,木原, 和徳：医学書院, 2007 CAMPBELL-WALSH UROLOGY, 12th EDITION／Alan Partin：Elsevier, 2020 European Association of Urology Guidelines, <a href="http://www.uroweb.org/guidelines/online-guidelines/">http://www.uroweb.org/guidelines/online-guidelines/</a>					
<b>Relationship With Other Subjects</b> Nothing in particular					
<b>Important Course Requirements</b> Nothing in particular					
<b>Note(s) to Students</b> Nothing in particular					

<b>Lecture No</b>	041381				
<b>Subject title</b>	Lecture of Gastrointestinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	KINUGASA Yuusuke, NAKAJIMA YASUAKI, TOKUNAGA Masanori, YAMAUCHI SHINICHI, SATOU Yuuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Different venue depending on the specific program, mainly at our medical office					
<b>Course Purpose and Outline</b>					
The graduates will understand various gastrointestinal diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of gastrointestinal surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on gastrointestinal disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
Goals/outline:					
Our goals are to develop the new methods of diagnosis and treatment of the disease of digestive tract to contribute to the medical progression. Also, we aim to bring up young doctors of gastrointestinal and general surgery.					
Lecture, Seminar on every Tuesday, at 6:00-7:00 pm.					
Conference on every Monday and Thursday, at 7:30-8:30 am.					
<b>Grading System</b>					
Grading is performed according to the attending to our lecture, conference and clinical practice. The contents of the research are also graded.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Japanese Classification of Esophageal Cancer: 11th edition: Part I. Japan Esophageal Society. Esophagus 2017,14(1):1-36.					
Japanese Classification of Esophageal Cancer: 11th edition: Part II and III. Japan Esophageal Society. Esophagus 2017,14(1):37-65.					
Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo					
Surgery of THE ANUS RECTUM & COLON. Michael RB Keighley & Norman S Williams, W.B Saunders London					
Japanese gastric cancer treatment guidelines 2014(ver.4) Japanese Gastric Cancer Association. Gastric Cancer 2017,20(1):1-19.					
Japanese classification of gastric carcinoma: 3rd English edition Japanese Gastric Cancer Association. Gastric Cancer 2011,14:101-112.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
Nothing in particular					

<b>Lecture No</b>	041382				
<b>Subject title</b>	Practice of Gastrointestinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	KINUGASA Yuusuke, NAKAJIMA YASUAKI, TOKUNAGA Masanori, YAMAUCHI SHINICHI, SATOU Yuuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Different venue depending on the specific program, mainly at our medical office					
<b>Course Purpose and Outline</b>					
The graduates will understand various gastrointestinal diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of gastrointestinal surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on gastrointestinal disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
Goals/Outline:					
Our goals are to learn and study the methodology of the diagnosis and treatment of the gastrointestinal surgery clinically.					
Professor ' s round: every Tuesday, Wednesday, and Friday, at 7:45–8:30 a.m.					
Pre- and post-operative Conference: Every Monday and Thursday, at 7:30–8:30 a.m.					
Surgical Operation: Every day					
GI Conference: Every Tuesday, at 6:00–7:00 p.m.					
Joint Conference with Pathological Department: Every Thursday at 6:00–7:00 p.m.					
<b>Grading System</b>					
Grading is performed according to the attending to our lecture, conference and clinical practice. The contents of the research are also graded.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Japanese Classification of Esophageal Cancer: 11th edition: Part I. Japan Esophageal Society. Esophagus 2017,14(1):1–36.					
Japanese Classification of Esophageal Cancer: 11th edition: Part II and III. Japan Esophageal Society. Esophagus 2017,14(1):37–65.					
Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo					
Surgery of THE ANUS RECTUM & COLON. Michael RB Keighley & Norman S Williams, W.B Saunders London					
Japanese gastric cancer treatment guidelines 2014(ver.4) Japanese Gastric Cancer Association. Gastric Cancer 2017,20(1):1–19.					
Japanese classification of gastric carcinoma: 3rd English edition Japanese Gastric Cancer Association. Gastric Cancer 2011,14:101–112.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
Nothing in particular					

<b>Lecture No</b>	041383				
<b>Subject title</b>	Laboratory practice of Gastrointestinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	KINUGASA Yuusuke, NAKAJIMA YASUAKI, TOKUNAGA Masanori, YAMAUCHI SHINICHI, SATOU Yuuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Different venue depending on the specific program, mainly at our medical office					
<b>Course Purpose and Outline</b>					
The graduates will understand various gastrointestinal diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of gastrointestinal surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on gastrointestinal disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.					
<b>Course Outline</b>					
Check with the teacher in charge for the program which is not specifically scheduled.					
Goals/Outline:					
Our goals are to analyze the disease of digestive tract physiologically, molecular biologically, and pathologically, and to examine the general surgical technique, post-operative management, preventive medicine, and epidemiology.					
Participation in research groups: Esophageal, Gastric and Colo-rectal team					
<b>Grading System</b>					
Grading is performed according to the attending to our lecture, conference and clinical practice. The contents of the research are also graded.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Japanese Classification of Esophageal Cancer: 11th edition: Part I. Japan Esophageal Society. Esophagus 2017,14(1):1-36.					
Japanese Classification of Esophageal Cancer: 11th edition: Part II and III. Japan Esophageal Society. Esophagus 2017,14(1):37-65.					
Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo					
Surgery of THE ANUS RECTUM & COLON. Michael RB Keighley & Norman S Williams, W.B Saunders London					
Japanese gastric cancer treatment guidelines 2014(ver.4) Japanese Gastric Cancer Association. Gastric Cancer 2017,20(1):1-19.					
Japanese classification of gastric carcinoma: 3rd English edition Japanese Gastric Cancer Association. Gastric Cancer 2011,14:101-112.					
<b>Important Course Requirements</b>					
Nothing in particular					
<b>Note(s) to Students</b>					
Nothing in particular					

<b>Lecture No</b>	041384				
<b>Subject title</b>	Lecture of Thoracic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	OKUBO KENICHI, ISHIBASHI HIRONORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> M&D tower, South S2060-2061					
<b>Course Purpose and Outline</b> Thoracic Surgery is a discipline of medical science which deals the surgical treatment for the disease of lung, mediastinum and diaphragm. The goal of the course is to educate next-age thoracic surgeon with surgical mind and well-trained surgical skills.					
<b>Course Objective(s)</b> Main objective of Thoracic Surgery in the graduate course is to provide students opportunity to study surgical anatomy, pathophysiology, pharmacology, and advanced treatment. Students are taught basic scientific research regarding the pathogenesis of respiratory diseases.					
<b>Lecture Style</b> Small-group guidance					
<b>Course Outline</b> Goals/outline: Thoracic Surgery deal with surgical diagnosis and treatment for respiratory diseases, such as lung cancer, metastatic pulmonary tumors, infectious diseases, and pleural malignancy. Students are taught the latest basic and/or clinical research for the surgical treatment.					
<b>Grading System</b> Routine bench work, laboratory meeting and discussion, and results of each study are graded. Presentaion in Progress Meeting is mandatory and graded. In addition, presentation and participation in scientific meetings or conferences are comprehesively graded.					
<b>Prerequisite Reading</b> Needs for basic surgical approach in thoracic surgery					
<b>Reference Materials</b> Not specifically indicated					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Students who have interest in thoracic surgery are welcome to join us.					
<b>Email</b> OKUBO KENICHI:office.thsr@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKUBO KENICHI:Monday-Friday 9:00AM-5:00PM M&D Tower 20F Department of Thoracic Surgery					

<b>Lecture No</b>	041385				
<b>Subject title</b>	Practice of Thoracic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	OKUBO KENICHI, ISHIBASHI HIRONORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> M&D tower, South S2060–2061					
<b>Course Purpose and Outline</b> Thoracic Surgery is a discipline of medical science which deals the surgical treatment for the disease of lung, mediastinum and diaphragm. The goal of the course is to educate next-age thoracic surgeon with surgical mind and well-trained surgical skills.					
<b>Course Objective(s)</b> Main objective of Thoracic Surgery in the graduate course is to provide students opportunity to study surgical anatomy, pathophysiology, pharmacology, and advanced treatment. Students are taught basic scientific research regarding the pathogenesis of respiratory diseases.					
<b>Lecture Style</b> Small-group guidance					
<b>Course Outline</b> Goals/Outline: Practices on the methods and points of case history, physical examination, imaging diagnosis, and laboratory tests. The treatments and cares of patients are learned in accordance with the disease and cancer stage, as well as the perioperative cares and surgical techniques of thoracic surgery.					
<b>Grading System</b> Routine bench work, laboratory meeting and discussion, and results of each study are graded. Presentaion in Progress Meeting is mandatory and graded. In addition, presentation and participation in scientific meetings or conferences are comprehesively graded.					
<b>Prerequisite Reading</b> Needs for basic surgical approach in thoracic surgery					
<b>Reference Materials</b> Not specifically indicated					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Students who have interest in thoracic surgery are welcome to join us.					
<b>Email</b> OKUBO KENICHI:office.thsr@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKUBO KENICHI:Monday–Friday 9:00AM–5:00PM M&D Tower 20F Department of Thoracic Surgery					

<b>Lecture No</b>	041386				
<b>Subject title</b>	Laboratory practice of Thoracic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	OKUBO KENICHI, ISHIBASHI HIRONORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> M&D tower, South S2060–2061					
<b>Course Purpose and Outline</b> Thoracic Surgery is a discipline of medical science which deals the surgical treatment for the disease of lung, mediastinum and diaphragm. The goal of the course is to educate next-age thoracic surgeon with surgical mind and well-trained surgical skills.					
<b>Course Objective(s)</b> Main objective of Thoracic Surgery in the graduate course is to provide students opportunity to study surgical anatomy, pathophysiology, pharmacology, and advanced treatment. Students are taught basic scientific research regarding the pathogenesis of respiratory diseases.					
<b>Lecture Style</b> Small-group guidance					
<b>Course Outline</b> Goals/Outline: 1) Developing of novel therapeutics for lung cancer by elucidating invasion/metastasis mechanism of cancers 2) Identification of genes as predicting factors in surgically resected specimens 3) Development of multimodality treatment for locally advanced lung cancer					
<b>Grading System</b> Routine bench work, laboratory meeting and discussion, and results of each study are graded. Presentaion in Progress Meeting is mandatory and graded. In addition, presentation and participation in scientific meetings or conferences are comprehesively graded.					
<b>Prerequisite Reading</b> Needs for basic surgical approach in thoracic surgery					
<b>Reference Materials</b> Not specifically indicated					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Students who have interest in thoracic surgery are welcome to join us.					
<b>Email</b> OKUBO KENICHI:office.thsr@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKUBO KENICHI:Monday–Friday 9:00AM–5:00PM M&D Tower 20F Department of Thoracic Surgery					



<b>Lecture No</b>	041387				
<b>Subject title</b>	Lecture of Igakuken Disease-oriented Molecular Biology			<b>Subject ID</b>	
<b>Instructors</b>	Takahiko Hara, Makoto Arai, OKADO Haruo, HASEGAWA Masato, Takashi Shichita, MIYAOKA Yuichiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Auditorium or meeting rooms at TMiMS. Please make a contact with the corresponding professor before starting each class.					
<b>Course Purpose and Outline</b> For the healthy aging, we must reduce the risk rate of cancer, diabetes and stroke. We also need to develop novel therapeutic approaches against incurable genetic disorders and mental/neurodegenerative diseases. Recently, the iPS technology has been proven to be useful not only for generating functional cells for transplantation but also for establishing patient-based disease models. We will educate graduate students who have sufficient knowledge and experimental techniques in the above described biomedical fields.					
<b>Course Objective(s)</b> Reading capacity of latest articles in the biomedical fields. Writing and presentation capacity of each participant's own research data obtained by ethically correct procedures.					
<b>Lecture Style</b> All the classes will be interactive with small numbers of participants.					
<b>Course Outline</b> Goals/outline: By listening to professional lectures, participants are able to understand molecular mechanisms of life-threatening diseases such as cancer, diabetes, stroke, genetic disorders, schizophrenia, amyotrophic lateral sclerosis, and brain malformations. Such knowledge will eventually lead us to develop novel therapeutic strategies against them. In addition, it is important to establish good animal models (including genetically engineered mouse strains), which faithfully reproduce symptom and progression of the diseases. We will provide such lectures in following programs.  Igakuken symposium (1 per year) Igakuken lecture series (8 per year) Igakuken international symposia (2 per year) Igakuken seminars (2-3 per month) Journal club: [Takahiko Hara] Tuesday 16:00-18:00 [Makoto Arai] Thursday 15:00-17:00 [Masato Hasegawa] Friday 14:00-16:00 [Haruo Okado] Tuesday 12:00-14:00 [Yuichiro Miyaoka] Friday 14:00-16:00 [Takashi Shichita] Thursday 9:30-11:30					
<b>Grading System</b> Participants will be evaluated based on their overall attendance rate and enthusiasm to lecture classes and courses (70%), and their research performance and publication in conferences and/or manuscripts (30%).					
<b>Prerequisite Reading</b> The corresponding professor will individually advise participants according to their research plan and capacity.					
<b>Reference Materials</b> The corresponding will individually show appropriate references to participants.					
<b>Important Course Requirements</b> None.					
<b>Note(s) to Students</b> None.					
<b>Email</b> Takahiko Hara:hara-tk@igakuken.or.jp					
<b>Instructor's Contact Information</b> Takahiko Hara:Friday 13:00-15:00 @TMiMS N303					

<b>Lecture No</b>	041388				
<b>Subject title</b>	Practice of Igakuken Disease-oriented Molecular Biology	<b>Subject ID</b>			
<b>Instructors</b>	Takahiko Hara, Makoto Arai, OKADO Haruo, HASEGAWA Masato, Takashi Shichita, MIYAOKA Yuichiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Auditorium or meeting rooms at TMiMS. Please make a contact with the corresponding professor before starting each class.					
<b>Course Purpose and Outline</b> For the healthy aging, we must reduce the risk rate of cancer, diabetes and stroke. We also need to develop novel therapeutic approaches against incurable genetic disorders and mental/neurodegenerative diseases. Recently, the iPS technology has been proven to be useful not only for generating functional cells for transplantation but also for establishing patient-based disease models. We will educate graduate students who have sufficient knowledge and experimental techniques in the above described biomedical fields.					
<b>Course Objective(s)</b> Participant summarizes the results of research activity as a progress report. Through mutual discussion with professors and other lab members, he/she would know a better future direction. Once obtaining sufficient experimental data to draw a definitive conclusion, participant can present his/her paper in a public or closed conference. We will instruct how to make a good poster and understandable presentation files. Meanwhile, participants can learn the newest knowledge and trend in a particular medical research field of their interest by reporting highlights of the conference/symposium to professors and lab members.					
<b>Lecture Style</b> All the classes will be interactive with small numbers of participants.					
<b>Course Outline</b> Research progress report: [Takahiko Hara] Thursday 16:00–18:00 [Makoto Arai] Thursday 13:00–15:00 [Masato Hasegawa] Monday 16:00–18:00 [Haruo Okado] Thursday 12:00–14:00, [Yuichiro Miyaoka] Tuesday 12:00–14:00 [Takashi Shichita] Tuesday 9:30–11:30  Rehearsals and reports for conferences (1–2 per year) Igakuken internal conference for young investigators (1 per year)					
<b>Grading System</b> Participants will be evaluated based on their overall attendance rate and enthusiasm to lecture classes and courses (70%), and their research performance and publication in conferences and/or manuscripts (30%).					
<b>Prerequisite Reading</b> The corresponding professor will individually advise participants according to their research plan and capacity.					
<b>Reference Materials</b> The corresponding will individually show appropriate references to participants.					
<b>Important Course Requirements</b> None.					
<b>Note(s) to Students</b> None.					
<b>Email</b> Takahiko Hara:hara-tk@igakuken.or.jp					
<b>Instructor's Contact Information</b> Takahiko Hara:Friday 13:00–15:00 @TMiMS N303					

<b>Lecture No</b>	041389				
<b>Subject title</b>	Laboratory practice of Igakuken Disease-oriented Molecular Biology	<b>Subject ID</b>			
<b>Instructors</b>	Takahiko Hara, Makoto Arai, OKADO Haruo, HASEGAWA Masato, Takashi Shichita, MIYAOKA Yuichiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>	Each laboratory at TMiMS.				
<b>Course Purpose and Outline</b>	For the healthy aging, we must reduce the risk rate of cancer, diabetes and stroke. We also need to develop novel therapeutic approaches against incurable genetic disorders and mental/neurodegenerative diseases. Recently, the iPS technology has been proven to be useful not only for generating functional cells for transplantation but also for establishing patient-based disease models. We will educate graduate students who have sufficient knowledge and experimental techniques in the above described biomedical fields.				
<b>Course Objective(s)</b>	Reading capacity of latest articles in the biomedical fields. Writing and presentation capacity of each participant's own research data obtained by ethically correct procedures.				
<b>Lecture Style</b>	All the classes will be interactive with small numbers of participants.				
<b>Course Outline</b>	<p>[Takahiko Hara] We attempt to elucidate how hematopoietic stem cells are developed, self-renewed, differentiated into mature blood cells, and leukemized by utilizing in vitro differentiation systems of ES/iPS cells, conditional KO mouse strains, and in vivo transplantation models. Such a knowledge will be used for developing regeneration methods for blood cells and anti-leukemia drugs. In addition, we advance the molecular biology of CXCL14, which is involved in obesity-induced diabetes, carcinogenesis, feeding behavior, etc.</p> <p>[Makoto Arai] Our research focuses on unraveling the pathophysiology of mental illnesses using molecular biology tools. Our ultimate goal is to identify new disease mechanisms, leading to the development of novel and more efficacious therapies. We perform genetic association studies, as well as metabolomics studies using blood and iPS cells from patients with mental disorders. Any abnormalities identified from patient samples are investigated further, using in vitro and in vivo systems, such as, cell culture assays to highlight functional alterations and behavioral studies in gene knock-out mouse models.</p> <p>[Masato Hasegawa] We investigate the molecular pathogenesis and progression of neurodegenerative diseases including Alzheimer's disease, Parkinson's disease and amyotrophic lateral sclerosis. We use biochemistry, immunohistochemistry and molecular biology in all our work of in vitro, cellular and animal models to find effective ways for clinical therapy.</p> <p>[Haruo Okado] To discover the fundamental cause of various nervous diseases, e.g., brain tumors, brain malformations, and neurodevelopmental disorders, we will study the molecular mechanisms for the regulation of neural development in the cerebral cortex using gene-targeted mice, primary cultures, viral vectors, in-utero electroporation, real-time imaging of slice culture, immunohistochemistry, and transcription analysis.</p> <p>[Yuichiro Miyaoka] Our goal is to develop new therapeutic approaches for genetic disorders by using genome editing of human iPS cells. We introduce causative mutations of heart and liver diseases into human iPS cells from healthy patients to study the pathogenic mechanism by analyzing these cells with cellular and molecular biology techniques such as PCR and immuno-staining. We also seek for ways to improve genome editing technologies including CRISPR/Cas9 to achieve precise genome editing for medical purposes.</p> <p>[Takashi Shichita] To develop the therapeutic method for stroke and dementia, we will clarify the cellular and molecular mechanisms underlying sterile inflammation and tissue repair after brain tissue injury. In addition to the classical method of molecular biology and biochemistry, the latest analysis methods of immunology, neuroscience, and epigenetics are applied to our research. By combining these techniques, to clarify the function of each brain cells in cerebral inflammation and neural repair is our goal.</p>				
<b>Grading System</b>	Participants will be evaluated based on their overall attendance rate and enthusiasm to lecture classes and courses (70%), and their research performance and publication in conferences and/or manuscripts (30%).				
<b>Prerequisite Reading</b>	The corresponding professor will individually advise participants according to their research plan and capacity.				
<b>Reference Materials</b>	The corresponding will individually show appropriate references to participants.				
<b>Important Course Requirement</b>	None.				
<b>Note(s) to Students</b>	None.				
<b>Reference URL</b>	<a href="http://www.igakuken.or.jp/english/">http://www.igakuken.or.jp/english/</a>				
<b>Email</b>	Takahiko Hara:hara-tk@igakuken.or.jp				
<b>Instructor's Contact Information</b>	Takahiko Hara:Friday 13:00–15:00 @TMiMS N303				

<b>Lecture No</b>	041390				
<b>Subject title</b>	Lecture of Clinical Anatomy	<b>Subject ID</b>			
<b>Instructors</b>	AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Various rooms will be used depending on the program. Please check by yourself or ask instructors before attending the course.					
<b>Course Purpose and Outline</b>					
Clinical Anatomy is a field of study to solve the problems from clinical medicine through formulations of human anatomical and developmental biological bases of diagnoses and surgical procedures. The course is aimed to understand the structure of the human body based on the human anatomy and acquire an ability to describe the human body structures clearly from the findings of observations.					
<b>Course Objective(s)</b>					
The course is aimed to understand the spatial arrangements of human body structures from various angles and acquire the observing ability as a medical worker and a researcher.					
<b>Lecture Style</b>					
Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.					
<b>Course Outline</b>					
Goals/outline: Lectures are aimed to understand clinical anatomy for proper diagnosis and treatment. Comparative anatomy and developmental biology are also applied for better understanding about the spatial arrangement of the organs or vessels.					
<b>Grading System</b>					
Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.					
<b>Prerequisite Reading</b>					
Trying to understand the basic anatomical structures and the developmental processes of the parts of the body which each student is interested in. Trying to pick up unclarified and controversial issues on diagnoses and surgical procedures.					
<b>Reference Materials</b>					
Gray's Anatomy for Students, 4th Edition, 2019, Elsevier, Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins, Principles of Development, Fourth Edition, 2011, Oxford University Press					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
The number of students is not limited.					

<b>Lecture No</b>	041391				
<b>Subject title</b>	Practice of Clinical Anatomy	<b>Subject ID</b>			
<b>Instructors</b>	AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Various rooms will be used depending on the program. Please check by yourself or ask instructors before attending the course.					
<b>Course Purpose and Outline</b>					
Clinical Anatomy is a field of study to solve the problems from clinical medicine through formulations of human anatomical and developmental biological bases of diagnoses and surgical procedures. The course is aimed to understand the structure of the human body based on the human anatomy and acquire an ability to describe the human body structures clearly from the findings of observations.					
<b>Course Objective(s)</b>					
The course is aimed to understand the spatial arrangements of human body structures from various angles and acquire the observing ability as a medical worker and a researcher.					
<b>Lecture Style</b>					
Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.					
<b>Course Outline</b>					
Goals/Outline: Practice is aimed to find out the way to understand the facts. This process is designed through the dissected cadavers, or reading papers. Staining or special dissection technique is available depends on the research purpose.					
<b>Grading System</b>					
Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.					
<b>Prerequisite Reading</b>					
Trying to understand the basic anatomical structures and the developmental processes of the parts of the body which each student is interested in. Trying to pick up unclarified and controversial issues on diagnoses and surgical procedures.					
<b>Reference Materials</b>					
Gray's Anatomy for Students, 4th Edition, 2019, Elsevier, Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins, Principles of Development, Fourth Edition, 2011, Oxford University Press					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
The number of students is not limited.					

<b>Lecture No</b>	041392				
<b>Subject title</b>	Laboratory practice of Clinical Anatomy			<b>Subject ID</b>	
<b>Instructors</b>	AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Various rooms will be used depending on the program. Please check by yourself or ask instructors before attending the course.					
<b>Course Purpose and Outline</b>					
Clinical Anatomy is a field of study to solve the problems from clinical medicine through formulations of human anatomical and developmental biological bases of diagnoses and surgical procedures. The course is aimed to understand the structure of the human body based on the human anatomy and acquire an ability to describe the human body structures clearly from the findings of observations.					
<b>Course Objective(s)</b>					
The course is aimed to understand the spatial arrangements of human body structures from various angles and acquire the observing ability as a medical worker and a researcher.					
<b>Lecture Style</b>					
Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.					
<b>Course Outline</b>					
Goals/Outline: Lab is aimed to find out the way to reveal the facts. Histological analysis or embryological research is helpful for understanding of the clinical anatomy. These techniques are applied for special part of the body with student's special interest. Especially we are active in the research fields of cloacal development and synovial joint development using genetically modified mouse embryos.					
<b>Grading System</b>					
Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.					
<b>Prerequisite Reading</b>					
Trying to understand the basic anatomical structures and the developmental processes of the parts of the body which each student is interested in. Trying to pick up unclarified and controversial issues on diagnoses and surgical procedures.					
<b>Reference Materials</b>					
Gray's Anatomy for Students, 4th Edition, 2019, Elsevier, Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins, Principles of Development, Fourth Edition, 2011, Oxford University Press					
<b>Important Course Requirements</b>					
none					
<b>Note(s) to Students</b>					
The number of students is not limited.					

<b>Lecture No</b>	041393				
<b>Subject title</b>	Lecture of Systems BioMedicine			<b>Subject ID</b>	
<b>Instructors</b>	ASAHARA HIROSHI, CHIBA TOMOKI, MATSUSHIMA TAKAHIDE, KURIMOTO Ryouta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Not determined yet.					
<b>Course Purpose and Outline</b>					
<p>This course covers systems biology, non-coding RNA and epigenetics in medical fields. Our recent accomplishment of a whole-mount in situ hybridization (WISH) database, termed EMBRY5, containing expression data of 1520 transcription factors and cofactors expressed in E9.5, E10.5, and E11.5 mouse embryos led us to identify critical cascade for myogenesis (Rp58; Dev Cell, 2009) and tendon development (Mkx, PNAS 2011). Also, our current study on non-coding RNA provides evidence that microRNA can act not only for cartilage development but also for its homeostasis against arthritis (Genes Dev, 2011). These findings and strategies will be shared in this course.</p>					
<b>Course Objective(s)</b>					
<p>Subject1: The function of non-coding RNA in development and diseases will be examined.</p> <p>Subject2: Genome dynamics during embryogenesis will be monitored by new technique.</p> <p>Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.</p>					
<b>Lecture Style</b>					
Concept and techniques of systems biomedicine will be introduced in the seminar series.					
<b>Course Outline</b>					
<p>Goals/outline:</p> <p>Analyze genome network for tissue development and pathogenesis of inflammation by combining multiple systems approaches.</p>					
<b>Grading System</b>					
Individual' s acquisition will be carefully evaluated by presentation, report and publication.					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
The attendee may have to utilize adenovirus and mice samples.					

<b>Lecture No</b>	041394				
<b>Subject title</b>	Practice of Systems BioMedicine	<b>Subject ID</b>			
<b>Instructors</b>	ASAHARA HIROSHI, CHIBA TOMOKI, MATSUSHIMA TAKAHIDE, KURIMOTO Ryouta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Not determined yet.					
<b>Course Purpose and Outline</b>					
<p>This course covers systems biology, non-coding RNA and epigenetics in medical fields. Our recent accomplishment of a whole-mount in situ hybridization (WISH) database, termed EMBRY5, containing expression data of 1520 transcription factors and cofactors expressed in E9.5, E10.5, and E11.5 mouse embryos led us to identify critical cascade for myogenesis (Rp58; Dev Cell, 2009) and tendon development (Mkx, PNAS 2011). Also, our current study on non-coding RNA provides evidence that microRNA can act not only for cartilage development but also for its homeostasis against arthritis (Genes Dev, 2011). These findings and strategies will be shared in this course.</p>					
<b>Course Objective(s)</b>					
<p>Subject1: The function of non-coding RNA in development and diseases will be examined.</p> <p>Subject2: Genome dynamics during embryogenesis will be monitored by new technique.</p> <p>Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.</p>					
<b>Lecture Style</b>					
Concept and techniques of systems biomedicine will be introduced in the seminar series.					
<b>Course Outline</b>					
<p>Goals/Outline:</p> <p>Mircoarray, Cell-based high throughput screening, etc, will be utilized as critical method for systems biomedicine.</p>					
<b>Grading System</b>					
Individual' s acquisition will be carefully evaluated by presentation, report and publication.					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
The attendee may have to utilize adenovirus and mice samples.					



<b>Lecture No</b>	041395				
<b>Subject title</b>	Laboratory practice of Systems BioMedicine			<b>Subject ID</b>	
<b>Instructors</b>	ASAHARA HIROSHI, CHIBA TOMOKI, MATSUSHIMA TAKAHIDE, KURIMOTO Ryouta]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Not determined yet.					
<b>Course Purpose and Outline</b>					
<p>This course covers systems biology, non-coding RNA and epigenetics in medical fields. Our recent accomplishment of a whole-mount in situ hybridization (WISH) database, termed EMBRYs, containing expression data of 1520 transcription factors and cofactors expressed in E9.5, E10.5, and E11.5 mouse embryos led us to identify critical cascade for myogenesis (Rp58; Dev Cell, 2009) and tendon development (Mkx, PNAS 2011). Also, our current study on non-coding RNA provides evidence that microRNA can act not only for cartilage development but also for its homeostasis against arthritis (Genes Dev, 2011). These findings and strategies will be shared in this course.</p>					
<b>Course Objective(s)</b>					
<p>Subject1: The function of non-coding RNA in development and diseases will be examined.</p> <p>Subject2: Genome dynamics during embryogenesis will be monitored by new technique.</p> <p>Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.</p>					
<b>Lecture Style</b>					
Concept and techniques of systems biomedicine will be introduced in the seminar series.					
<b>Course Outline</b>					
<p>Goals/Outline:</p> <p>Using our techniques, core molecular network for tissue development and inflammatory diseases will be examined.</p>					
<b>Grading System</b>					
Individual' s acquisition will be carefully evaluated by presentation, report and publication.					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
None					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
The attendee may have to utilize adenovirus and mice samples.					

<b>Lecture No</b>	041396				
<b>Subject title</b>	Lecture of Comprehensive Pathology			<b>Subject ID</b>	
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Department of Pathology, 15th floor, MD tower					
<b>Course Purpose and Outline</b>					
To learn the pathological methodology and research policy					
<b>Course Objective(s)</b>					
To explain the pathological/experimental methodology and research policy					
<b>Lecture Style</b>					
Education through meetings, conferences and seminars					
<b>Course Outline</b>					
Pathological/experimental methodology and research policy					
<b>Grading System</b>					
Interview and reports					
<b>Prerequisite Reading</b>					
Pre-reading of the references					
<b>TextBook</b>					
Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS					
<b>Relationship With Other Subjects</b>					
Related module: 包括病理学演習・包括病理学実習(theories of comprehensive pathology)					
<b>Important Course Requirements</b>					
Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.					
<b>Reference URL</b>					
<a href="http://www.tmd.ac.jp/med/pth2/index.html">http://www.tmd.ac.jp/med/pth2/index.html</a>					
<a href="https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html">https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html</a>					
<b>Email</b>					
masa.pth2@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AM.9:00-PM.5:00					

<b>Lecture No</b>	041397				
<b>Subject title</b>	Practice of Comprehensive Pathology	<b>Subject ID</b>			
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Department of Pathology, 15th floor, MD tower					
<b>Course Purpose and Outline</b>					
To understand the pathological/experimental methodology and research policy					
<b>Course Objective(s)</b>					
To explain the pathological/experimental methodology and research policy					
<b>Lecture Style</b>					
Education through meetings, conferences and seminars					
<b>Course Outline</b>					
Pathological methodology and research policy					
<b>Grading System</b>					
Interview and reports					
<b>Grading Rule</b>					
Interpretation of each step					
<b>Prerequisite Reading</b>					
Pre-reading of the references					
<b>TextBook</b>					
Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS					
<b>Relationship With Other Subjects</b>					
Related module: 包括病理学特論・包括病理学実習(theories of comprehensive pathology)					
<b>Important Course Requirements</b>					
Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.					
<b>Reference URL</b>					
<a href="http://www.tmd.ac.jp/med/pth2/index.html">http://www.tmd.ac.jp/med/pth2/index.html</a> <a href="https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html">https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html</a>					
<b>Email</b>					
masa.pth2@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
AM.9:00–PM.5:00					

<b>Lecture No</b>	041398				
<b>Subject title</b>	Laboratory practice of Comprehensive Pathology			<b>Subject ID</b>	
<b>Instructors</b>	KITAGAWA MASANOBU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<p>留学生在が履修登録した場合は英語で行う When an international student registers this subject for credits, this course is taught in English.</p>					
<b>Lecture place</b>	Department of Pathology, 15th floor, MD tower				
<b>Course Purpose and Outline</b>	To understand the pathological/experimental methodology and research policy				
<b>Course Objective(s)</b>	To explain the pathological/experimental methodology and research policy				
<b>Lecture Style</b>	Education through meetings, conferences, seminars and laboratory practice.				
<b>Course Outline</b>	Pathological methodology and research policy				
<b>Grading System</b>	Interview and reports				
<b>Grading Rule</b>	Interpretation of each step				
<b>Prerequisite Reading</b>	Pre-reading of the references				
<b>TextBook</b>	Robbins Basic Pathology, 10e (Robbins Pathology) Vinay Kumar MBBS MD FRCPATH, Abul K. Abbas MBBS				
<b>Relationship With Other Subjects</b>	Related module: 包括病理学特論・包括病理学演習(theories of comprehensive pathology)				
<b>Important Course Requirements</b>	Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.				
<b>Reference URL</b>	<a href="http://www.tmd.ac.jp/med/pth2/index.html">http://www.tmd.ac.jp/med/pth2/index.html</a> <a href="https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html">https://www.med.tmd.ac.jp/medicine/departments/comp_pathology.html</a>				
<b>Email</b>	masa.pth2@tmd.ac.jp				
<b>Instructor's Contact Information</b>	AM.9:00-PM.5:00				

<b>Lecture No</b>	041399				
<b>Subject title</b>	Lecture of Molecular Oncology			<b>Subject ID</b>	
<b>Instructors</b>	TANAKA SHINJI, AKIYAMA YOSHIMITSU, SHIMADA SHU, NIIBE Ayano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
M&D tower 18th floor					
<b>Course Purpose and Outline</b>					
To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients					
<b>Course Objective(s)</b>					
To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical application of cancer prevention, diagnosis and treatment					
<b>Lecture Style</b>					
Small group lesson					
<b>Course Outline</b>					
To understand the molecular mechanisms underlying carcinogenesis malignant progression for clinical application of cancer prevention, diagnosis and treatment.					
Available programs:					
Lecture: ad hoc					
Special Lecture: ad hoc					
Seminar/Journal Club: Every Thursday 16:00-17:00					
<b>Grading System</b>					
To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.					
<b>Prerequisite Reading</b>					
<b>Composition Unit</b>					
Professor Shinji TANAKA					
Associate Professor Yoshimitsu AKIYAMA					
Assistant Professor Shu SHIMADA, Ayano NIIBE					
<b>Reference Materials</b>					
Robert A. Weinberg: The biology of cancer. 2013, Garland Science.					
Related original papers					
<b>Important Course Requirements</b>					
N/A					
<b>Email</b>					
TANAKA SHINJI:tanaka.monc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TANAKA SHINJI:Please contact us in advance.					
Tel: 03-5803-5184					
Office: M&D タワー 18F S1859					

<b>Lecture No</b>	041400				
<b>Subject title</b>	Practice of Molecular Oncology	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA SHINJI, AKIYAMA YOSHIMITSU, SHIMADA SHU, NIIBE Ayano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D tower 18th floor					
<b>Course Purpose and Outline</b> To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients					
<b>Course Objective(s)</b> To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical application of cancer prevention, diagnosis and treatment					
<b>Lecture Style</b> Small group lesson					
<b>Course Outline</b> The students present their own research data and introduce important papers from newly-arrived journals, which will be thoroughly discussed  Available programs: Cancer Bioinformatics Conference: Every Monday 8:00–9:00 Cancer Clinical Conference: Every Wednesday 7:00–8:00					
<b>Grading System</b> To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.					
<b>Prerequisite Reading</b>					
<b>Composition Unit</b> Professor Shinji TANAKA Associate Professor Yoshimitsu AKIYAMA Assistant Professor Shu SHIMADA, Ayano NIIBE					
<b>Reference Materials</b> Robert A. Weinberg: The biology of cancer. 2013, Garland Science. Related original papers					
<b>Important Course Requirements</b> N/A					
<b>Email</b> TANAKA SHINJI:tanaka.monc@tmd.ac.jp					
<b>Instructor's Contact Information</b> TANAKA SHINJI:Please contact us in advance. Tel: 03-5803-5184 Office: M&D タワー 18F S1859					

<b>Lecture No</b>	041401				
<b>Subject title</b>	Laboratory practice of Molecular Oncology			<b>Subject ID</b>	
<b>Instructors</b>	TANAKA SHINJI, AKIYAMA YOSHIMITSU, SHIMADA SHU, NIIBE Ayano				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D tower 18th floor					
<b>Course Purpose and Outline</b> To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients					
<b>Course Objective(s)</b> To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical application of cancer prevention, diagnosis and treatment					
<b>Lecture Style</b> Small group lesson					
<b>Course Outline</b> To learn the basic scientific techniques necessary for pursuing cancer research  PCR, RNA analysis, Western blotting, cell culture, DNA transfection, genome-editing technology					
<b>Grading System</b> To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.					
<b>Prerequisite Reading</b>					
<b>Composition Unit</b> Professor Shinji TANAKA Associate Professor Yoshimitsu AKIYAMA Assistant Professor Shu SHIMADA, Ayano NIIBE					
<b>Reference Materials</b> Robert A. Weinberg: The biology of cancer. 2013, Garland Science. Related original papers					
<b>Important Course Requirements</b> N/A					
<b>Email</b> TANAKA SHINJI:tanaka.monc@tmd.ac.jp					
<b>Instructor's Contact Information</b> TANAKA SHINJI:Please contact us in advance. Tel: 03-5803-5184 Office: M&D タワー 18F S1859					

<b>Lecture No</b>	041402				
<b>Subject title</b>	Lecture of Surgical Pathology	<b>Subject ID</b>			
<b>Instructors</b>	AKASHI TAKUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
B-5 floor Division of Diagnostic Pathology					
<b>Course Purpose and Outline</b>					
The purpose of this programme is to acquire how to morphologically diagnose both neoplastic and non-neoplastic diseases. In addition, it is also very important to recognize the limitations and problems of morphological diagnosis and to learn the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Course Objective(s)</b>					
Diagnose both neoplastic and non-neoplastic diseases according to the guidelines. Acquire the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Lecture Style</b>					
Both practical and laboratory exercises are conducted by small members of students when a clinical specimen is available. Students should notify us what method(s) they wish to learn beforehand. We will contact them when the time comes.					
<b>Course Outline</b>					
Lecture					
The goal is to understand the definition, patho-physiology, classification, anatomical findings including immunohistochemistry, and differential diagnosis of the neoplastic and non-neoplastic diseases through the lectures and conference with clinicians.					
Practice					
The goal is to understand the practice of surgical pathology (how to diagnose a disease and prepare reports) and propose problems concerning to diagnosis and patho-physiology of the diseases.					
Lab					
The goal is to acquire the various methods including morphological and molecular biological technologies to carry out research. 1) Preparation of light microscopic specimens 2) Method of immunohistochemistry 3) Preparation and observation of electron microscopic specimens 4) FISH analysis of paraffin-embedded specimens					
<b>Grading System</b>					
The results are assessed according to the situation of participation to the lecture, practice, and lab (30point), the quality of the reports (50point), and presentation and publication of the research works (10point). The report is a part of the practice and should be prepared at the time of the practice with advice of the instructors.					
<b>Prerequisite Reading</b>					
Please refer to the following texts. It is also recommended to know which morphological methods is necessary for the research of the participant.					
<b>TextBook</b>					
大腸癌取扱い規約 = Japanese Classification of Colorectal, Appendiceal, and Anal Carcinoma / 大腸癌研究会 編, 大腸癌研究会, 金原出版, 2018					
胃癌取扱い規約 / 日本胃癌学会編, 日本胃癌学会, 金原出版, 2017					
WHO Classification of Tumours. Digestive System Tumours: IARC, 2019					
Surgical Pathology / Juan Rosai: Elsevier, 2013					
外科病理学 / 向井清, 真鍋俊明, 深山正久編集, 向井, 清(医学), 真鍋, 俊明, 深山, 正久, 文光堂, 2006					
<b>Important Course Requirements</b> The number of participants are not limited, however, two members are desirable in each practice and lab.					
<b>Email</b> akashi.path@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday-Friday, 9:00-17:00 B-5 floor Division of diagnostic pathology					



<b>Lecture No</b>	041403			<b>Subject ID</b>	
<b>Subject title</b>	Practice of Surgical Pathology				
<b>Instructors</b>	AKASHI TAKUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> B-5 floor Division of Diagnostic Pathology					
<b>Course Purpose and Outline</b> The purpose of this programme is to acquire how to morphologically diagnose both neoplastic and non-neoplastic diseases. In addition, it is also very important to recognize the limitations and problems of morphological diagnosis and to learn the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Course Objective(s)</b> Diagnose both neoplastic and non-neoplastic diseases according to the guidelines. Acquire the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Lecture Style</b> Both practical and laboratory exercises are conducted by small members of students when a clinical specimen is available. Students should notify us what method(s) they wish to learn beforehand. We will contact them when the time comes.					
<b>Course Outline</b> Lecture The goal is to understand the definition, patho-physiology, classification, anatomical findings including immunohistochemistry, and differential diagnosis of the neoplastic and non-neoplastic diseases through the lectures and conference with clinicians. Practice The goal is to understand the practice of surgical pathology (how to diagnose a disease and prepare reports) and propose problems concerning to diagnosis and patho-physiology of the diseases. Lab The goal is to acquire the various methods including morphological and molecular biological technologies to carry out research. 1) Preparation of light microscopic specimens 2) Method of immunohistochemistry 3) Preparation and observation of electron microscopic specimens 4) FISH analysis of paraffin-embedded specimens					
<b>Grading System</b> The results are assessed according to the situation of participation to the lecture, practice, and lab (30point), the quality of the reports (50point), and presentation and publication of the research works (10point). The report is a part of the practice and should be prepared at the time of the practice with advice of the instructors.					
<b>Prerequisite Reading</b> Please refer to the following texts. It is also recommended to know which morphological methods is necessary for the research of the participant.					
<b>TextBook</b> 大腸癌取扱い規約 = Japanese Classification of Colorectal, Appendiceal, and Anal Carcinoma / 大腸癌研究会 編, 大腸癌研究会, 金原出版, 2018 胃癌取扱い規約 / 日本胃癌学会編, 日本胃癌学会, 金原出版, 2017 WHO Classification of Tumours. Digestive System Tumours: IARC, 2019 Surgical Pathology / Juan Rosai: Elsevier, 2013 外科病理学 / 向井清, 真鍋俊明, 深山正久編集, 向井, 清(医学), 真鍋, 俊明, 深山, 正久, 文光堂, 2006					
<b>Important Course Requirements</b> The number of participants are not limited, however, two members are desirable in each practice and lab.					
<b>Email</b> akashi.path@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday-Friday, 9:00-17:00 B-5 floor Division of diagnostic pathology					

<b>Lecture No</b>	041404				
<b>Subject title</b>	Laboratory practice of Surgical Pathology			<b>Subject ID</b>	
<b>Instructors</b>	AKASHI TAKUMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> B-5 floor Division of Diagnostic Pathology					
<b>Course Purpose and Outline</b> The purpose of this programme is to acquire how to morphologically diagnose both neoplastic and non-neoplastic diseases. In addition, it is also very important to recognize the limitations and problems of morphological diagnosis and to learn the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Course Objective(s)</b> Diagnose both neoplastic and non-neoplastic diseases according to the guidelines. Acquire the morphological and molecular methods which are necessary for the resolution of the problems.					
<b>Lecture Style</b> Both practical and laboratory exercises are conducted by small members of students when a clinical specimen is available. Students should notify us what method(s) they wish to learn beforehand. We will contact them when the time comes.					
<b>Course Outline</b> Lecture The goal is to understand the definition, patho-physiology, classification, anatomical findings including immunohistochemistry, and differential diagnosis of the neoplastic and non-neoplastic diseases through the lectures and conference with clinicians. Practice The goal is to understand the practice of surgical pathology (how to diagnose a disease and prepare reports) and propose problems concerning to diagnosis and patho-physiology of the diseases. Lab The goal is to acquire the various methods including morphological and molecular biological technologies to carry out research. 1) Preparation of light microscopic specimens 2) Method of immunohistochemistry 3) Preparation and observation of electron microscopic specimens 4) FISH analysis of paraffin-embedded specimens					
<b>Grading System</b> The results are assessed according to the situation of participation to the lecture, practice, and lab (30point), the quality of the reports (50point), and presentation and publication of the research works (10point). The report is a part of the practice and should be prepared at the time of the practice with advice of the instructors.					
<b>Prerequisite Reading</b> Please refer to the following texts. It is also recommended to know which morphological methods is necessary for the research of the participant.					
<b>TextBook</b> 大腸癌取扱い規約 = Japanese Classification of Colorectal, Appendiceal, and Anal Carcinoma / 大腸癌研究会 編, 大腸癌研究会, 金原出版, 2018 胃癌取扱い規約 / 日本胃癌学会編, 日本胃癌学会, 金原出版, 2017 WHO Classification of Tumours. Digestive System Tumours: IARC, 2019 Surgical Pathology / Juan Rosai: Elsevier, 2013 外科病理学 / 向井清, 真鍋俊明, 深山正久編集, 向井, 清(医学), 真鍋, 俊明, 深山, 正久, 文光堂, 2006					
<b>Important Course Requirements</b> The number of participants are not limited, however, two members are desirable in each practice and lab.					
<b>Email</b> akashi.path@tmd.ac.jp					
<b>Instructor's Contact Information</b> Monday-Friday, 9:00-17:00 B-5 floor Division of diagnostic pathology					

<b>Lecture No</b>	041405				
<b>Subject title</b>	Lecture of Experimental Animal Model for Human Disease	<b>Subject ID</b>			
<b>Instructors</b>	KANAI MASAMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b>					
Aim of this course is to comprehensively understand the research fields using disease model animals. The instructor will give introductory lectures about planning of experiments using experimental animals and methods of analyses based on anatomy, molecular biology and genetics.					
<b>Course Objective(s)</b>					
Course objectives are to understand mechanisms of pathogenesis in disease model animals created by gene mutations and to learn basic skills for experimental animal research.					
<b>Lecture Style</b>					
Lecture, group discussion and experiments					
<b>Course Outline</b>					
Goals/outline: Translational research, the bridge of bench to bedside, requires experiments not only with stem cells such as ES cells and iPS cells but also with experimental animals. Our goal is to understand the research activities includes the analysis of morphology and genetics with disease model animal, especially focusing on embryonic development in a comprehensive and systematic fashion.					
<b>Grading System</b>					
Attendance rate and presentation Class Participation/Contribution 70% Presentation :30%					
<b>Prerequisite Reading</b>					
Understanding the basic biology and the developmental biology					
<b>Reference Materials</b>					
"The Developing Human", 10th edition (Moore & Persaud & Torchia). "HISTOLOGY, a text and atlas", 6th edition (Ross & Pawlina) "Principles of Development", 4th edition (Wolpert) "The Guide to Investigation of Mouse Pregnancy" (Croy et al.)					
<b>Important Course Requirements</b>					
NA.					
<b>Note(s) to Students</b>					
Nothing special					
<b>Email</b>					
mkanarc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Wed every week; 13:00-14:00 7th bld 10th floor					

<b>Lecture No</b>	041406				
<b>Subject title</b>	Practice of Experimental Animal Model for Human Disease	<b>Subject ID</b>			
<b>Instructors</b>	KANAI MASAMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b>					
Aim of this course is to comprehensively understand the research fields using disease model animals. The instructor will give introductory lectures about planning of experiments using experimental animals and methods of analyses based on anatomy, molecular biology and genetics.					
<b>Course Objective(s)</b>					
Course objectives are to understand mechanisms of pathogenesis in disease model animals created by gene mutations and to learn basic skills for experimental animal research.					
<b>Lecture Style</b>					
Lecture, group discussion and experiments					
<b>Course Outline</b>					
Goals/Outline: The purpose of our Practice is to learn how to plan experiments, how to analyze and interpret scientific results. In journal club, students will develop skills in reading, presenting and reviewing a research paper that has a high impact and quality in a life science field. For own research, students will weekly discuss about results and future plans in a progress report session. Students also will present their research summary every half-year as a practice for oral talk in a conference.					
<b>Grading System</b>					
Attendance rate and presentation Class Participation/Contribution 70% Presentation :30%					
<b>Prerequisite Reading</b>					
Understanding the basic biology and the developmental biology					
<b>Reference Materials</b>					
"The Developing Human", 10th edition (Moore & Persaud & Torchia). "HISTOLOGY, a text and atlas", 6th edition (Ross & Pawlina) "Principles of Development", 4th edition (Wolpert) "The Guide to Investigation of Mouse Pregnancy" (Croy et al.)					
<b>Important Course Requirements</b>					
NA.					
<b>Note(s) to Students</b>					
Nothing special					
<b>Email</b>					
mkanarc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Wed every week; 13:00–14:00 7th bld 10th floor					

<b>Lecture No</b>	041407				
<b>Subject title</b>	Laboratory practice of Experimental Animal Model for Human Disease	<b>Subject ID</b>			
<b>Instructors</b>	KANAI MASAMI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Please contact the instructor in charge before the course.					
<b>Course Purpose and Outline</b>					
Aim of this course is to comprehensively understand the research fields using disease model animals. The instructor will give introductory lectures about planning of experiments using experimental animals and methods of analyses based on anatomy, molecular biology and genetics.					
<b>Course Objective(s)</b>					
Course objectives are to understand mechanisms of pathogenesis in disease model animals created by gene mutations and to learn basic skills for experimental animal research.					
<b>Lecture Style</b>					
Lecture, group discussion and experiments					
<b>Course Outline</b>					
Our lab provide an opportunity to learn the developmental biology through the analyses of mutant cell lines and mice as an animal models for human diseases. We analyze mice showing abnormality in the neonatal hepatitis and causal components, angiogenesis (generation of new vessels) and folliculogenesis (oocyte and follicle development in ovary), by using the variety of methods such as morphology, developmental biology, biochemistry and molecular biology. Students acquire those basic experimental skills with cell lines and animal, and find and study their own theme. We encourage and support students to make an entire experiment plan to reach the understanding molecular/cellular mechanism revealing individual development and disease.					
1) Molecular biological analysis of organ formation using knockout mice and knockout ES cells.					
2) Application of Sox17 mutant mice as the animal model for human disease.					
3) Analysis of molecular mechanisms using mice with implantaion defects.					
4) Analysis of folliculogenesis using disease-model mouse for premature ovarian failure					
<b>Grading System</b>					
Attendance rate and presentation					
Class Participation/Contribution 70%					
Presentation :30%					
<b>Prerequisite Reading</b>					
Understanding the basic biology and the developmental biology					
<b>Reference Materials</b>					
"The Developing Human", 10th edition (Moore & Persaud & Torchia).					
"HISTOLOGY, a text and atlas", 6th edition (Ross & Pawlina)					
"Principles of Development", 4th edition (Wolpert)					
"The Guide to Investigation of Mouse Pregnancy" (Croy et al.)					
<b>Important Course Requirements</b>					
NA.					
<b>Note(s) to Students</b>					
Nothing special					
<b>Email</b> mkanarc@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Wed every week; 13:00–14:00 7th bld 10th floor					

<b>Lecture No</b>	041408				
<b>Subject title</b>	Lecture of Signal Gene Regulation			<b>Subject ID</b>	
<b>Instructors</b>	FUNATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Seminar Room, 2F, Building 8 South					
<b>Course Purpose and Outline</b>					
This course describes the fundamentals of development and molecular biology. This course also provides lectures for bioinformatics to proceed with the project.					
Topics include molecular genetics, cell proliferation, cell differentiation, transcription factors, and gene-engineered mice. Students will understand the biochemical experiments by attending the special seminars.					
<b>Course Objective(s)</b>					
Students will learn the basics in life sciences by understanding the regulation of signal transduction involved in cell proliferation, differentiation, and gene expression.					
<b>Lecture Style</b>					
Participatory classes, in small groups.					
<b>Course Outline</b>					
Students will understand the fundamentals of development, molecular biology, and biochemical experiments. This course also provides lectures for bioinformatics to proceed with the project.					
<b>Grading System</b>					
Comprehensive evaluation : Participation (80%) and discussion (20%).					
<b>Prerequisite Reading</b>					
You are recommended to improve your knowledge in molecular, developmental, and bone biology.					
<b>Reference Materials</b>					
None.					
<b>Important Course Requirements</b>					
None.					
<b>Note(s) to Students</b>					
None.					
<b>Email</b>					
nfunato.gene@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
M/W/F 10:00 AM-12:00 PM or by appointment					
Faculty Office, 4F, Building 8 South					

<b>Lecture No</b>	041409				
<b>Subject title</b>	Practice of Signal Gene Regulation	<b>Subject ID</b>			
<b>Instructors</b>	FUNATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Seminar Room, 2F, Building 8 South.					
<b>Course Purpose and Outline</b> This course describes the fundamentals of development and molecular biology. This course also provides lectures for bioinformatics to proceed with the project.  Topics include molecular genetics, cell proliferation, cell differentiation, transcription factors, and gene-engineered mice. Students will understand the biochemical experiments by attending the special seminars.					
<b>Course Objective(s)</b> Students will learn the basics in life sciences by understanding the regulation of signal transduction involved in cell proliferation, differentiation, and gene expression.					
<b>Lecture Style</b> Participatory classes, in small groups.					
<b>Course Outline</b> Students will learn to handle recombinant DNA molecules and analyze the data obtained from experiments.					
<b>Grading System</b> Comprehensive evaluation : Participation (80%) and discussion (20%).					
<b>Prerequisite Reading</b> You are recommended to improve your knowledge in molecular, developmental, and bone biology.					
<b>Reference Materials</b> None.					
<b>Important Course Requirements</b> None.					
<b>Note(s) to Students</b> None.					
<b>Email</b> nfunato.gene@tmd.ac.jp					
<b>Instructor's Contact Information</b> M/W/F 10:00 AM–12:00 PM or by appointment Faculty Office, 4F, Building 8 South					

<b>Lecture No</b>	041410				
<b>Subject title</b>	Laboratory practice of Signal Gene Regulation	<b>Subject ID</b>			
<b>Instructors</b>	FUNATO NORIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> Lab, 4F, Building 8 South					
<b>Course Purpose and Outline</b> Students will learn the fundamentals of development and molecular biology. Topics include molecular genetics, cell proliferation, cell differentiation, transcription factors, and gene-engineered mice.					
<b>Course Objective(s)</b> Students will learn the craniofacial development by understanding the regulation of signal transduction and gene expression.					
<b>Lecture Style</b> Participatory classes, in small groups.					
<b>Course Outline</b> Students will learn to handle recombinant DNA molecules and analyze the data obtained from experiments. This course also provides lectures for bioinformatics to proceed with the project.					
<b>Grading System</b> Comprehensive evaluation: Presentation and report (80%), and scientific activity (own research, seminar, meeting, etc.) (20%).					
<b>Prerequisite Reading</b> You are recommended to improve your knowledge in molecular, developmental, and bone biology.					
<b>Reference Materials</b> None.					
<b>Important Course Requirements</b> None.					
<b>Note(s) to Students</b> None.					
<b>Email</b> nfunato.gene@tmd.ac.jp					
<b>Instructor's Contact Information</b> M/W/F 10:00 AM–12:00 PM or by appointment Faculty Office, 4F, Building 8 South					



<b>Lecture No</b>	041411				
<b>Subject title</b>	Lecture of Biomedical Devices and Instrumentation			<b>Subject ID</b>	
<b>Instructors</b>	MITSUBAYASHI KOJI, ARAKAWA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Dept. of Biomedical devices and instrumentation (Institute of Biomaterials and Bioengineering, 5th floor, BLDG 21) Conference room 2 and 3 (Institute of Biomaterials and Bioengineering, BLDG 22- 1F and 8F)					
<b>Course Purpose and Outline</b>					
In advanced medicine, technologies enabling to accurately measure biological information are highly demanded. The development of "human-friendly" non-invasive measurement methods could release patients from the pain and the risks of sampling. The students will learn the basic knowledge and skills of biological information measurement through the lectures, seminars and practical training. Especially research including biochemical measurement, the development of biosensing devices and their applications to medicine will be carried out based on "sensor and biomedical engineering"					
<b>Course Objective(s)</b>					
The students will learn the basic technology related to advanced medicine and biological information measurement. Through practical training, they will also engage in research activities for biochemical measurement, the development of biosensing devices and their applications to medicine based on "sensor and biomedical engineering". The objective of this course is to help the students be able to think about and conduct a research by themselves throughout the activities with academic researches.					
<b>Lecture Style</b>					
This course is taught in an on-the-job training style. You will attend a research project on advanced biomonitoring under the direction of the research staffs.					
<b>Course Outline</b>					
Goals/outline: The lecture is designed to provide a basic understanding of both biosensing devices and bioinstrumentation for advanced medicine. You will learn principles, methods and applications of advanced biomonitoring techniques in detail.					
<b>Grading System</b>					
The overall grading scheme is based on your participation and the final project.					
<b>Prerequisite Reading</b>					
Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training					
<b>Reference Materials</b>					
Cavitas Sensors: Contact Lens Type Sensors & Mouthguard Sensors, Electroanalysis, 28, 6, 1170-1187, 2016. Chemical Sensors and Biosensors: Fundamentals and Applications, F.G. Banica, Wiley, ISBN-13: 978-0470710678 Biosensors: Essentials, G. Evtugyn, Springer, ISBN-13: 978-3642402401					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.					
<b>Email</b>					
MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21					

<b>Lecture No</b>	041412				
<b>Subject title</b>	Practice of Biomedical Devices and Instrumentation	<b>Subject ID</b>			
<b>Instructors</b>	MITSUBAYASHI KOJI, ARAKAWA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Dept. of Biomedical devices and instrumentation (Institute of Biomaterials and Bioengineering, 5th floor, BLDG 21) Conference room 2 and 3 (Institute of Biomaterials and Bioengineering, BLDG 22- 1F and 8F)					
<b>Course Purpose and Outline</b>					
In advanced medicine, technologies enabling to accurately measure biological information are highly demanded. The development of “human-friendly” non-invasive measurement methods could release patients from the pain and the risks of sampling. The students will learn the basic knowledge and skills of biological information measurement through the lectures, seminars and practical training. Especially research including biochemical measurement, the development of biosensing devices and their applications to medicine will be carried out based on “sensor and biomedical engineering”					
<b>Course Objective(s)</b>					
The students will learn the basic technology related to advanced medicine and biological information measurement. Through practical training, they will also engage in research activities for biochemical measurement, the development of biosensing devices and their applications to medicine based on “sensor and biomedical engineering”. The objective of this course is to help the students be able to think about and conduct a research by themselves throughout the activities with academic researches.					
<b>Lecture Style</b>					
This course is taught in an on-the-job training style. You will attend a research project on advanced biomonitoring under the direction of the research staffs.					
<b>Course Outline</b>					
Goals/Outline: This session is conducted in presentation, discussion and recitation format. You will learn actual device development and scientific method of solving problem with guidance by biosensors / bioinstrumentation experts.					
<b>Grading System</b>					
The overall grading scheme is based on your participation and the final project.					
<b>Prerequisite Reading</b>					
Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training					
<b>Reference Materials</b>					
Cavitas Sensors: Contact Lens Type Sensors & Mouthguard Sensors, Electroanalysis, 28, 6, 1170–1187, 2016. Chemical Sensors and Biosensors: Fundamentals and Applications, F.G. Banica, Wiley, ISBN–13: 978–0470710678 Biosensors: Essentials, G. Evtugyn, Springer, ISBN–13: 978–3642402401					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.					
<b>Email</b>					
MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21					

<b>Lecture No</b>	041413				
<b>Subject title</b>	Laboratory practice of Biomedical Devices and Instrumentation	<b>Subject ID</b>			
<b>Instructors</b>	MITSUBAYASHI KOJI, ARAKAWA TAKAHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Dept. of Biomedical devices and instrumentation (Institute of Biomaterials and Bioengineering, 5th floor, BLDG 21) Conference room 2 and 3 (Institute of Biomaterials and Bioengineering, BLDG 22- 1F and 8F)					
<b>Course Purpose and Outline</b>					
In advanced medicine, technologies enabling to accurately measure biological information are highly demanded. The development of “human-friendly” non-invasive measurement methods could release patients from the pain and the risks of sampling. The students will learn the basic knowledge and skills of biological information measurement through the lectures, seminars and practical training. Especially research including biochemical measurement, the development of biosensing devices and their applications to medicine will be carried out based on “sensor and biomedical engineering”					
<b>Course Objective(s)</b>					
The students will learn the basic technology related to advanced medicine and biological information measurement. Through practical training, they will also engage in research activities for biochemical measurement, the development of biosensing devices and their applications to medicine based on “sensor and biomedical engineering”. The objective of this course is to help the students be able to think about and conduct a research by themselves throughout the activities with academic researches.					
<b>Lecture Style</b>					
This course is taught in an on-the-job training style. You will attend a research project on advanced biomonitoring under the direction of the research staffs.					
<b>Course Outline</b>					
Goals/Outline: We will start with some training sessions (research planning equipment operation, data processing) and then you join one of the research projects on biomedical devices and medical applications.					
<b>Grading System</b>					
The overall grading scheme is based on your participation and the final project.					
<b>Prerequisite Reading</b>					
Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training					
<b>Reference Materials</b>					
Cavitas Sensors: Contact Lens Type Sensors & Mouthguard Sensors, Electroanalysis, 28, 6, 1170–1187, 2016. Chemical Sensors and Biosensors: Fundamentals and Applications, F.G. Banica, Wiley, ISBN–13: 978–0470710678 Biosensors: Essentials, G. Evtugyn, Springer, ISBN–13: 978–3642402401					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.					
<b>Email</b>					
MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21					

<b>Lecture No</b>	041414				
<b>Subject title</b>	Lecture of Material Biofunctions			<b>Subject ID</b>	
<b>Instructors</b>	ITAKA Keiji, MATSUMOTO Masahito, FUKUSHIMA Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Department of Biofunction Research, Institute of Biomaterials and Bioengineering <a href="http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html">http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html</a>					
<b>Course Purpose and Outline</b>					
The purpose of this course is to study biomaterials for medical system innovation, including for drug delivery system (DDS), gene therapy, nucleic acid medicine, and tissue engineering. The strategy for their clinical application is also the subject of this course.					
<b>Course Objective(s)</b>					
To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.					
<b>Lecture Style</b>					
Small group					
<b>Course Outline</b>					
Goals/outline: The objective and principle of the department of Material Biofunctions is to educate students with materials knowledge demanded to medical and dental doctors who are leading medical professionals and bioscientists who are capable of carrying out their own research at an international level in the area of their special fields of science, respectively. Main objective in this graduate course is to provide students opportunity to study the reaction mechanism between materials and living tissues. Students are also taught on investigation of development of new surface modification processes of biomaterials to acquire tissue-affinity.					
<b>Grading System</b>					
Assessment on the final examination or report					
<b>Prerequisite Reading</b>					
Please contact us					
<b>Reference Materials</b>					
Please contact us					
<b>Important Course Requirements</b>					
n.p.					
<b>Note(s) to Students</b>					
Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.					
<b>Email</b>					
ITAKA Keiji:itaka.bif@tmd.ac.jp					

<b>Lecture No</b>	041415				
<b>Subject title</b>	Practice of Material Biofunctions	<b>Subject ID</b>			
<b>Instructors</b>	ITAKA Keiji, MATSUMOTO Masahito, FUKUSHIMA Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Department of Biofunction Research, Institute of Biomaterials and Bioengineering <a href="http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html">http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html</a>					
<b>Course Purpose and Outline</b>					
The purpose of this course is to study biomaterials for medical system innovation, including for drug delivery system (DDS), gene therapy, nucleic acid medicine, and tissue engineering. The strategy for their clinical application is also the subject of this course.					
<b>Course Objective(s)</b>					
To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.					
<b>Lecture Style</b>					
Small group					
<b>Course Outline</b>					
Goals/Outline: To learn basic science of biomaterials, and related fields of medicine, biology and pharmaceutical science. High-qualified speciality and broad perspective over the interdisciplinary research fields are equally important.					
<b>Grading System</b>					
Assessment on the final examination or report					
<b>Prerequisite Reading</b>					
Please contact us					
<b>Reference Materials</b>					
Please contact us					
<b>Important Course Requirements</b>					
n.p.					
<b>Note(s) to Students</b>					
Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.					
<b>Email</b>					
ITAKA Keiji:itaka.bif@tmd.ac.jp					

<b>Lecture No</b>	041416				
<b>Subject title</b>	Laboratory practice of Material Biofunctions			<b>Subject ID</b>	
<b>Instructors</b>	ITAKA Keiji, MATSUMOTO Masahito, FUKUSHIMA Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Department of Biofunction Research, Institute of Biomaterials and Bioengineering <a href="http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html">http://www.tmd.ac.jp/~mde/www/biofunctions/biofunctions-e.html</a>					
<b>Course Purpose and Outline</b>					
The purpose of this course is to study biomaterials for medical system innovation, including for drug delivery system (DDS), gene therapy, nucleic acid medicine, and tissue engineering. The strategy for their clinical application is also the subject of this course.					
<b>Course Objective(s)</b>					
To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.					
<b>Lecture Style</b>					
Small group					
<b>Course Outline</b>					
Goals/Outline: To learn basic science of biomaterials, and related fields of medicine, biology and pharmaceutical science. High-qualified speciality and broad perspective over the interdisciplinary research fields are equally important.					
<b>Grading System</b>					
Assessment on the final examination or report					
<b>Prerequisite Reading</b>					
Please contact us					
<b>Reference Materials</b>					
Please contact us					
<b>Important Course Requirements</b>					
n.p.					
<b>Note(s) to Students</b>					
Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.					
<b>Email</b>					
ITAKA Keiji:itaka.bif@tmd.ac.jp					

<b>Lecture No</b>	041420				
<b>Subject title</b>	Lecture of Applied Gene Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIKI YOSHIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Confirm it to the instructor before attending a lecture because it differs by the program.					
<b>Course Purpose and Outline</b> The purpose of this course is to understand basic molecular mechanisms from cancer development to invasion and metastasis so that you may apply the knowledge for future developments of novel diagnosis and treatment. Studying the current cancer research including oncogene/tumor suppressor gene, cancer stem cell and cancer microenvironment network, you will learn life science and a variety of cellular functions.					
<b>Course Objective(s)</b> To understand the latest findings in cancer research from cancer development to invasion and metastasis. To devise a research subject, which is translational to clinical use, and design appropriate experiment plan and future plan based on your objective judgment on progress of your study.					
<b>Lecture Style</b> Lecture in a group of a few people. To urge the student's lively participation, a lot of opportunities for questions and debatings are set as much as possible.					
<b>Course Outline</b> Goals/outline: Cancer is a genetic disease and the study of not only a sporadic tumor but also a hereditary tumor has contributed to the understanding of carcinogenic mechanism greatly. Carcinogenesis is a multistep process in which cells accumulate multiple genetic alterations as they progress to a more malignant phenotype. We lecture on molecular mechanism of the carcinogenesis and diversity of the cancer based on these points of view.					
<b>Grading System</b> We evaluate overall based on the participation situation and the research content to the lecture, the practice, and the experiment.					
<b>Prerequisite Reading</b> You are required to search and read through scientific papers relevant to your research or ones selected by the instructor.					
<b>Reference Materials</b> Robert A. Weinberg, The Biology of Cancer, Garland Science (English/Japanese) Bruce Alberts et al., Molecular Biology of the Cell, Garland Science (English/Japanese)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Welcome the students interested in cancer research and the carcinogenic mechanism. Please contact the instructor.					
<b>Reference URL</b> <a href="http://www.tmd.ac.jp/english/mgen/index.html">http://www.tmd.ac.jp/english/mgen/index.html</a>					
<b>Email</b> miki.mgen@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> Every Monday PM2:00-PM5:00, Professor's office, Dept. of Molecular Genetics, M&D Tower 23rd floor					

<b>Lecture No</b>	041421				
<b>Subject title</b>	Practice of Applied Gene Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIKI YOSHIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Confirm it to the instructor before attending a lecture because it differs by the program.					
<b>Course Purpose and Outline</b>					
The purpose of this course is to understand basic molecular mechanisms from cancer development to invasion and metastasis so that you may apply the knowledge for future developments of novel diagnosis and treatment. Studying the current cancer research including oncogene/tumor suppressor gene, cancer stem cell and cancer microenvironment network, you will learn life science and a variety of cellular functions.					
<b>Course Objective(s)</b>					
To understand the latest findings in cancer research from cancer development to invasion and metastasis.					
To devise a research subject, which is translational to clinical use, and design appropriate experiment plan and future plan based on your objective judgment on progress of your study.					
<b>Lecture Style</b>					
Lecture in a group of a few people. To urge the student's lively participation, a lot of opportunities for questions and debatings are set as much as possible.					
<b>Course Outline</b>					
Goals/Outline: Aiming to acquire fundamental knowledge and basic skills, such as molecular biology, histochemistry, microbiology, and molecular medicine in order to accomplish the above-mentioned purpose,					
<b>Grading System</b>					
We evaluate overall based on the participation situation and the research content to the lecture, the practice, and the experiment.					
<b>Prerequisite Reading</b>					
You are required to search and read through scientific papers relevant to your research or ones selected by the instructor.					
<b>Reference Materials</b>					
Robert A. Weinberg, The Biology of Cancer, Garland Science (English/Japanese)					
Bruce Alberts et al., Molecular Biology of the Cell, Garland Science (English/Japanese)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
Welcome the students interested in cancer research and the carcinogenic mechanism. Please contact the instructor.					
<b>Email</b>					
miki.mgen@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Every Monday PM2:00-PM5:00, Professor's office, Dept. of Molecular Genetics, M&D Tower 23rd floor					



<b>Lecture No</b>	041422				
<b>Subject title</b>	Laboratory practice of Applied Gene Medicine	<b>Subject ID</b>			
<b>Instructors</b>	MIKI YOSHIO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> Confirm it to the instructor before attending a lecture because it differs by the program.					
<b>Course Purpose and Outline</b> The purpose of this course is to understand basic molecular mechanisms from cancer development to invasion and metastasis so that you may apply the knowledge for future developments of novel diagnosis and treatment. Studying the current cancer research including oncogene/tumor suppressor gene, cancer stem cell and cancer microenvironment network, you will learn life science and a variety of cellular functions.					
<b>Course Objective(s)</b> To understand the latest findings in cancer research from cancer development to invasion and metastasis. To devise a research subject, which is translational to clinical use, and design appropriate experiment plan and future plan based on your objective judgment on progress of your study.					
<b>Lecture Style</b> Lecture in a group of a few people. To urge the student's lively participation, a lot of opportunities for questions and debatings are set as much as possible.					
<b>Course Outline</b> Goals/Outline: Searching for the genes which mutate in process of carcinogenesis. DNA and RNA are extracted from human clinical samples, and the changes on the primary structure of genes and transcripts are screened. Based on the information, carcinogenic mechanism is examined.					
<b>Grading System</b> We evaluate overall based on the participation situation and the research content to the lecture, the practice, and the experiment.					
<b>Prerequisite Reading</b> You are required to search and read through scientific papers relevant to your research or ones selected by the instructor.					
<b>Reference Materials</b> Robert A. Weinberg, The Biology of Cancer, Garland Science (English/Japanese) Bruce Alberts et al., Molecular Biology of the Cell, Garland Science (English/Japanese)					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> Welcome the students interested in cancer research and the carcinogenic mechanism. Please contact the instructor.					
<b>Email</b> miki.mgen@mri.tmd.ac.jp					
<b>Instructor's Contact Information</b> Every Monday PM2:00–PM5:00, Professor's office, Dept. of Molecular Genetics, M&D Tower 23rd floor					

<b>Lecture No</b>	041423				
<b>Subject title</b>	Lecture of Molecular Cytogenetics	<b>Subject ID</b>			
<b>Instructors</b>	INAZAWA JIYOJI, INOUE JUN, GENN Yasuyuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
A lecture room is different in a program, so check it for staff beforehand.					
<b>Course Purpose and Outline</b>					
The human genome sequence has been unraveled by The Human Genome Project in 2003. Consequently, personalized medicine (PM) has become reality based on the personal genomic information. It is essential to have the enough knowledge of medical genomics and epigenomics not only for the development of medical and dental sciences and technology but also for the clinical implementation of PM. This lecture instructs the basic knowledge and advanced technics to understand the molecular basis underlying cancer and genetic diseases.					
<b>Course Objective(s)</b>					
The acquirement of knowledge of basic and leading-edge medical genomics and bioethics. The understanding of pathogenic mechanism, diagnosis, cure and prevention in genomic and epigenomic disorders.					
<b>Lecture Style</b>					
Individual guidance in principle.					
<b>Course Outline</b>					
Goals/outline: The principal aim of Department of Molecular Cytogenetics (MCG) is to understand the molecular mechanism underlying cancer and genetic diseases including congenital disorders. Our research interests are as follows; (1) Identification of novel genes including microRNAs responsible for cancer and the clinical development of miRNA-targeting therapeutics in cancer. (2) Understanding the pathogenesis of intractable cancers and genetic disorders based on the integrative omics including systems biology. (3) Establishment of diagnostic devices for the implementation of personalized medicine in cancer and genetic disorders. A series of the relevant lectures is offered on every monday, 9:00 am -11:00 am.					
<b>Grading System</b>					
Evaluated based on the following points; 1) Attitude for study, i.e. the independence of mind. (40%), 2) Progress situation in own research and record of attendance at weekly seminar and the meeting for research in progress. (40%) 3) Presentation of progress and results of own research and introduction of journal articles in seminar. (20%)					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
1. Cancer: Principles & Practice of Oncology: Primer of the Molecular Biology of Cancer. DeVita, Vincent T., Jr., Theodore S. Lawrence. Walters Kluwer 2nd Ed. 2015. 2. Human Molecular Genetics. Strachan T.& Read AP. CRC Press 5th Ed. 2018 3. The Language of Life: DNA and the Revolution in Personalized Medicine. Francis S. Collins. Harper Publisher 2010. 4. Thompson&Thompson Genetics in Medicine, 8th Edition. Nussbaum R et al. Saunders.2015					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b>					
No limited about the number of applicants.					
<b>Email</b> INAZAWA JIYOJI: johinaz.cgen@mri.tmd.ac.jp M & D • 23F					
<b>Instructor's Contact Information</b>					
INAZAWA JIYOJI: AM.9:00-10:30, Monday, at MRI seminar room, M&D Tower 23F					

<b>Lecture No</b>	041424				
<b>Subject title</b>	Practice of Molecular Cytogenetics	<b>Subject ID</b>			
<b>Instructors</b>	INAZAWA JIYOJI, INOUE JUN, GENN Yasuyuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English					
<b>Lecture place</b>					
A lecture room is different in a program, so check it for staff beforehand.					
<b>Course Purpose and Outline</b>					
The human genome sequence has been unraveled by The Human Genome Project in 2003. Consequently, personalized medicine (PM) has become reality based on the personal genomic information. It is essential to have the enough knowledge of medical genomics and epigenomics not only for the development of medical and dental sciences and technology but also for the clinical implementation of PM. This lecture instructs the basic knowledge and advanced technics to understand the molecular basis underlying cancer and genetic diseases.					
<b>Course Objective(s)</b>					
The acquirement of knowledge of basic and leading-edge medical genomics and bioethics. The understanding of pathogenic mechanism, diagnosis, cure and prevention in genomic and epigenomic disorders.					
<b>Lecture Style</b>					
Individual guidance in principle.					
<b>Course Outline</b>					
Goals/Outline: The main purposes of our practice are understanding and acquisition about various technologies of genomic/epigenomic analysis, functional analysis, cell biological analysis and biochemical analysis in the scientific research for cancer and genomic disorders.					
<b>Grading System</b>					
Evaluated based on the following points; 1) Attitude for study, i.e. the independence of mind. (40%), 2) Progress situation in own research and record of attendance at weekly seminar and the meeting for research in progress. (40%) 3) Presentation of progress and results of own research and introduction of journal articles in seminar. (20%)					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
1. Cancer: Principles & Practice of Oncology: Primer of the Molecular Biology of Cancer. DeVita, Vincent T., Jr., Theodore S. Lawrence. Walters Kluwer 2nd Ed. 2015. 2. Human Molecular Genetics. Strachan T.& Read AP. CRC Press 5th Ed. 2018 3. The Language of Life: DNA and the Revolution in Personalized Medicine. Francis S. Collins. Harper Publisher 2010. 4. Thompson&Thompson Genetics in Medicine, 8th Edition. Nussbaum R et al. Saunders.2015					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
No limitation about the number of applicants.					
<b>Email</b>					
INAZAWA JIYOJI: johinaz.cgen@mri.tmd.ac.jp M&D・23F					
<b>Instructor's Contact Information</b>					
INAZAWA JIYOJI:AM.9:00–10:30, Monday, at MRI seminar room, M&D Tower 23F					

<b>Lecture No</b>	041425				
<b>Subject title</b>	Laboratory practice of Molecular Cytogenetics			<b>Subject ID</b>	
<b>Instructors</b>	INAZAWA JIYOJI, INOUE JUN, GENN Yasuyuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
A lecture room is different in a program, so check it for staff beforehand.					
<b>Course Purpose and Outline</b>					
The human genome sequence has been unraveled by The Human Genome Project in 2003. Consequently, personalized medicine (PM) has become reality based on the personal genomic information. It is essential to have the enough knowledge of medical genomics and epigenomics not only for the development of medical and dental sciences and technology but also for the clinical implementation of PM. This lecture instructs the basic knowledge and advanced technics to understand the molecular basis underlying cancer and genetic diseases.					
<b>Course Objective(s)</b>					
The acquirement of knowledge of basic and leading-edge medical genomics and bioethics. The understanding of pathogenic mechanism, diagnosis, cure and prevention in genomic and epigenomic disorders.					
<b>Lecture Style</b>					
Individual guidance in principle.					
<b>Course Outline</b>					
Goals/Outline: 1) Identification of cancer-related genes, including microRNAs, by genomic and epigenomic approaches, and characterization of these genes using in vitro/ in vivo experimental models reproducing characteristic aspects and behaviors for human cancers; e.g. uncontrolled excess of cell growth, metastasis, epithelial-mesenchymal transition (EMT), and altered autophagy. 2) Molecular cytogenetic investigation of genomic disorders including multiple congenital anomalies and intellectual disability (MCA/ID) using integrative genomics and epigenomics. 3) Development of innovative techniques for genomics and/or epigenomics in medical sciences.					
<b>Grading System</b>					
Evaluated based on the following points; 1) Attitude for study, i.e. the independence of mind. (40%), 2) Progress situation in own research and record of attendance at weekly seminar and the meeting for research in progress. (40%) 3) Presentation of progress and results of own research and introduction of journal articles in seminar. (20%)					
<b>Prerequisite Reading</b>					
None					
<b>Reference Materials</b>					
1. Cancer: Principles & Practice of Oncology: Primer of the Molecular Biology of Cancer. DeVita, Vincent T., Jr., Theodore S. Lawrence. Walters Kluwer 2nd Ed. 2015. 2. Human Molecular Genetics. Strachan T.& Read AP. CRC Press 5th Ed. 2018 3. The Language of Life: DNA and the Revolution in Personalized Medicine. Francis S. Collins. Harper Publisher 2010. 4. Thompson&Thompson Genetics in Medicine, 8th Edition. Nussbaum R et al. Saunders.2015					
<b>Important Course Requirements</b> None					
<b>Note(s) to Students</b> No limitation about the number of applicants					
<b>Email</b> INAZAWA JIYOJI: johinaz.cgen@mri.tmd.ac.jp M & D • 23F					
<b>Instructor's Contact Information</b>					
INAZAWA JIYOJI: AM.9:00-10:30, Monday, at MRI seminar room, M&D Tower 23F					

<b>Lecture No</b>	041429				
<b>Subject title</b>	Lecture of Hematology I	<b>Subject ID</b>			
<b>Instructors</b>	YAMAMOTO MASAHIDE, NAGAO TOSHIKAGE, WATANABE KEN, UMEZAWA Yoshihiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041430				
<b>Subject title</b>	Practice of Hematology I	<b>Subject ID</b>			
<b>Instructors</b>	YAMAMOTO MASAHIDE, NAGAO TOSHIKAGE, WATANABE KEN, UMEZAWA Yoshihiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041431				
<b>Subject title</b>	Laboratory practice of Hematology I	<b>Subject ID</b>			
<b>Instructors</b>	YAMAMOTO MASAHIDE, NAGAO TOSHIKAGE, WATANABE KEN, UMEZAWA Yoshihiro				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Course Purpose and Outline</b>					
Not offered					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041432				
<b>Subject title</b>	Lecture of Hematology II	<b>Subject ID</b>			
<b>Instructors</b>	KAWAMATA Norihiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					



<b>Lecture No</b>	041433				
<b>Subject title</b>	Practice of Hematology II	<b>Subject ID</b>			
<b>Instructors</b>	KAWAMATA Norihiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041434				
<b>Subject title</b>	Laboratory practice of Hematology II	<b>Subject ID</b>			
<b>Instructors</b>	KAWAMATA Norihiko				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
<b>Prerequisite Reading</b>					

<b>Lecture No</b>	041435				
<b>Subject title</b>	Lecture of Molecular Endocrinology and Metabolism	<b>Subject ID</b>			
<b>Instructors</b>	YAMADA Tetsuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
N/A					
<b>Course Purpose and Outline</b>					
This training program is designed to educate and establish 'physician-scientist' in the field of endocrinology and metabolism.					
<b>Course Objective(s)</b>					
The research program provides mentor-based training in experimental design, laboratory and clinical research techniques and methodology, and interpretation and analysis of the results obtained from cellular and molecular biology, physiology, clinical physiology, clinical therapeutics, and health sciences.					
<b>Lecture Style</b>					
Small-group seminar based on discussion with mentor.					
<b>Course Outline</b>					
Goals/outline: Our training program enables PhD students to prepare for their future academic and/or clinical careers in the multidiscipline of endocrinology and metabolism.					
<b>Grading System</b>					
Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.					
<b>Prerequisite Reading</b>					
Depending on the program, always check supervisor in advance.					
<b>Reference Materials</b>					
Williams Text book of Endocrinology 12th edition (ed. Melmed S et al) published from Saunders Joslin Diabetes Mellitus 14th edition (ed. Kahn CR et al) published from Lippincott Williams & Wilkins					
<b>Important Course Requirements</b>					
N/A					

<b>Lecture No</b>	041436				
<b>Subject title</b>	Practice of Molecular Endocrinology and Metabolism	<b>Subject ID</b>			
<b>Instructors</b>	YAMADA Tetsuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
N/A					
<b>Course Purpose and Outline</b>					
This training program is designed to educate and establish ‘physician–scientist’ in the field of endocrinology and metabolism.					
<b>Course Objective(s)</b>					
The research program provides mentor–based training in experimental design, laboratory and clinical research techniques and methodology, and interpretation and analysis of the results obtained from cellular and molecular biology, physiology, clinical physiology, clinical therapeutics, and health sciences.					
<b>Lecture Style</b>					
Small–group seminar based on discussion with mentor.					
<b>Course Outline</b>					
Goals/Outline: Our clinical training program provides for the practice through comprehensive inpatient and outpatient services in the area of endocrine and metabolic disorders.					
<b>Grading System</b>					
Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.					
<b>Prerequisite Reading</b>					
Depending on the program, always check supervisor in advance.					
<b>Reference Materials</b>					
Williams Text book of Endocrinology 12th edition (ed. Melmed S et al) published from Saunders Joslin Diabetes Mellitus 14th edition (ed. Kahn CR et al) published from Lippincott Williams & Wilkins					
<b>Important Course Requirements</b>					
N/A					

<b>Lecture No</b>	041437				
<b>Subject title</b>	Laboratory practice of Molecular Endocrinology and Metabolism	<b>Subject ID</b>			
<b>Instructors</b>	YAMADA Tetsuya				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
N/A					
<b>Course Purpose and Outline</b>					
This training program is designed to educate and establish ‘physician–scientist’ in the field of endocrinology and metabolism.					
<b>Course Objective(s)</b>					
The research program provides mentor–based training in experimental design, laboratory and clinical research techniques and methodology, and interpretation and analysis of the results obtained from cellular and molecular biology, physiology, clinical physiology, clinical therapeutics, and health sciences.					
<b>Lecture Style</b>					
Small–group seminar based on discussion with mentor.					
<b>Course Outline</b>					
Goals/Outline: The research program provides mentor–based training in experimental design, laboratory and clinical research techniques and methodology, and interpretation and analysis of the results obtained from cellular and molecular biology, physiology, clinical physiology, clinical therapeutics, and health sciences.					
<b>Grading System</b>					
Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.					
<b>Prerequisite Reading</b>					
Depending on the program, always check supervisor in advance.					
<b>Reference Materials</b>					
Williams Text book of Endocrinology 12th edition (ed. Melmed S et al) published from Saunders Joslin Diabetes Mellitus 14th edition (ed. Kahn CR et al) published from Lippincott Williams & Wilkins					
<b>Important Course Requirements</b>					
N/A					

<b>Lecture No</b>	041438				
<b>Subject title</b>	Lecture of Hepatobiliary and Pancreatic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	TANABE MINORU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Different venue depending on the specific program					
<b>Course Purpose and Outline</b>					
The graduates will understand various Hepato-Biliary-Pancreatic diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
Course objectives are: 1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of Hepato-Biliary-Pancreatic surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on HBP disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
Small-group guidance					
<b>Course Outline</b>					
Goals/outline: Lectures on biomolecular mechanisms of carcinogenesis, cancer growth, invasion and metastasis in digestive organs, especially liver, biliary duct and pancreas; leading to molecular target therapy. In addition, the general and advanced researches on the diagnosis and treatment of the cancers are expounded, as well as clinical and basic researches on liver transplantation.					
<b>Grading System</b>					
Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice 19th ed. Saunders, USA 2012 Schwartz's Principles of Surgery 9th ed. McGraw-Hill Professional, USA 2009 Clinical Oncology : A Multi- Disciplinary Approach for Physicians & Students 8th ed. Saunders, USA 2001					
<b>Important Course Requirements</b>					
Nothing in particular.					

<b>Lecture No</b>	041439				
<b>Subject title</b>	Practice of Hepatobiliary and Pancreatic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	TANABE MINORU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Different venue depending on the specific program					
<b>Course Purpose and Outline</b>					
The graduates will understand various Hepato-Biliary-Pancreatic diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
Course objectives are: 1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of Hepato-Biliary-Pancreatic surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on HBP disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
Small-group guidance					
<b>Course Outline</b>					
Goals/Outline: Practices on methods, points of case history, physical examination, imaging diagnosis, and laboratory tests. The treatments and cares of patients are learned in accordance with the disease and cancer stages, as well as the perioperative cares and surgical techniques of liver transplantation.					
<b>Grading System</b>					
Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice 19th ed. Saunders, USA 2012 Schwartz's Principles of Surgery 9th ed. McGraw-Hill Professional, USA 2009 Clinical Oncology : A Multi- Disciplinary Approach for Physicians & Students 8th ed. Saunders, USA 2001					
<b>Important Course Requirements</b>					
Nothing in particular.					

<b>Lecture No</b>	041440				
<b>Subject title</b>	Laboratory practice of Hepatobiliary and Pancreatic Surgery	<b>Subject ID</b>			
<b>Instructors</b>	TANABE MINORU				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Different venue depending on the specific program					
<b>Course Purpose and Outline</b>					
The graduates will understand various Hepato-Biliary-Pancreatic diseases and attain the ability to manage these diseases and the problems of patients, through clinical experiences and basic researches.					
<b>Course Objective(s)</b>					
Course objectives are: 1.Understanding of surgical health care system delivery to both inpatients and outpatients. 2.Learning surgical technique of Hepato-Biliary-Pancreatic surgery as an operator or assistants. 3.How to conduct clinical and/or basic research on HBP disease in collaboration with the other fields of specialists. 4.To promote skills in presentation at scientific meetings. 5.Acquisition of educational methods for junior surgeons. 6.Function as a member of the surgical team.					
<b>Lecture Style</b>					
Small-group guidance					
<b>Course Outline</b>					
Goals/Outline: Since poorer prognosis and awful QOL are recognized generally in the patients with cancers of the digestive system, especially liver, biliary duct and pancreas, the development and clinical application of novel cancer treatments are required in this field. Furthermore, the surgical treatments in this area should require the highly skilled techniques, and the intensive cares of severe complications such as postoperative liver failure. There also remain so many problems to be solved in the liver transplantation; for example, immuno-suppression, infectious diseases and organ preservation. The mission of our researches is a breakthrough in these critical matters.					
<b>Grading System</b>					
Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.					
<b>Prerequisite Reading</b>					
Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.					
<b>Reference Materials</b>					
Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice 19th ed. Saunders, USA 2012 Schwartz's Principles of Surgery 9th ed. McGraw-Hill Professional, USA 2009 Clinical Oncology : A Multi- Disciplinary Approach for Physicians & Students 8th ed. Saunders, USA 2001					
<b>Important Course Requirements</b>					
Nothing in particular.					



<b>Lecture No</b>	041441				
<b>Subject title</b>	Lecture of Orthopaedic and Spinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	OKAWA ATSUSHI, YOSHII TOSHITAKA, INOSE HIROYUKI, FUJITA KOJI, HIRAI TAKASHI, YUASA Masato, ASO YOSHINORI, O YOTO, TAKADA Ryouhei, KAWABATA SHIGENORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)					
<b>Course Purpose and Outline</b> The purpose of the course is to build the students' store of knowledge concerning bone and joint disorders and spinal disorders. The students should plan and conduct experiments which will clarify the mechanisms underlying these disorders or will be valuable for developments of treatments.					
<b>Course Objective(s)</b> To build the ability to discover new questions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.					
<b>Lecture Style</b> We sentence you to small number of people education of independent participation type of a graduate student.					
<b>Course Outline</b> By reading papers of top-journals, the students should extend their knowledge concerning bone, joint and neurological disorders. Discussion about the students' research will be held in Research Progress Meeting.					
<b>Grading System</b> Attendance rate at each program (50%) Progress of the research, research presentation at research meetings, research publication (50%)					
<b>Prerequisite Reading</b> Students should attend the journal clubs three times a week and review the papers read in the journal clubs.					
<b>TextBook</b> 標準整形外科学／中村利孝, 松野丈夫 監修,井樋栄二, 吉川秀樹, 津村弘 編集,中村, 利孝, 1948-,松野, 丈夫, 1947-,井樋, 栄二, 1956-, 吉川, 秀樹, 1954-,津村, 弘,:医学書院, 2017 リハビリテーション医学・医療コアテキスト／日本リハビリテーション医学会 監修,久保俊一 総編集,加藤真介, 角田亘 編集,安保雅博, 海老原覚, 佐浦隆一, 千田益生, 田島文博, 津田英一, 芳賀信彦 section editor,久保, 俊一, 1953-,加藤, 真介,角田, 亘,安保, 雅博,海老原, 覚,佐浦, 隆一,日本リハビリテーション医学会,:医学書院, 2018					
<b>Reference Materials</b> Students should read publications retrieved in accordance with their research themes.					
<b>Important Course Requirements</b> Not applicable					
<b>Note(s) to Students</b> We welcome participation from the other lecture about a graduate school lecture, a particular lecture, a graduate school seminar. We have several cooperation study with other section.					
<b>Email</b> OKAWA ATSUSHI:okawa.orth@tmd.ac.jp					
<b>Instructor's Contact Information</b> OKAWA ATSUSHI:Every Tuesday AM8:00-8:30 M&DTower south side Orthopaedics Professor's room					

<b>Lecture No</b>	041442				
<b>Subject title</b>	Practice of Orthopaedic and Spinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	OKAWA ATSUSHI, YOSHII TOSHITAKA, INOSE HIROYUKI, FUJITA KOJI, HIRAI TAKASHI, YUASA Masato, ASO YOSHINORI, O YOTO, TAKADA Ryouhei, KAWABATA SHIGENORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)				
<b>Course Purpose and Outline</b>	The purpose of the course is to build the students' store of knowledge concerning bone and joint disorders and spinal disorders. The students should plan and conduct experiments which will clarify the mechanisms underlying these disorders or will be valuable for developments of treatments.				
<b>Course Objective(s)</b>	To build the ability to discover new questions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.				
<b>Lecture Style</b>	We sentence you to small number of people education of independent participation type of a graduate student.				
<b>Course Outline</b>	Goals/Outline: We practice findings of clinical problem of the locomotorium lesion such as joints, spine, intervertebral disc, spinal cord, peripheral nerve disorders, aging, injury, tumorigenesis mechanism, and image findings. Through these practices we train to make the clinical diagnosis and to plan the adequate treatment.				
<b>Grading System</b>	Attendance rate at each program (50%) Progress of the research, research presentation at research meetings, research publication (50%)				
<b>Prerequisite Reading</b>	Students should attend the journal clubs three times a week and review the papers read in the journal clubs.				
<b>TextBook</b>	標準整形外科学／中村利孝, 松野丈夫 監修,井樋栄二, 吉川秀樹, 津村弘 編集,中村, 利孝, 1948-松野, 丈夫, 1947-,井樋, 栄二, 1956-, 吉川, 秀樹, 1954-,津村, 弘,:医学書院, 2017 リハビリテーション医学・医療コアテキスト／日本リハビリテーション医学会 監修,久保俊一 総編集,加藤真介, 角田亘 編集,安保雅博, 海老原覚, 佐浦隆一, 千田益生, 田島文博, 津田英一, 芳賀信彦 section editor,久保, 俊一, 1953-,加藤, 真介,角田, 亘,安保, 雅博,海老原, 覚,佐浦, 隆一,日本リハビリテーション医学会,:医学書院, 2018				
<b>Reference Materials</b>	Students should read publications retrieved in accordance with their research themes.				
<b>Important Course Requirements</b>	Not applicable				
<b>Note(s) to Students</b>	We welcome participation from the other lecture about a graduate school lecture, a particular lecture, a graduate school seminar. We have several cooperation study with other section.				
<b>Email</b>	OKAWA ATSUSHI:okawa.orth@tmd.ac.jp				
<b>Instructor's Contact Information</b>	OKAWA ATSUSHI:Every Tuesday AM8:00-8:30 M&DTower south side Orthopaedics Professor's room				

<b>Lecture No</b>	041443				
<b>Subject title</b>	Laboratory practice of Orthopaedic and Spinal Surgery			<b>Subject ID</b>	
<b>Instructors</b>	OKAWA ATSUSHI, YOSHII TOSHITAKA, INOSE HIROYUKI, FUJITA KOJI, HIRAI TAKASHI, YUASA Masato, ASO YOSHINORI, O YOTO, TAKADA Ryouhei, KAWABATA SHIGENORI]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>	Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)				
<b>Course Purpose and Outline</b>	The purpose of the course is to build the students' store of knowledge concerning bone and joint disorders and spinal disorders. The students should plan and conduct experiments which will clarify the mechanisms underlying these disorders or will be valuable for developments of treatments.				
<b>Course Objective(s)</b>	To build the ability to discover new questions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.				
<b>Lecture Style</b>	We sentence you to small number of people education of independent participation type of a graduate student.				
<b>Course Outline</b>	Goals/Outline: Molecular biologically and using physiological procedure we analyze motor of joints, spine, intervertebral disc, spinal cord, peripheral nerve disorders, aging, injury, tumorigenesis mechanism and definite how to treat these disorders. And also we would do tissue reconstruction or develop an artificial bone.				
<b>Grading System</b>	Attendance rate at each program (50%) Progress of the research, research presentation at research meetings, research publication (50%)				
<b>Prerequisite Reading</b>	Students should attend the journal clubs three times a week and review the papers read in the journal clubs.				
<b>TextBook</b>	標準整形外科学／中村利孝, 松野丈夫 監修,井樋栄二, 吉川秀樹, 津村弘 編集,中村, 利孝, 1948-松野, 丈夫, 1947-,井樋, 栄二, 1956-, 吉川, 秀樹, 1954-,津村, 弘,:医学書院, 2017 リハビリテーション医学・医療コアテキスト／日本リハビリテーション医学会 監修,久保俊一 総編集,加藤真介, 角田亘 編集,安保雅博, 海老原覚, 佐浦隆一, 千田益生, 田島文博, 津田英一, 芳賀信彦 section editor,久保, 俊一, 1953-,加藤, 真介,角田, 亘,安保, 雅博,海老原, 覚,佐浦, 隆一,日本リハビリテーション医学会,:医学書院, 2018				
<b>Reference Materials</b>	Students should read publications retrieved in accordance with their research themes.				
<b>Important Course Requirements</b>	Not applicable				
<b>Note(s) to Students</b>	We welcome participation from the other lecture about a graduate school lecture, a particular lecture, a graduate school seminar. We have several cooperation study with other section.				
<b>Email</b>	OKAWA ATSUSHI:okawa.orth@tmd.ac.jp				
<b>Instructor's Contact Information</b>	OKAWA ATSUSHI:Every Tuesday AM8:00-8:30 M&DTower south side Orthopaedics Professor's room				

<b>Lecture No</b>	041444				
<b>Subject title</b>	Lecture of Diagnostic Radiology and Nuclear Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TATEISHI UKIHIDE, KISHINO Mitsuhiro, KITAZUME YOSHIO, FUJIOKA TOMOYUKI, TSUCHIYA JUNICHI[]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English					
<b>Prerequisite Reading</b>					
<b>Email</b> TATEISHI UKIHIDE: radiology.mrad@tmd.ac.jp					
<b>Instructor's Contact Information</b> TATEISHI UKIHIDE: Monday to Friday 9:30AM to 16:00PM M&D 9F S964					

<b>Lecture No</b>	041445				
<b>Subject title</b>	Practice of Diagnostic Radiology and Nuclear Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TATEISHI UKIHIDE, KISHINO Mitsuhiro, KITAZUME YOSHIO, FUJIOKA TOMOYUKI, TSUCHIYA JUNICHI[]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English					
<b>Prerequisite Reading</b>					
<b>Email</b> TATEISHI UKIHIDE: radiology.mrad@tmd.ac.jp					
<b>Instructor's Contact Information</b> TATEISHI UKIHIDE: Monday to Friday 9:30AM to 16:00PM M&D 9F S964					

<b>Lecture No</b>	041446				
<b>Subject title</b>	Laboratory practice of Diagnostic Radiology and Nuclear Medicine	<b>Subject ID</b>			
<b>Instructors</b>	TATEISHI UKIHIDE, KISHINO Mitsuhiro, KITAZUME YOSHIO, FUJIOKA TOMOYUKI, TSUCHIYA JUNICHI[]				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English					
<b>Prerequisite Reading</b>					
<b>Email</b>					
TATEISHI UKIHIDE: radiology.mrad@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
TATEISHI UKIHIDE: Monday to Friday 9:30AM to 16:00PM M&D 9F S964					

<b>Lecture No</b>	041447				
<b>Subject title</b>	Lecture of Genomic Function and Diversity			<b>Subject ID</b>	
<b>Instructors</b>	KOUCHI Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Department of Genomic Function and Diversity (M&D Tower 24F)					
<b>Course Purpose and Outline</b>					
To introduce the methodologies and techniques for the study of complex diseases using multiomics data such as those of genome-wide association studies (GWAS) and expression quantitative trait locus (eQTL) studies.					
<b>Course Objective(s)</b>					
To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.					
<b>Lecture Style</b>					
Lecture, discussion, and presentation.					
<b>Course Outline</b>					
Themes of seminars					
<ul style="list-style-type: none"> <li>• GWAS</li> <li>• eQTL</li> <li>• Integration of GWAS and eQTL data</li> <li>• Use of other omics data (epigenome data etc)</li> </ul>					
<b>Grading System</b>					
Participation (60%) and quality of presentation and discussion (40%)					
<b>Prerequisite Reading</b>					
Understanding basic statistics is essential.					
<b>TextBook</b>					
遺伝統計学入門／鎌谷直之著, 鎌谷, 直之, : 岩波書店, 2015					
<b>Reference Materials</b>					
次世代シーケンサーDRY解析教本 改訂第2版／清水厚志 著・文・その他, 清水厚志 編集, 坊農秀雅 著・文・その他, 坊農秀雅 編集, 清水厚志, 清水厚志, 坊農秀雅, 坊農秀雅, : 学研メディカル秀潤社, 2019-12-14					
新・涙なしの統計学／D. ロウントリー 著 ; 加納悟訳, Rowntree, Derek, 加納, 悟, : 新世社, 2001					

<b>Lecture No</b>	041448				
<b>Subject title</b>	Practice of Genomic Function and Diversity	<b>Subject ID</b>			
<b>Instructors</b>	KOUCHI Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Department of Genomic Function and Diversity (M&D Tower 24F)					
<b>Course Purpose and Outline</b>					
To introduce the methodologies and techniques for the study of complex diseases using multionics data such as those of genome-wide association studies (GWAS) and expression quantitative trait locus (eQTL) studies.					
<b>Course Objective(s)</b>					
To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.					
<b>Lecture Style</b>					
Lecture, discussion, and presentation.					
<b>Course Outline</b>					
Using publicly available data as well as analysis tools such as Plink, students learn how to analyse GWAS and eQTL data for disease genetics.					
<b>Grading System</b>					
Participation (60%) and quality of presentation and discussion (40%)					
<b>Prerequisite Reading</b>					
Understanding basic statistics is essential.					
<b>TextBook</b>					
遺伝統計学入門／鎌谷直之著, 鎌谷, 直之, : 岩波書店, 2015					
<b>Reference Materials</b>					
次世代シーケンサーDRY解析教本 改訂第2版／清水厚志 著・文・その他, 清水厚志 編集, 坊農秀雅 著・文・その他, 坊農秀雅 編集, 清水厚志, 清水厚志, 坊農秀雅, 坊農秀雅, : 学研メディカル秀潤社, 2019-12-14					
新・涙なしの統計学／D. ロウントリー著 ; 加納悟訳, Rowntree, Derek, 加納, 悟, : 新世社, 2001					



<b>Lecture No</b>	041449				
<b>Subject title</b>	Laboratory practice of Genomic Function and Diversity	<b>Subject ID</b>			
<b>Instructors</b>	KOUCHI Yuuta				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
Department of Genomic Function and Diversity (M&D Tower 24F)					
<b>Course Purpose and Outline</b>					
To introduce the methodologies and techniques for the study of complex diseases using multiomics data such as those of genome-wide association studies (GWAS) and expression quantitative trait locus (eQTL) studies.					
<b>Course Objective(s)</b>					
To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.					
<b>Lecture Style</b>					
Personal lecture, discussion, and presentation.					
<b>Course Outline</b>					
Students unravel a new mechanism of disease using GWAS data of their interest. To this end, students additionally use multiomics data such as eQTL and epigenome data.					
<b>Grading System</b>					
Participation (60%) and quality of presentation and discussion (40%)					
<b>Prerequisite Reading</b>					
Understanding basic statistics is essential.					
<b>TextBook</b>					
遺伝統計学入門／鎌谷直之著, 鎌谷 直之.: 岩波書店, 2015					
<b>Reference Materials</b>					
次世代シーケンサーDRY解析教本 改訂第2版／清水厚志 著・文・その他, 清水厚志 編集, 坊農秀雅 著・文・その他, 坊農秀雅 編集, 清水厚志, 清水厚志, 坊農秀雅, 坊農秀雅.: 学研メディカル秀潤社, 2019-12-14					
新・涙なしの統計学／D. ロウントリー著 ; 加納悟訳, Rowntree, Derek, 加納 悟.: 新世社, 2001					

<b>Lecture No</b>	041450				
<b>Subject title</b>	Lecture of Human Genetics and Disease Diversity	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA TOSHIHIRO, WATANABE RYO, NAGATA Yuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures, practices and laboratory components will mainly be held at the Bioresource Research Center (BRC) in the M&D Tower B1F. For further up to date information, please check the website and bulletin board.					
<b>Course Purpose and Outline</b>					
Humans are diverse organisms, and one area that this diversity is particularly exhibited is in the medical field such as in the way we develop disease and show resistance to treatment and drug side-effects. In order to understand this diversity, examination of inter-individual variation in our genetics and environment is essential by integrating both DNA and mRNA analysis (wet laboratory-based), together with data-mining and the statistical analytic evaluations of these data (dry lab). The purpose of this course is to provide the necessary foundation required to begin applying this integrative approach to individual research.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1. Acquire the basic techniques for DNA and mRNA analysis (wet laboratory techniques)</li> <li>2. Learn the basic procedures for statistical analysis of genetic data (dry laboratory techniques)</li> <li>3. Understand the relationship between genomic diversity and disease</li> <li>4. Understand the current state of research of this field and its applications in medical practice</li> </ol>					
<b>Lecture Style</b>					
<ul style="list-style-type: none"> <li>• Course lectures using powerpoint and/or small-group seminar-style lectures</li> <li>• Hands-on practicum using clinical samples (e.g. human DNA)</li> <li>• In silico statistical analysis of genetic data</li> </ul>					
<b>Course Outline</b>					
Goals/outline: Lectures on (i) human genome diversity and disease risks, (ii) research progress in the discovery of human disease associated genes, and (iii) basic methods in the statistical analysis of human genetic data					
<b>Grading System</b>					
Evaluation will be made according to participation in the course lectures, discussion, and practicum, and external activities (conferences, papers) with weights placed in the following manner:					
<ul style="list-style-type: none"> <li>• Participation in the course lectures, discussion, and practicum: 80%</li> <li>• External activities: 20%</li> </ul>					
<b>Prerequisite Reading</b>					
It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis					
<b>Reference Materials</b>					
Human Molecular Genetics, 4th edition (Publisher: Garland Science)					
The Fundamentals of Modern Statistical Genetics (Publisher: Springer)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
No special notes					
<b>Email</b>					
TANAKA TOSHIHIRO:ttana.brc@tmd.ac.jp					

<b>Lecture No</b>	041451				
<b>Subject title</b>	Practice of Human Genetics and Disease Diversity	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA TOSHIHIRO, WATANABE RYO, NAGATA Yuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures, practices and laboratory components will mainly be held at the Bioresource Research Center (BRC) in the M&D Tower B1F. For further up to date information, please check the website and bulletin board.					
<b>Course Purpose and Outline</b>					
Humans are diverse organisms, and one area that this diversity is particularly exhibited is in the medical field such as in the way we develop disease and show resistance to treatment and drug side-effects. In order to understand this diversity, examination of inter-individual variation in our genetics and environment is essential by integrating both DNA and mRNA analysis (wet laboratory-based), together with data-mining and the statistical analytic evaluations of these data (dry lab). The purpose of this course is to provide the necessary foundation required to begin applying this integrative approach to individual research.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1. Acquire the basic techniques for DNA and mRNA analysis (wet laboratory techniques)</li> <li>2. Learn the basic procedures for statistical analysis of genetic data (dry laboratory techniques)</li> <li>3. Understand the relationship between genomic diversity and disease</li> <li>4. Understand the current state of research of this field and its applications in medical practice</li> </ol>					
<b>Lecture Style</b>					
<ul style="list-style-type: none"> <li>• Course lectures using powerpoint and/or small-group seminar-style lectures</li> <li>• Hands-on practicum using clinical samples (e.g. human DNA)</li> <li>• In silico statistical analysis of genetic data</li> </ul>					
<b>Course Outline</b>					
Goals/Outline: Practicum in (i) handling of human blood samples and extraction of human DNA / mRNA, (ii) utilizing human genome and epigenome databases, and (iii) statistical analysis of human genetic data obtained from public databases					
<b>Grading System</b>					
Evaluation will be made according to participation in the course lectures, discussion, and practicum, and external activities (conferences, papers) with weights placed in the following manner:					
<ul style="list-style-type: none"> <li>• Participation in the course lectures, discussion, and practicum: 80%</li> <li>• External activities: 20%</li> </ul>					
<b>Prerequisite Reading</b>					
It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis					
<b>Reference Materials</b>					
Human Molecular Genetics, 4th edition (Publisher: Garland Science)					
The Fundamentals of Modern Statistical Genetics (Publisher: Springer)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
No special notes					
<b>Email</b>					
TANAKA TOSHIHIRO:ttana.brc@tmd.ac.jp					

<b>Lecture No</b>	041452				
<b>Subject title</b>	Laboratory practice of Human Genetics and Disease Diversity	<b>Subject ID</b>			
<b>Instructors</b>	TANAKA TOSHIHIRO, WATANABE RYO, NAGATA Yuki				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b>					
Lectures, practices and laboratory components will mainly be held at the Bioresource Research Center (BRC) in the M&D Tower B1F. For further up to date information, please check the website and bulletin board.					
<b>Course Purpose and Outline</b>					
Humans are diverse organisms, and one area that this diversity is particularly exhibited is in the medical field such as in the way we develop disease and show resistance to treatment and drug side-effects. In order to understand this diversity, examination of inter-individual variation in our genetics and environment is essential by integrating both DNA and mRNA analysis (wet laboratory-based), together with data-mining and the statistical analytic evaluations of these data (dry lab). The purpose of this course is to provide the necessary foundation required to begin applying this integrative approach to individual research.					
<b>Course Objective(s)</b>					
<ol style="list-style-type: none"> <li>1. Acquire the basic techniques for DNA and mRNA analysis (wet laboratory techniques)</li> <li>2. Learn the basic procedures for statistical analysis of genetic data (dry laboratory techniques)</li> <li>3. Understand the relationship between genomic diversity and disease</li> <li>4. Understand the current state of research of this field and its applications in medical practice</li> </ol>					
<b>Lecture Style</b>					
<ul style="list-style-type: none"> <li>• Course lectures using powerpoint and/or small-group seminar-style lectures</li> <li>• Hands-on practicum using clinical samples (e.g. human DNA)</li> <li>• In silico statistical analysis of genetic data</li> </ul>					
<b>Course Outline</b>					
Goals/Outline: Work on the (i) extraction of human DNA / mRNA from human blood samples, genotyping of human genome variants, and measuring expression levels of mRNA, (ii) statistical analysis of the generated human genetic data using software packages, (iii) appropriate interpretation of the obtained results, and (iv) "big data" genetic analysis					
<b>Grading System</b>					
Evaluation will be made according to participation in the course lectures, discussion, and practicum, and external activities (conferences, papers) with weights placed in the following manner:					
<ul style="list-style-type: none"> <li>• Participation in the course lectures, discussion, and practicum: 80%</li> <li>• External activities: 20%</li> </ul>					
<b>Prerequisite Reading</b>					
It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis					
<b>Reference Materials</b>					
Human Molecular Genetics, 4th edition (Publisher: Garland Science)					
The Fundamentals of Modern Statistical Genetics (Publisher: Springer)					
<b>Important Course Requirements</b>					
None					
<b>Note(s) to Students</b>					
No special notes					
<b>Email</b>					
TANAKA TOSHIHIRO:ttana.brc@tmd.ac.jp					

<b>Lecture No</b>	041453				
<b>Subject title</b>	Lecture of Applied Regenerative Medicine			<b>Subject ID</b>	
<b>Instructors</b>	SEKIYA ICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Venues are different according to the program.					
<b>Course Purpose and Outline</b> To learn stem cell research and regenerative medicine for the discovery and development of cures, therapies, diagnostics and research technologies to relieve human suffering from chronic disease and injury.					
<b>Course Objective(s)</b> 1 Understand theory and practice in regenerative medicine with stem cells. 2 Analyze medical and/or social issues about realization and industrialization of cell and regenerative therapy. 3 Set the scientific question and present the solutions for problems about regenerative medicine 4 Conduct research and report the summary of research in English.					
<b>Lecture Style</b> Small-group class					
<b>Course Outline</b> In this course, students will learn about the practical application and industrialization issues of domestic and overseas trends in research and development of regenerative medicine research, practical study on problem solving methods. Also, participate in introduction of English articles on latest analysis methods and evaluation methods.					
<b>Grading System</b> Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b> We introduce some papers according to your purposes.					
<b>Reference Materials</b> Arthroscopic transplantation of synovial stem cells improves clinical outcomes in knees with cartilage defects. Sekiya I, Muneta T, Horie M, Koga H Clin Orthop Relat Res. 2015 Jul;473(7):2316-26.  Not single but periodic injections of synovial mesenchymal stem cells maintain viable cells in knees and inhibit osteoarthritis progression in rats. Ozeki N, Sekiya I et al. Osteoarthritis Cartilage. 2016 Jun;24(6):1061-70. doi: 10.1016/j.joca.2015.12.018.					
<b>Important Course Requirements</b> Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b> For detailed information of what we do, please search our previous papers with PubMed. Key words are "Sekiya I" and "stem cells."					

<b>Lecture No</b>	041454				
<b>Subject title</b>	Practice of Applied Regenerative Medicine	<b>Subject ID</b>			
<b>Instructors</b>	SEKIYA ICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b> Venues are different according to the program.					
<b>Course Purpose and Outline</b> To learn stem cell research and regenerative medicine for the discovery and development of cures, therapies, diagnostics and research technologies to relieve human suffering from chronic disease and injury.					
<b>Course Objective(s)</b> 1 Understand theory and practice in regenerative medicine with stem cells. 2 Analyze medical and/or social issues about realization and industrialization of cell and regenerative therapy. 3 Set the scientific question and present the solutions for problems about regenerative medicine 4 Conduct research and report the summary of research in English.					
<b>Lecture Style</b> Small-group class					
<b>Course Outline</b> In this course, based on the tasks given individually, students will extract problems, examine solution methods, conduct research reports in a seminar, and participate in ongoing research projects. In addition, students will present English papers on the latest analysis methods and evaluation methods.					
<b>Grading System</b> Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b> We introduce some papers according to your purposes.					
<b>Reference Materials</b> Arthroscopic transplantation of synovial stem cells improves clinical outcomes in knees with cartilage defects. Sekiya I, Muneta T, Horie M, Koga H Clin Orthop Relat Res. 2015 Jul;473(7):2316–26.  Not single but periodic injections of synovial mesenchymal stem cells maintain viable cells in knees and inhibit osteoarthritis progression in rats. Ozeki N, Sekiya I et al. Osteoarthritis Cartilage. 2016 Jun;24(6):1061–70. doi: 10.1016/j.joca.2015.12.018.					
<b>Important Course Requirements</b> Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b> For detailed information of what we do, please search our previous papers with PubMed. Key words are “Sekiya I” and “stem cells.”					

<b>Lecture No</b>	041455				
<b>Subject title</b>	Laboratory practice of Applied Regenerative Medicine			<b>Subject ID</b>	
<b>Instructors</b>	SEKIYA ICHIRO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be partially conducted in English.					
<b>Lecture place</b>					
Venues are different according to the program.					
<b>Course Purpose and Outline</b>					
To learn stem cell research and regenerative medicine for the discovery and development of cures, therapies, diagnostics and research technologies to relieve human suffering from chronic disease and injury.					
<b>Course Objective(s)</b>					
1 Understand theory and practice in regenerative medicine with stem cells.					
2 Analyze medical and/or social issues about realization and industrialization of cell and regenerative therapy.					
3 Set the scientific question and present the solutions for problems about regenerative medicine					
4 Conduct research and report the summary of research in English.					
<b>Lecture Style</b>					
Small-group class					
<b>Course Outline</b>					
Students are expected to master skills necessary for research and development of stem cell research and regenerative medicine by participating in a research group.					
<b>Grading System</b>					
Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.					
<b>Prerequisite Reading</b>					
We introduce some papers according to your purposes.					
<b>Reference Materials</b>					
Arthroscopic transplantation of synovial stem cells improves clinical outcomes in knees with cartilage defects. Sekiya I, Muneta T, Horie M, Koga H Clin Orthop Relat Res. 2015 Jul;473(7):2316–26.					
Not single but periodic injections of synovial mesenchymal stem cells maintain viable cells in knees and inhibit osteoarthritis progression in rats. Ozeki N, Sekiya I et al. Osteoarthritis Cartilage. 2016 Jun;24(6):1061–70. doi: 10.1016/j.joca.2015.12.018.					
<b>Important Course Requirements</b>					
Participants are required to study on a voluntary basis.					
<b>Note(s) to Students</b>					
For detailed information of what we do, please search our previous papers with PubMed. Key words are “Sekiya I” and “stem cells.”					

<b>Lecture No</b>	041456				
<b>Subject title</b>	Lecture of JFCR Cancer Biology			<b>Subject ID</b>	
<b>Instructors</b>	Takuroh Nakamura, SHIBA Kiyotaka, TOMIDA Akihiro, Tohru Hirota, TAKEUCHI Kengo, SAITOH Noriko, NAKAMURA Yusuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo					
<b>Course Purpose and Outline</b> Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.					
<b>Course Objective(s)</b> Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.					
<b>Lecture Style</b> Contact with each instructor of interest.					
<b>Course Outline</b> Goals/outline: Understanding the mechanisms of carcinogenesis and cancer progression. Studying the basics of personalized medicine for innovative cancer therapy.					
<b>Grading System</b> Will be evaluated based on the attendance record (~70%) and achievement of knowledge and techniques (~30%). Presentation and discussion activities may also be considered as additional information.					
<b>Prerequisite Reading</b> Contact with each instructor of interest.					
<b>Reference Materials</b> Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.					
<b>Important Course Requirements</b> Contact with each instructor of interest.					
<b>Email</b> Takuroh Nakamura:takuro-ind@umin.net					
<b>Instructor's Contact Information</b> Takuroh Nakamura:Monday to Friday 9 am to 5 pm Cancer Institute, room 329 (3-8-31 Ariake, Koto-ku, Tokyo)					



<b>Lecture No</b>	041457				
<b>Subject title</b>	Practice of JFCR Cancer Biology	<b>Subject ID</b>			
<b>Instructors</b>	Takuroh Nakamura, SHIBA Kiyotaka, TOMIDA Akihiro, Tohru Hirota, TAKEUCHI Kengo, SAITOH Noriko, NAKAMURA Yusuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo					
<b>Course Purpose and Outline</b> Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.					
<b>Course Objective(s)</b> Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.					
<b>Lecture Style</b> Contact with each instructor of interest.					
<b>Course Outline</b> Goals/Outline: Students are expected to present progress reports and to discuss their data with other researchers in the faculty. When sufficient and convincing data are obtained, scientific presentation at the meeting/workshop/symposium will be encouraged.					
<b>Grading System</b> Will be evaluated based on the attendance record (~70%) and achievement of knowledge and techniques (~30%). Presentation and discussion activities may also be considered as additional information.					
<b>Prerequisite Reading</b> Contact with each instructor of interest.					
<b>Reference Materials</b> Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.					
<b>Important Course Requirements</b> Contact with each instructor of interest.					
<b>Email</b> Takuroh Nakamura:takuro-ind@umin.net					
<b>Instructor's Contact Information</b> Takuroh Nakamura:Monday to Friday 9 am to 5 pm Cancer Institute, room 329 (3-8-31 Ariake, Koto-ku, Tokyo)					

<b>Lecture No</b>	041458				
<b>Subject title</b>	Laboratory practice of JFCR Cancer Biology			<b>Subject ID</b>	
<b>Instructors</b>	Takuroh Nakamura, SHIBA Kiyotaka, TOMIDA Akihiro, Tohru Hirota, TAKEUCHI Kengo, SAITOH Noriko, NAKAMURA Yusuke				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Lectures will be conducted in English when foreign students registered.					
<b>Lecture place</b> The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo					
<b>Course Purpose and Outline</b> Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.					
<b>Course Objective(s)</b> Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.					
<b>Lecture Style</b> Contact with each instructor of interest.					
<b>Course Outline</b> Goals/Outline: 1. Clarify the carcinogenic mechanisms of leukemia and sarcoma by generating original animal models and analyzing patients' samples (Nakamura). 2. Study the basics of nanobiotechnology and participate in development of cancer diagnostic tools (Shiba). 3. Study the pathological and molecular characteristics of human malignant lymphoma. Search the novel cancer disease genes to utilize them as novel drug targets (Takeuchi). 4. Innovate molecular target therapies based on biological and genetic mechanisms in cancer (Tomida). 5. To elucidate origins of chromosomal instability in malignancies, using current techniques in molecular and cellular biology (Hirota) 6. Study the principles and experimental technologies for non-coding RNA, chromatin and the nuclear structures involved in carcinogenesis and development of therapy resistance, using the breast cancer cell model system (Saitoh)					
<b>Grading System</b> Will be evaluated based on the attendance record (~70%) and achievement of knowledge and techniques (~30%). Presentation and discussion activities may also be considered as additional information.					
<b>Prerequisite Reading</b> Contact with each instructor of interest.					
<b>Reference Materials</b> Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.					
<b>Important Course Requirements</b> Contact with each instructor of interest.					
<b>Email</b> Takuroh Nakamura:takuro-ind@umin.net					
<b>Instructor's Contact Information</b> Takuroh Nakamura:Monday to Friday 9 am to 5 pm Cancer Institute, room 329 (3-8-31 Ariake, Koto-ku, Tokyo)					

<b>Lecture No</b>	041459				
<b>Subject title</b>	Lecture of Medical Science Mathematics	<b>Subject ID</b>			
<b>Instructors</b>	TSUNODA TATSUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
③ When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
M&D Tower 25F South, Department of Medical Science Mathematics					
<b>Course Purpose and Outline</b>					
Learn how to research Medical Science Mathematics, which should be one of most powerful approaches with whole omic data to (1) exhaustively explore unknown disease etiologies, (2) sub-classify diseases on the basis of molecular profiling, and (3) apply optimum therapy for each patient.					
<b>Course Objective(s)</b>					
Master basic methodologies of data-science and mathematical aspects in genomic medicine etc. In addition, acquire logical thinking skills by reading related original papers.					
<b>Lecture Style</b>					
One-to-one lecture or seminar style for small number of graduate students.					
<b>Course Outline</b>					
Understand the importance of the mathematical aspects and large-scale data analysis in the field of medicine science, by applying the most advanced method of whole genome/omics analysis with medical big data, by clarifying the cause of disease and realizing precision medicine, and by researching systems medicine on the basis of accumulated knowledge. Also, we will search for therapeutic markers and build models for precision medicine including preemptive medicine by analyzing the omics profiles and clinical information of patients.					
<b>Grading System</b>					
Total evaluation: how actively contributing to the practice and the lab research, research content, and presentation/attendance to research meetings. As to the lab research, comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b>					
It is desirable to survey how genomic medicine, precision medicine, and systems medicine are significant.					
<b>Reference Materials</b>					
Nothing in particular.					
<b>Important Course Requirements</b>					
Nothing in particular.					
<b>Note(s) to Students</b>					
Nothing in particular.					

<b>Lecture No</b>	041460				
<b>Subject title</b>	Practice of Medical Science Mathematics	<b>Subject ID</b>			
<b>Instructors</b>	TSUNODA TATSUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
③ When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
M&D Tower 25F South, Department of Medical Science Mathematics					
<b>Course Purpose and Outline</b>					
Learn how to research Medical Science Mathematics, which should be one of most powerful approaches with whole omic data to (1) exhaustively explore unknown disease etiologies, (2) sub-classify diseases on the basis of molecular profiling, and (3) apply optimum therapy for each patient.					
<b>Course Objective(s)</b>					
Master basic methodologies of data-science and mathematical aspects in genomic medicine etc. In addition, acquire logical thinking skills by reading related original papers.					
<b>Lecture Style</b>					
One-to-one lecture or seminar style for small number of graduate students.					
<b>Course Outline</b>					
Goals/Outline: Read latest research papers, criticize their issues, and discuss future their directions focusing on (1) latest technologies of whole omic analysis, (2) researches on exploring disease etiologies and realizing precision medicine, and (3) systems medicine with knowledge and inference.					
<b>Grading System</b>					
Total evaluation: how actively contributing to the practice and the lab research, research content, and presentation/attendance to research meetings. As to the lab research, comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b>					
It is desirable to survey how genomic medicine, precision medicine, and systems medicine are significant.					
<b>Reference Materials</b>					
Nothing in particular.					
<b>Important Course Requirements</b>					
Nothing in particular.					
<b>Note(s) to Students</b>					
Nothing in particular.					

<b>Lecture No</b>	041461				
<b>Subject title</b>	Laboratory practice of Medical Science Mathematics	<b>Subject ID</b>			
<b>Instructors</b>	TSUNODA TATSUHIKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
③ When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b> M&D Tower 25F South, Department of Medical Science Mathematics					
<b>Course Purpose and Outline</b> Learn how to research Medical Science Mathematics, which should be one of most powerful approaches with whole omic data to (1) exhaustively explore unknown disease etiologies, (2) sub-classify diseases on the basis of molecular profiling, and (3) apply optimum therapy for each patient.					
<b>Course Objective(s)</b> Master basic methodologies of data-science and mathematical aspects in genomic medicine etc. In addition, acquire logical thinking skills by reading related original papers.					
<b>Lecture Style</b> One-to-one lecture or seminar style for small number of graduate students.					
<b>Course Outline</b> Goals/Outline: Get skills for research planning, analysis, and presentation on the basis of research topics: from next-generation data analysis and so on to systems medicine approach that analyze disease as a whole system.					
<b>Grading System</b> Total evaluation: how actively contributing to the practice and the lab research, research content, and presentation/attendance to research meetings. As to the lab research, comprehensively evaluated based on grade of Mid-term advice.					
<b>Prerequisite Reading</b> It is desirable to survey how genomic medicine, precision medicine, and systems medicine are significant.					
<b>Reference Materials</b> Nothing in particular.					
<b>Important Course Requirements</b> Nothing in particular.					
<b>Note(s) to Students</b> Nothing in particular.					

<b>Lecture No</b>	041462				
<b>Subject title</b>	Lecture of Frontier Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KIMURA TSUYOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).					
<b>Course Purpose and Outline</b>					
This course deals with medical materials and devices. Designing medical devices for realizing bio-function and their application are introduced through recent outcomes from the advanced research field.					
<b>Course Objective(s)</b>					
The goal of this course is to understand concept, characteristics and application of various medical materials and the devices and to learn how to control them.					
<b>Lecture Style</b>					
Lecture using powerpoint					
<b>Course Outline</b>					
The objective is to understand the materials, especially polymeric materials, for medical use. In the lecture, material characterization, scaffolds for regenerative medicine and tissue engineering, synthetic vector for drug and gene therapy and stem cell engineering are introduced and explained.					
<b>Grading System</b>					
Grading is comprehensively judged from attendance and reports.					
Participation to lecture: 50%					
Report: 50%					
<b>Prerequisite Reading</b>					
Reading the books "Biomaterials" and "Biomaterials Science".					
<b>TextBook</b>					
バイオマテリアル : その基礎と先端研究への展開 / 田畑泰彦, 埴隆夫編著, 田畑, 泰彦, 埴, 隆夫, 岡野, 光夫, 明石, 満, : 東京化学同人, 2016					
バイオマテリアルサイエンス : 基礎から臨床まで / 山岡哲二, 大矢裕一, 中野貴由, 石原一彦 著, 山岡, 哲二, 大矢, 裕一, 中野, 貴由, 1967-, : 東京化学同人, 2018					
<b>Reference Materials</b>					
ヴァジュアルでわかるバイオマテリアル / 古菌勉, 岡田正弘 編著, 古菌, 勉, 1960-, 岡田, 正弘, : 学研メディカル秀潤社, 2018					
Ratner et al. eds., Biomaterials Science, Academic Press					
Lanza et al., eds., Principles of Tissue Engineering, Academic Press					
<b>Note(s) to Students</b>					
If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp					
<b>Email</b>					
kimurat.mbme@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
As needed					

<b>Lecture No</b>	041463				
<b>Subject title</b>	Practice of Frontier Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KIMURA TSUYOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).					
<b>Course Purpose and Outline</b>					
This course deals with medical materials and devices. Designing medical devices for realizing bio-function and their application are introduced through recent outcomes from the advanced research field.					
<b>Course Objective(s)</b>					
The goal of this course is to understand the concept, characteristics, and application of various medical materials and the devices and to learn how to control them.					
<b>Lecture Style</b>					
Participants read English papers on advanced medical materials and explain them using powerpoint.					
<b>Course Outline</b>					
In this practice, participants read papers about material characterization, scaffolds for regenerative medicine and tissue engineering, synthetic vector for drug and gene therapy and stem cell engineering and explain them.					
<b>Grading System</b>					
Grading is comprehensively judged from attendance and contents.					
<b>Prerequisite Reading</b>					
Reading the books "Biomaterials" and "Biomaterials Science".					
<b>TextBook</b>					
バイオマテリアル：その基礎と先端研究への展開／田畑泰彦, 埴隆夫編著, 田畑, 泰彦, 埴, 隆夫, 岡野, 光夫, 明石, 満.: 東京化学同人, 2016					
バイオマテリアルサイエンス：基礎から臨床まで／山岡哲二, 大矢裕一, 中野貴由, 石原一彦 著, 山岡, 哲二, 大矢, 裕一, 中野, 貴由, 1967-.: 東京化学同人, 2018					
<b>Reference Materials</b>					
ヴァジュアルでわかるバイオマテリアル／古菌勉, 岡田正弘 編著, 古菌, 勉, 1960-. 岡田, 正弘.: 学研メディカル秀潤社, 2018					
Ratner et al. eds., Biomaterials Science, Academic Press					
Lanza et al., eds., Principles of Tissue Engineering, Academic Press					
<b>Note(s) to Students</b>					
If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp					
<b>Email</b>					
kimurat.mbme@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
As needed					

<b>Lecture No</b>	041464				
<b>Subject title</b>	Laboratory practice of Frontier Biomaterials	<b>Subject ID</b>			
<b>Instructors</b>	KIMURA TSUYOSHI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).					
<b>Course Purpose and Outline</b>					
This course deals with medical materials and devices. Designing medical devices for realizing bio-function and their application are researched.					
<b>Course Objective(s)</b>					
In this course, participants research for medical materials and present the research and publish it as the research paper.					
<b>Lecture Style</b>					
In this course, participants set and carry out the research, and write the research paper.					
<b>Course Outline</b>					
Participants research on medical materials.					
<b>Grading System</b>					
Grading is comprehensively judged from attendance and reports.					
<b>Prerequisite Reading</b>					
Reading the books "Biomaterials" and "Biomaterials Science".					
<b>TextBook</b>					
バイオマテリアル：その基礎と先端研究への展開／田畑泰彦, 埜隆夫編著, 田畑, 泰彦, 埜, 隆夫, 岡野, 光夫, 明石, 満, : 東京化学同人, 2016					
バイオマテリアルサイエンス：基礎から臨床まで／山岡哲二, 大矢裕一, 中野貴由, 石原一彦 著, 山岡, 哲二, 大矢, 裕一, 中野, 貴由, 1967-, : 東京化学同人, 2018					
<b>Reference Materials</b>					
ヴァジュアルでわかるバイオマテリアル／古菌勉, 岡田正弘 編著, 古菌, 勉, 1960-, 岡田, 正弘, : 学研メディカル秀潤社, 2018					
Ratner et al. eds., Biomaterials Science, Academic Press					
Lanza et al., eds., Principles of Tissue Engineering, Academic Press					
<b>Note(s) to Students</b>					
If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp					
<b>Email</b>					
kimurat.mbme@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
As needed					



<b>Lecture No</b>	041465				
<b>Subject title</b>	Lecture of Personalized Genomic Medicine for Health	<b>Subject ID</b>			
<b>Instructors</b>	ISHIKAWA KINYA, ABE YASUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>	To be announced				
<b>Course Purpose and Outline</b>	Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad field of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.				
<b>Course Objective(s)</b>	(1) By the end of this course, participants are expected to become able to understand how to identify gene(s) causing monogenic diseases, and uncover mechanism of diseases. (2) Participants are expected to learn how to identify genetic and environmental factors underlying polygenic diseases. (3) Participants are also expected to establish one's own view and position for related genomic fields such as pharmacogenomics and reproductive medicine.				
<b>Lecture Style</b>	Lectures are given in a small group. Laboratory work is personalized.				
<b>Course Outline</b>	Didactic lectures are provided through graduate school doctoral and master courses, and seminars. Small lectures and interactive sessions will take place on participants' individual basis.				
<b>Grading System</b>	Progress reports and the final research paper				
<b>Prerequisite Reading</b>	Genomic Medicine				
<b>Reference Materials</b>	Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社				
<b>Important Course Requirements</b>	Knowledge of genetics, human genetics, molecular biology is required. It is advisable that participants have basic knowledge of Internal Medicine and Surgery of undergraduate level.				
<b>Note(s) to Students</b>	none				

<b>Lecture No</b>	041466				
<b>Subject title</b>	Practice of Personalized Genomic Medicine for Health	<b>Subject ID</b>			
<b>Instructors</b>	ISHIKAWA KINYA, ABE YASUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
To be announced					
<b>Course Purpose and Outline</b>					
Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad field of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.					
<b>Course Objective(s)</b>					
(1) By the end of this course, participants are expected to become able to understand how to identify gene(s) causing monogenic diseases, and uncover mechanism of diseases. (2) Participants are expected to learn how to identify genetic and environmental factors underlying polygenic diseases. (3) Participants are also expected to establish one's own view and position for related genomic fields such as pharmacogenomics and reproductive medicine.					
<b>Lecture Style</b>					
Lectures are given in a small group. Laboratory work is personalized.					
<b>Course Outline</b>					
Goals /outline					
By conducting research under a supervisor, students will obtain knowledge and skills of asking appropriate scientific questions, planning a series of experiments to answer the question, and conducting actual experiments using various experimental techniques.					
Students also learn how to present his/her data at scientific meetings and how to write scientific papers.					
<b>Grading System</b>					
Progress reports and the final research paper					
<b>Prerequisite Reading</b>					
Genomic Medicine					
<b>Reference Materials</b>					
Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社					
<b>Important Course Requirements</b>					
Knowledge of genetics, human genetics, molecular biology is required. It is advisable that participants have basic knowledge of Internal Medicine and Surgery of undergraduate level.					
<b>Note(s) to Students</b>					
none					

<b>Lecture No</b>	041467				
<b>Subject title</b>	Laboratory practice of Personalized Genomic Medicine for Health	<b>Subject ID</b>			
<b>Instructors</b>	ISHIKAWA KINYA, ABE YASUKO				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
Partial classes are taught in English.					
<b>Lecture place</b>					
To be announced					
<b>Course Purpose and Outline</b>					
Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad field of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.					
<b>Course Objective(s)</b>					
(1) By the end of this course, participants are expected to become able to understand how to identify gene(s) causing monogenic diseases, and uncover mechanism of diseases. (2) Participants are expected to learn how to identify genetic and environmental factors underlying polygenic diseases. (3) Participants are also expected to establish one's own view and position for related genomic fields such as pharmacogenomics and reproductive medicine.					
<b>Lecture Style</b>					
Lectures are given in a small group. Laboratory work is personalized.					
<b>Course Outline</b>					
Goals /outline					
By conducting research under a supervisor, students will obtain knowledge and skills of asking appropriate scientific questions, planning a series of experiments to answer the question, and conducting actual experiments using various experimental techniques.					
Students also learn how to present his/her data at scientific meetings and how to write scientific papers.					
<b>Grading System</b>					
Progress reports and the final research paper					
<b>Prerequisite Reading</b>					
Genomic Medicine					
<b>Reference Materials</b>					
Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社					
<b>Important Course Requirements</b>					
Knowledge of genetics, human genetics, molecular biology is required. It is advisable that participants have basic knowledge of Internal Medicine and Surgery of undergraduate level.					
<b>Note(s) to Students</b>					
none					

<b>Lecture No</b>	041468				
<b>Subject title</b>	Lecture of Organogenesis and Neogenesis	<b>Subject ID</b>			
<b>Instructors</b>	TAKEBE TAKANORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st - year	<b>Units</b>	6
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Lecture place</b>					
Check with Lab instructors before taking the course, as class room will vary by program.					
<b>Course Purpose and Outline</b>					
To acquire following the ability to perform unique one-of-a-kind research and create new research concepts with an international perspective and a challenging spirit;					
<ul style="list-style-type: none"> <li>• Learn a wide range of knowledge and experimental methods in molecular biology, cell biology, developmental biology, immunology, and stem cell biology, and understand the fundamentals of organ development processes and the pathogenesis of diseases,</li> <li>• Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and</li> <li>• Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.</li> </ul>					
<b>Course Objective(s)</b>					
To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;					
<ul style="list-style-type: none"> <li>• Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.</li> <li>• Understand and discuss both the conventional and the latest knowledge on the relationship between organ development and the onset of diseases such as immune / inflammatory diseases and metabolic disorders.</li> </ul>					
<b>Lecture Style</b>					
Seminar class					
<b>Course Outline</b>					
<ul style="list-style-type: none"> <li>• Read highly original and mature research papers, and discuss interpretations and issues via focusing on fields related to human biology</li> <li>• Learn about data analysis, simulation of considerations, research strategies, extraction of issues in practical application, and how to identify/solve problems for industrialization of regenerative medicine and drug discovery.</li> </ul>					
Program available:					
<ul style="list-style-type: none"> <li>• Journal club: At any time (We will share date and time with students via email)</li> <li>• Special lecture: To be held once a year</li> </ul>					
<b>Grading System</b>					
Grading will be comprehensively judged by taking all activities of the students into account such as quality of discussion, attitude and willingness.					
<b>Prerequisite Reading</b>					
Read the following books to acquire basic knowledge in advance.					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>• Molecular Biology of the Cell (Garland Science)</li> <li>• Developmental Biology (Sinauer Associates)</li> </ul>					
<b>Important Course Requirements</b>					
Applicants should consult with Lab instructors in advance and obtain their consent. This program places a high priority on self-motivated individuals to develop researchers who can set issues and solve problems by themselves, and looks for students with a challenging spirit that can create new concepts with unconventional sense and principles.					
<b>Note(s) to Students</b> A few students available.					
<b>Email</b> ttakebe.ior@tmd.ac.jp					
<b>Instructor's Contact Information</b> Weekday, 9:00-17:00 Building 8th South 4F, Takebe laboratory					

<b>Lecture No</b>	041469				
<b>Subject title</b>	Practice of Organogenesis and Neogenesis	<b>Subject ID</b>			
<b>Instructors</b>	TAKEBE TAKANORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	1st – 2nd year	<b>Units</b>	4
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
To acquire following the ability to perform unique one-of-a-kind research and create new research concepts with an international perspective and a challenging spirit;					
<ul style="list-style-type: none"> <li>•Learn a wide range of knowledge and experimental methods in molecular biology, cell biology, developmental biology, immunology, and stem cell biology, and understand the fundamentals of organ development processes and the pathogenesis of diseases,</li> <li>•Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and</li> <li>•Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.</li> </ul>					
<b>Course Objective(s)</b>					
To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;					
<ul style="list-style-type: none"> <li>•Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.</li> <li>•Understand and discuss both the conventional and the latest knowledge on the relationship between organ development and the onset of diseases such as immune / inflammatory diseases and metabolic disorders.</li> </ul>					
<b>Lecture Style</b>					
Seminar class					
<b>Course Outline</b>					
<ul style="list-style-type: none"> <li>•Discuss data obtained and results for each research to be able to plan and execute research, submit papers and make presentations at academic conferences by yourself.</li> </ul>					
Program available:					
<ul style="list-style-type: none"> <li>•Research meeting: Monday 9:00am~10:00am (If date and time is changed, we will email to students)</li> </ul>					
<b>Grading System</b>					
Grading will be comprehensively judged by taking all activities of the students into account such as quality of discussion, attitude, willingness and understanding of discussion as well as sincer approach to daily research.					
<b>Prerequisite Reading</b>					
Read the following books to acquire basic knowledge in advance.					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>•Molecular Biology of the Cell (Garland Science)</li> <li>•Developmental Biology (Sinauer Associates)</li> </ul>					
<b>Important Course Requirements</b>					
Applicants should consult with Lab instructors in advance and obtain their consent. This program places a high priority on self-motivated individuals to develop researchers who can set issues and solve problems by themselves, and looks for students with a challenging spirit that can create new concepts with unconventional sense and principles.					
<b>Note(s) to Students</b>					
A few students available.					
<b>Email</b> ttakebe.ior@tmd.ac.jp					
<b>Instructor's Contact Information</b>					
Weekday, 9:00–17:00 Building 8th South 4F, Takebe laboratory					

<b>Lecture No</b>	041470				
<b>Subject title</b>	Laboratory practice of Organogenesis and Neogenesis	<b>Subject ID</b>			
<b>Instructors</b>	TAKEBE TAKANORI				
<b>Semester</b>	YearLong 2020	<b>Level</b>	2nd – 3rd year	<b>Units</b>	8
<b>Course by the instructor with practical experiences</b>					
When an international student registers this subject for credits, this course is taught in English.					
<b>Course Purpose and Outline</b>					
To acquire following the ability to perform unique one-of-a-kind research and create new research concepts with an international perspective and a challenging spirit;					
<ul style="list-style-type: none"> <li>•Learn a wide range of knowledge and experimental methods in molecular biology, cell biology, developmental biology, immunology, and stem cell biology, and understand the fundamentals of organ development processes and the pathogenesis of diseases,</li> <li>•Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and</li> <li>•Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.</li> </ul>					
<b>Course Objective(s)</b>					
To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;					
<ul style="list-style-type: none"> <li>•Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.</li> <li>•Understand and discuss both the conventional and the latest knowledge on the relationship between organ development and the onset of diseases such as immune / inflammatory diseases and metabolic disorders.</li> </ul>					
<b>Lecture Style</b>					
Individual teaching					
<b>Course Outline</b>					
<ul style="list-style-type: none"> <li>•Analyze the mechanism of maintaining undifferentiated capacity, the differentiation mechanism, the organ development process and the disease development process both in vitro and in vivo by utilizing human pluripotent stem cells and embryonic stem cells,</li> <li>•Acquire experimental techniques, planning research, analyzing and discussing data mainly for liver organoid systems.</li> </ul>					
*It is strongly recommended that research should be conducted autonomously.					
Program available:					
•Individual training via participating in research: At any time					
<b>Grading System</b>					
Grading will be comprehensively judged by taking all activities of the students into account such as quality of discussion, attitude, willingness and understanding of discussion as well as sincer approach to daily research.					
<b>Prerequisite Reading</b>					
Read the following books to acquire basic knowledge in advance.					
<b>Reference Materials</b>					
<ul style="list-style-type: none"> <li>•Molecular Biology of the Cell (Garland Science)</li> <li>•Developmental Biology (Sinauer Associates)</li> </ul>					
<b>Important Course Requirements</b>					
Applicants should consult with Lab instructors in advance and obtain their consent. This program places a high priority on self-motivated individuals to develop researchers who can set issues and solve problems by themselves, and looks for students with a challenging spirit that can create new concepts with unconventional sense and principles.					
<b>Note(s) to Students</b>					
A few students available.					
<b>Email</b> ttakebe.ior@tmd.ac.jp					
<b>Instructor's Contact Information</b> Weekday, 9:00–17:00 Building 8th South 4F, Takebe laboratory					

## Information for Students

### 1) Contact and Notification

Notifications and other information are posted on university bulletin boards or the TMDU website (Click on the tab for “Current Students” or “Schools/Graduate Schools”).

When emergency measures for natural or weather-related disasters such as typhoons are taken, causing the full suspension of public transportation services, lectures and examinations may be canceled or rescheduled. Notifications of such will be announced on the TMDU website (Click on the tab for “Schools / Graduate Schools-News & Events”).

Bulletin boards are located in front of Bldg. 6, in front of the Educational Planning Section on the 1<sup>st</sup> floor of Bldg. 1 and in front of the Student Support Section on the 3<sup>rd</sup> floor of Bldg. 5. Please check these boards regularly.

When necessary, students will be contacted individually on the phone, via email or by mail. If your address or phone number changes, please update your contact information with the Educational Planning Section.

### 2) Student ID Card

Your student ID card serves as proof of student status and as a nametag. It is also an IC card and will enable you to unlock some school entrances and register your attendance for classes. Please be careful not to damage or lose it.

Additionally, please carry your student ID card with you at all times. You may also be asked to show it when you buy a commuter pass.

#### (1) Reissuance

Students should promptly notify the Educational Planning Section if their ID card has been lost or damaged, and complete the procedures to have the card reissued. Please note that a fee will be charged for reissuance.

#### (2) Return of card

Students should promptly return their ID card to the Educational Planning Section upon graduation, withdrawal or expulsion, or when the card expires. Please note that if the card has been lost and cannot be returned, a fee will be charged equal to that of reissuance.

#### (3) Updating the period of validity

If your enrollment period has been extended and your student ID card has expired, please visit the Educational Planning Section to update your card.

(TEL: 03-5803-5074)

### 3) Certificates

Some certificates and other official documents are issued by the Educational Planning Section, while others may be obtained from automatic document issuing machines.

Place	Items	Service hours	Office
Document vending machine Bldg. 5, 4 <sup>th</sup> floor Student Lounge	Certificate of Enrollment (Japanese)	8:30-21:00 (Student ID card is required.)	Thesis and Dissertation Team, Educational Planning Section TEL : 5803-5074
	Student Discount Card for JR		
Educational Planning Section* Bldg. 1, 1 <sup>st</sup> floor	Certificate of Enrollment (English)	8:30-17:15	Graduate Education Team 1 or 2, Educational Planning Section TEL : 5803-4676 · 4534
	Transcript (Japanese/English)		
	Certificate of Expected Graduation <Master's Program> (Japanese/English)		
	Other certificates (Japanese/English)		
Educational Planning Section* Bldg. 1, 1 <sup>st</sup> floor Educational Planning Section* Bldg. 1, 1 <sup>st</sup> floor	Certificate of Expected Graduation <Doctoral Program> (Japanese/English)	8:30-17:15	Thesis and Dissertation Team, Educational Planning Section TEL : 5803-5074

\*Certificates issued by the Educational Planning Section

Please visit the Educational Planning Section and submit the relevant application form at the counter. It may take a few days to issue a Japanese certificate and about a week for an English certificate.

\*Certificates for those who have already completed a course are also issued by the Educational Planning Section. Available certificates are: Certificate of Awarded Diploma, Transcript, Certificate of Past Enrollment, and Certificate of Degree.

#### How to apply for a certificate by mail

If you need to apply for a certificate that is not available from the document vending machines, you can send the application form by mail to the following address. Please send the application form along with a self-addressed envelope with a 120-yen stamp affixed. The envelope should be at least 240×332 mm in size so that an A4 size document can be inserted without folding.



#### Address

Educational Planning Section, Tokyo Medical and Dental University  
1-5-45 Yushima, Bunkyo-ku, Tokyo  
Postal code: 113-8510

#### **4) Student Discount Card for JR**

- (1) Students can get a 20% discount on JR Line tickets for travel that exceeds 100 kilometers one way. The purpose of this service is to help ease students' financial burden and promote school education. You can use the Student Discount Card at JR for a maximum of 10 tickets per person per year, and the card is valid for 3 months.
- (2) Caution: Please do not use this service in an inappropriate or illegal manner.  
Do not:
  1. Buy a discounted ticket by using the student ID card of another person.
  2. Give someone a ticket that you bought.
  3. Use an expired ticket.

If you commit any of these actions, you may be required to pay a penalty of twice the regular fare. Furthermore, this service for all students at TMDU may be suspended as a result.

- (3) The Student Discount Card for JR is available from the document vending machines in the Student Lounge in Bldg. 5, 4<sup>th</sup> floor.

Service hours: 8:30 a.m. to 9:00 p.m. on weekdays  
Office: Educational Planning Section (TEL: 03-5803-5074)

#### **5) Change of address/surname/ legal domicile/telephone number**

A student who changes his/her address, legal domicile, surname or telephone number must promptly notify Graduate Education Team 1 or 2 in the Educational Planning Section and follow the necessary procedures. A student who has a change in their guarantor's information must also do the same.

If you fail to inform the Educational Planning Section of any changes, the university may not be able to contact you in case of an emergency.

#### Office

Graduate Education Team 1 or 2 in Educational Planning Section (Bldg. 1, 1<sup>st</sup> floor)

**Notification form**

	Form	Necessary documents
Change of surname	Change of name form	Proof of name change
Change of address or legal domicile	Change of address or legal domicile form	Proof of change of address or legal domicile
Change of guarantor	Change of guarantor form	N/A

**6) Request for permission to attend external practical training**

If you would like to attend an external practical training course, you must submit the request form to the Graduate Education Team 1 or 2 in the Educational Planning Section two weeks before the start date. (If you would like to attend training abroad, you must submit your request two months before the start date.)

**7) Lost and found property**

Lost property found on the university campus is handled by the following offices.

- (1) Lost property found inside the building of the Faculty of Medicine:  
General Affairs Section, Administration Division, Faculty of Medicine  
(Bldg. 3, 6<sup>th</sup> floor, TEL: 5803-5096)
- (2) Lost property found inside the building of the Faculty of Dentistry:  
General Affairs Section, Administration Division, Faculty of Dentistry and  
Dental Hospital (Dental Bldg. South, 2<sup>nd</sup> floor, TEL: 03-5803-5406)
- (3) Lost property found in other places: Campus security and building safety  
offices.

**9) Health Service Center**

(Health Service Center: TEL 03-5803 - 5081, <http://www.tmd.ac.jp/hsc/index.html>)

The Health Service Center aims to help students and faculty members stay healthy so that they can pursue their activities effectively. TMDU staff and students visit the center to get counseling for physical or mental issues, physical examinations, and letters of introduction necessary to visit specialists.

(1) Health consultation and counseling for mental health

1. Health consultation is available from 10 a.m. to 12:30 p.m. and 1:30 p.m. to 3:30 p.m. on weekdays.
2. For information concerning which doctors are available, please check the Health Administration Center website.
3. You may consult with doctors or health consultants even after official consultation hours if they are still in the center.
4. You may also freely use the center's scales to measure your height and weight, or the blood pressure machine.

(2) Health checkup

All students are obliged to complete a health checkup. It is the student's responsibility to check the Health Administration Center website for the detailed schedule of examinations.

- |  |                   |
|--|-------------------|
| 1. Annual Health Checkup                                     | May               |
| 2. Detection of HBs Antigen                                  | April             |
| 3. Health Checkup for Radiation Workers                      | April and October |
| 4. Others: Immunization for Hepatitis B or Influenza bacilli |                   |

(3) Health certificate issuance

Health certificates can be issued when needed for taking a qualifying examination, applying for clinical training at a hospital, job hunting or entering a different school. Note that the certificate can only be issued to students who have taken the annual health checkup.

## 10) Student support

Support Center for Students and Female Staff:

[http://www.tmd.ac.jp/cmnm/stdc/index\\_en.html](http://www.tmd.ac.jp/cmnm/stdc/index_en.html))

The Support Center for Students and Female Staff assists students with managing their daily life such as schoolwork and career planning, provides counseling for mental health issues and harassment, and promotes other student support activities. The center also implements plans for supporting research activities and work-life balance for both female and male researchers and graduate students.

If you have problems in your daily life as a student, you can talk to a counselor. Based upon your needs, choose the appropriate contact number below.

<For matters related to student life>

TEL : 03-5803-4959

[http://www.tmd.ac.jp/cgi-bin/stdc/cms\\_reserv.cgi?lang=en](http://www.tmd.ac.jp/cgi-bin/stdc/cms_reserv.cgi?lang=en))

- Personal life: family, financial circumstances, relationship problems, etc.
- Schoolwork: progress in school, continued education, relationships with students or faculty
- Career planning: post-graduation decisions, job hunting
- Mental health: stress, unstable mental condition, interpersonal relationships
- Harassment: Academic dishonesty, power harassment, sexual harassment, etc.

<For matters related to student life or career support and work-life balance>

TEL: 03-5803-4921

(<http://www.tmd.ac.jp/ang/counsel/index.html>)

- Future career decisions and lifestyle
- Work-life balance and events such as pregnancy, childbirth and parenting
- Concerns about nursery schools or nursing care

☆Individual counseling: 10:30 a.m. to 5:00 p.m. on weekdays

Typically, you need to make a reservation for an individual counseling session. However, a counselor will try to respond to your request even when you do not have a reservation.

### 11) Graduate student lounge

Any graduate student can use the lounges located in M&D Tower on the 22<sup>nd</sup> and 14<sup>th</sup> floors.

<Available hours> 8:00 a.m. to 9:00 p.m.

<Notes>

1. Please keep the lounge tidy.
2. Please dispose of your garbage in your laboratory. Do not dispose of it in nearby classroom trashcans.
3. Please do not bother others. For example, avoid talking loudly, sleeping for too long, or bringing outside playthings to the lounge.
4. Please do not leave your belongings in the lounge.

### 12) Others

- (1) If you plan to receive personal mail, please tell the sender to include the name of your department in the address field.
- (2) TMDU imposes traffic restrictions on campus and commuting by car is prohibited. However, an exception may be made for students who have difficulty commuting to campus by train or bus.
- (3) Relevant Offices
  1. Academic affairs:  
Graduate Education Teams 1 and 2, Educational Planning Section (Bldg. 1, 1<sup>st</sup> floor, TEL 03-5803-4676, 4679, 4534)
  2. Payment of tuition:  
Financial Planning Section (Bldg. 1, 3<sup>rd</sup> floor, TEL 03-5803-5048)
  3. Scholarships and tuition exemption:  
Student Support Office (Bldg. 5, 3<sup>rd</sup> floor, TEL 5803-5077)

## Various procedures

You may retrieve all designated forms for TMDU necessary for each procedure from the Graduate Education Team 1 and Team 2 of the Educational Planning Section (Building 1 West, first floor) or the TMDU homepage.

TMDU Homepage (<http://www.tmd.ac.jp/index.html>) → Schools & Graduate Schools → Graduate School of Medical and Dental Sciences → Educational Planning Section → Various procedures

URL: [http://www.tmd.ac.jp/faculties/graduate\\_school/kyoumuka/index.html](http://www.tmd.ac.jp/faculties/graduate_school/kyoumuka/index.html)

### 1) Leave of absence

If you can not attend school for three months or more due to illness or other reasons, you can take a leave of absence or extend the leave period using the following procedures. A leave of absence may not exceed two years in total. Furthermore, a leave of absence shall not be included in the period of enrollment.

#### Submission/information window

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

#### Items to submit

-Request for leave of absence or Request for extension of the leave period (form designated by TMDU)

\*As a rule, the starting date will be at the beginning of the month.

\*You will be asked to submit a doctor's note if your absence is due to illness.

#### Submission deadline

Up until one month before the desired leave of absence date.

By 20<sup>th</sup> of two months before the starting date of leave of absence you desire.

### 2) Re-enrollment

If a student who is absent through leave of absence wishes to return to school during the period of the leave of absence or at the end of a leave of absence, the following procedures shall be carried out.

#### Submission/information window

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

#### Items to submit

-Request for re-enrollment (form designated by TMDU)

\*You will be asked to submit a doctor's note if your absence is due to illness. Additionally, an inspection from the Health Administration Center is required, so please inquire in advance.

#### Submission deadline

By 20<sup>th</sup> of two months before the date of re-enrollment you desire.

### 3) Withdrawal

The following procedures must be carried out in the event that you are unable to continue your studies due to illness or other reasons and you must withdraw as a result.

#### Submission/information window

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

#### Items to submit

-Request to withdraw (form designated by TMDU)

#### Submission deadline

By 20<sup>th</sup> of a month before the desired date of withdrawal.

**4) Commission  
research instruction**

If you wish to receive research guidance at another graduate school, research institute, or a high level hospital (hereinafter referred to as “other institution”), you must conduct the following procedures upon consulting with the other party in advance. Furthermore, the application period may not exceed the school year. You must reapply by the end of January in the event that you continue to take research instruction in the following year. Furthermore, the period in which a Master's course student can commission research instruction is up to one year.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

Application to commission research instruction (form designated by TMDU)

\*As a rule, the start date will be the first of the month.

\*As a rule, the starting date will be at the beginning of the month.

**Submission deadline**

By 20<sup>th</sup> of three months before the starting date of commission research instruction you desire

\*Application for commuter pass for practical training accompanying commission research instruction

If you attend other institution after the application for the commission research instruction is accepted, you may purchase a commuter pass for internships by applying.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

Application for commuter pass for internships (form designated by TMDU)

**Submission deadline**

By 20<sup>th</sup> of two months beforehand (It will take about one month to obtain permission from the railway company.)

**5) Study abroad**

In the case of studying in a foreign graduate school or equivalent higher education institution, the following procedures must be carried out upon consulting with the other party beforehand.

Please make sure to inquire beforehand, as there is a limit on when you may study abroad.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

-Request to study abroad (form designated by TMDU)

-Written statement of reasons from instructor (free formatting)

-Documents such as the acceptance letter of the other party, etc. (copy)

-Japanese translations of documents such as the acceptance letter of the other party, etc.

-Guarantee of length of stay

**Submission deadline**

By 20<sup>th</sup> of two months before the starting date of study abroad you desire

[To change the period of study abroad]

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

- Request to change study abroad period (form designated by TMDU)
- Documents pertaining to the study abroad period (copy)
- Study abroad permission slip (copy)

**Submission deadline**

By 20<sup>th</sup> of two months before the desired date to change the new study abroad period

**6) Extend enrollment period**

Students who intend to attend school (excluding a period of leave of absence) beyond the standard study period shall carry out the following procedure. Students may extend their enrollment period for twice the standard term of study (see table below).

Graduate School	Program	Track	Years
Medical and Dental Sciences	Master's course	Medical and Dental Science and Technology Track (excluding medical care management courses)	4 years
		Medical care management course	2 years
	Doctoral Program	Medical and Dental Sciences Track	8 years
		Life Science and Technology Track	6 years
Health Care Sciences	Doctoral program (first semester)	Nursing Innovation Science Track Biomedical Laboratory Sciences Track	4 years
	Doctoral program (second semester)	Nursing Innovation Science Track Biomedical Laboratory Sciences Track	6 years
	Consecutive doctoral program	Nursing Innovation Science Track Cooperative Doctoral Course in Disaster Nursing Track	10 years

Please note, leave of absences are not included in the enrollment period.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

- Request for extension of enrollment period (form designated by TMDU)

**Submission deadline**

- By 20<sup>th</sup> of two months before the completion of the enrollment period

**7) Change major department**

If you wish to change the research department to which you belong for reasons such as a change in your research content during your enrollment period, the following must be carried out.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

-Request for change of track (form designated by TMDU)

**Submission deadline**

By 20<sup>th</sup> of two months before the desired date of change

**8) Change of course of study**

In the case of employment during the enrollment period, or if you enrolled in an adult graduate school course that ceases to exist, the following must be carried out.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

-Request to change course of study (form designated by TMDU)

\*If you wish to change from a “general course” to an “adult graduate school course”, please also attach the following.

-Employer approval (form designated by TMDU)

-Written statement of reasons for instructor change (free formatting)

**Submission deadline**

By 20<sup>th</sup> of two months before the desired date of change

**9) Transfer**

If you take an transfer examination to transfer to another institution, you must perform the following.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

Request for transfer examination consent form (form designated by TMDU)

**Submission deadline**

By 20<sup>th</sup> of three months before the testing date

If you pass your transfer examination, you must carry out the following.

**Items to submit**

-Request to transfer (form designated by TMDU)

-A copy of your passing results

**Submission deadline**

By 20<sup>th</sup> of two months before your transfer

**10) Death**

In the event that the student passes away, please have a guarantor carry out the following as soon as possible.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Items to submit**

-Notification of death (form designated by TMDU)



**11) Cancelling a course**

If you wish to cancel a course that you have already registered for you must carry out the following.

**Submission/information window**

Educational Planning Section for Graduate Education Team 1 & 2 (Building 1 West, first floor)

**Forms to submit**

-Request for Cancelling a Registered Subject (form designated by TMDU)

**Submission deadline**

-Students placed in Doctoral Program of Medical and Dental Sciences Track

Up until May 31st for first semester courses

Up until November 30th for second semester courses, full year courses, and multiple year courses

Within the course period for intensive lectures

[Notes]

All the above procedures are matters to be discussed by the graduate school promotion committee, with the exception of “cancellation of course”, **so we enforce a strict deadline**. Submissions after the deadline will be permitted after a desired date.

The graduate school promotion committee will not be held in August, students who wish to start in September should give notification one month before the submission deadline.

### Major facilities

Facility name	Location	Extension number
International Exchange Section	Bldg. 1, 4F	4076
Student Support Section	Bldg. 5, 3F	5077
Educational Planning Section	Bldg. 1, 1F	5074 (Thesis and Dissertation Team) 4676,4679,4534 (Graduate Education Team 1, 2)
Admission Section	Bldg. 1, 1F	4924
Financial Planning Section	Bldg. 1, 3F	5042
Library	M&D Tower, 3F	5592
Health Administration Center	Bldg. 5, 2F	5081
Student Lounge (Certificate Vending Machine)	Bldg. 5, 4F	—
University Co-op Cafeteria and shop	Bldg. 5, 1F, B1F	—
Research Core Center	Bldg. 8, North, South	5788

# Campus/Access Map

