Doctoral Program

Graduate School of Medical and Dental Sciences

Syllabus

2023

Tokyo Medical and Dental University

Doctoral Program：Medical and Dental Sciences

Index

Subject		Page
初期研究研修	Initial Research Training	1
Initial Research Training	Initial Research Training	3
医歯学総合特論（大学院セミナー）	Special Lecture of Global Medical and Dental Study	5
医歯学先端研究特論（大学院特別講義）	Special Lecture of Advanced Medical and Dental Study	6
医歯学総合研究科コース特論	Basic-Clinical Borderless Education	7
包括臨床演習	Comprehensive dental clinical practice	8
Essential Expertise for Clinical Dentistry（EECD）	Essential Expertise for Clinical Dentistry （EECD）	9
疾患予防パブリックヘルス医学概論	Overview of Public Health Medicine in Disease Prevention	11
マネジメント特論	Management	12
国際動向特論	Global Trends	13
知的財産特論	Intellectual Property	14
英語ディベート特論	English Conversation and Debate	15
英語プレゼンテーション特論	Presentation in English	17
疾患生命科学特論	Biomedical Science	20
先端機能分子特論	Advanced Biofunctional Molecules	22
機能分子開発技術特論	Development of Functional Molecules	23
組織再生材料学特論	Tissue Regenerative Bioceramic Materials Science	24
生体機能材料学特論	Organic Biomaterials Science	26
医用材料工学特論	Medical Materials Engineering	27
生体情報数理解析論	Mathematical and numerical methods for biomedical information analysis	28
理研生体分子制御学特論	RIKEN Molecular and Chemical Somatology	30
先端口腔保健応用学特論	Special Lectures for Advanced Oral Healthcare Sciences	32
先端口腔保健応用学演習	Advanced Oral Healthcare Sciences	34
先端口腔保健工学特論	Advanced Oral Health Engineering	37
硬組織研究・骨形態計測学特論	Advanced Bone Histomorphometry in the Hard Tissue Research	39
実践疫学	Epidemiology Ⅱ	40
アドバンス生物統計学	Biostatisitcs Ⅱ	42
公衆衛生のための医学・生物学	Public Health Biology	44
医療システム・マネジメント	Health System and Management	48
プラネタリーヘルス	Planetary Health	52
グローバルヘルス	Global Health	54
行動科学	Behavioral Sciences	57
環境保健	Environmental Health	59
先制医歯理工学概論Ⅰ	Integrative Biomedical Sciences for Preemptive Medicine I	62
先制医歯理工学概論Ⅰ（英語）	Integrative Biomedical Sciences for Preemptive Medicine I	64
先制医歯理工学概論Ⅱ	Integrative Biomedical Sciences for Preemptive Medicine Ⅱ	66
データサイエンス特論Ⅰ	Data Science I	67
データサイエンス特論Ⅰ（英語）	Data Science I	68
データサイエンス特論Ⅱ	Data Science II	69
データサイエンス特論Ⅱ（英語）	Data Science II	70
データサイエンス特論Ⅲ	Data Science Ⅲ	73
データサイエンス特論Ⅳ	Data Science Ⅳ	74
疫学	Epidemiology	75
臨床・遺伝統計学	Clinical Biostatistics and Statistical Genetics	76
先端バイオセンシングデバイス特論	Advanced Biosensing Devices	78
医療デバイス・システム機器特論	Advanced Medical Device and System	80
ウエアラブルIoT技術特論	Wearable & IoT Devices and Applications	82
疾患分子病態学特論	Molecular Pathophysiology	84
先端ケミカルバイオロジー特論	Advanced Chemical Biology	85
生体分子制御学特論	Molecular and Chemical Somatology	86
疫学基礎	Epidemiology: Basic	87
生物統計学基礎	Biostatistics: Basic	88
生物統計学応用Ⅰ	Biostatistics: Advanced I	89
生物統計学応用Ⅱ	Biostatistics: Advanced II	90
臨床試験方法論基礎	Clinical Trial Methodology: Basic	91
臨床試験方法論応用	Clinical Trial Methodology: Advanced	92
口腔疫学基礎	Oral epidemiology: Basic	93
疫学応用	Epidemiology: Adcanced	94

No.	Department		Page
1	口腔病理学	Oral Pathology	95
2	細菌感染制御学	Bacterial Pathogenesis	98
3	分子免疫学	Molecular Immunology	101
4	先端材料評価学	Advanced Biomaterials	104
5	歯科放射線診断・治療学	Dental Radiology and Radiation Oncology	107
6	顎口腔腫瘍外科学	Oral and Maxillofacial Surgical Oncology	110
7	歯科麻酔・口腔顔面痛制御学	Dental Anesthesiology and Orofacial Pain Management	113
8	小児歯科学・障害者歯科学	Pediatric Dentistry / Spesial Needs Dentistry	116
9	咬合機能矯正学	Orthodontic Science	119
10	う蝕制御学	Cariology and Operative Dentistry	125
11	咬合機能健康科学	Masticatory Function and Health Science	128
12	歯髄生物学	Pulp Biology and Endodontics	131
13	生体補綴歯科学	Advanced Prosthodontics	134
14	口腔再生再建学	Regenerative and Reconstructive Dental Medicine	140
15	形成・再建外科学（形成・再建外科学担当）	Plastic and Reconstructive Surgery Ⅰ	143
16	形成・再建外科学（機能再建学担当）	Plastic and Reconstructive Surgery Ⅱ(Functional Reconstruction)	—
17	頭頸部外科学	Head and Neck Surgery	149
18	腫瘍放射線治療学	Radiation Therapeutics and Oncology	152
19	口腔顎顔面解剖学	Oral and Maxillofacial Anatomy	155
20	認知神経生物学	Cognitive Neurobiology	158
21	分子発生・口腔組織学	Molecular Craniofacial Embryology and Oral Histology	161
22	分子細胞機能学	Cellular Physiological Chemistry	164
23	顎顔面外科学	Maxillofacial Surgery	167
24	顎顔面矯正学	Maxillofacial Orthognathics	170
25	生体組織再建外科学	Microscopic Reconstructive Surgery	—
26	細胞生物学	Cell Biology	177
27	病態代謝解析学	Medical Biochemistry	180
28	運動器外科学	Joint Surgery and Sports Medicine	183
29	病態生化学	Biochemistry	186
30	分子情報伝達学	Cell Signaling	189
31	歯周病学（歯周病学担当）	Periodontology Ⅰ	192
32	歯周病学（歯周光線治療学担当）	Periodontology Ⅱ(Photoperiodontics)	198
33	生体情報継承学	Biosignals and Inheritance	202
34	無機生体材料学	Inorganic Biomaterials	205
35	公衆衛生学	Public Health	208

No.	Department		Page
36	国際健康推進医学	Global Health Promotion	—
37	寄生虫学・熱帯医学	Parasitology & Tropical Medicine	216
38	法医学	Forensic Medicine	219
39	政策科学	Health Care Management and Planning	222
40	分子疫学	Molecular Epidemiology	225
41	医療政策情報学	Health Policy and Informatics	228
42	先進倫理医科学	Life Sciences and Bioethics	231
43	法歯学	Forensic Dentistry	234
44	医療経済学	Health Care Economics	237
45	健康推進歯学	Oral Health Promotion	243
46	歯学教育システム評価学	Educational System in Dentistry	247
47	教育メディア開発学	Educational Media Development	253
48	保険医療管理学	Insured Medical Care Management	256
49	国際保健医療事業開発学	Global Health Entrepreneurship	259
50	臨床統計学	Clinical Biostatistics	265
51	感染症健康危機管理学	Infectious Disease Emergency Preparedness	268
52	リハビリテーション医学	Rehabilitation Medicine	271
53	高齢者歯科学	Gerodontology and Oral Rehabilitation	274
54	摂食嚥下リハビリテーション学	Dysphagia Rehabilitation	277
55	臨床検査医学	Laboratory Medicine	280
56	生体集中管理学	Intensive Care Medicine	283
57	薬物動態学	Pharmacokinetics and Pharmacodynamics	289
58	臨床医学教育開発学	Medical Education Research and Development	292
59	救急災害医学	Acute Critical Care and Disaster Medicine	295
60	臨床腫瘍学	Clinical Oncology	298
61	総合診療歯科学	General Dentistry	301
62	歯科心身医学	Psychosomatic Dentistry	307
63	先駆的医療人材育成	Professional Development in Health Sciences	310
64	総合診療医学	Family Medicine	316
65	統合臨床感染症学	Infectious Diseases	319
66	神経機能形態学	Neuroanatomy and Cellular Neurobiology	322
67	システム神経生理学	Systems Neurophysiology	325
68	分子神経科学	Molecular Neuroscience	331
69	神経病理学	Neuropathology	334
70	眼科学	Ophthalmology and Visual Science	337
71	耳鼻咽喉科学	Otorhinolaryngology	340
72	脳神経病態学	Neurology and Neurological Science	343
73	精神行動医科学（精神行動医科学担当）	Psychiatry and Behavioral Sciences Ⅰ	347
74	精神行動医科学（犯罪精神医学担当）	Psychiatry and Behavioral Sciences Ⅱ (Specialty of Forensic Mental Health)	350

No.	Department		Page
75	精神行動医科学(リエゾン精神医学-精神腫瘍学担当)	Psychiatry and Behavioral Sciences Ⅲ (Liaison Psychiatry and Psycho-Oncology Unit)	355
76	脳神経機能外科学	Neurosurgery	366
77	血管内治療学	Endovascular Surgery	369
78	NCNP脳機能病態学	NCNP Brain Physiology and Pathology	372
79	ウイルス制御学	Molecular Virology	375
80	免疫学	Immunology	378
81	生体防御学	Biodefense Research	381
82	病態細胞生物学	Pathological Cell Biology	384
83	脂質生物学	Lipid Biology	387
84	発生発達病態学	Pediatrics and Developmental Biology	391
85	膠原病・リウマチ内科学	Rheumatology	397
86	皮膚科学	Dermatology	400
87	NCCHD成育医学	NCCHD Child Health and Development	403
88	人体病理学	Human Pathology	406
89	細胞生理学	Physiology and Cell Biology	409
90	分子細胞循環器学	Molecular Cellular Cardiology	412
91	幹細胞制御学	Stem Cell Regulation	415
92	統合呼吸器病学	Respiratory Medicine	418
93	消化器病態学	Gastroenterology and Hepatology	421
94	総合外科学	Specialized Surgeries	424
95	循環制御内科学	Cardiovascular Medicine	427
96	心肺統御麻酔学Ⅰ	Anesthesiology Ⅰ	430
97	心肺統御麻酔学Ⅱ	Anesthesiology Ⅱ	433
98	心臓血管外科学	Cardiovascular Surgery	436
99	腎臓内科学	Nephrology	442
100	生殖機能協関学	Comprehensive Reproductive Medicine	445
101	腎泌尿器外科学	Urology	449
102	消化管外科学	Gastrointestinal Surgery	454
103	呼吸器外科学	Thoracic Surgery	458
104	都医学研疾患分子生物学	Igakuken Disease-oriented Molecular Biology	461
105	臨床解剖学	Clinical Anatomy	465
106	システム発生・再生医学	Systems BioMedicine	468
107	包括病理学	Comprehensive Pathology	471
108	分子腫瘍医学	Molecular Oncology	474
109	診断病理学	Surgical Pathology	477
110	疾患モデル動物解析学	Experimental Animal Model for Human Disease	480
111	シグナル遺伝子制御学	Signal Gene Regulation	483
112	先端計測開発医学	Biomedical Devices and Instrumentation	486
113	生命機能医学	Biofunction Research	492

No.	Department		Page
114	血液内科学	Hematology	495
115	分子内分泌代謝学	Molecular Endocrinology and Metabolism	498
116	肝胆膵外科学	Hepatobiliary and Pancreatic Surgery	501
117	整形外科学	Orthopaedic and Spinal Surgery	504
118	画像診断・核医学	Diagnostic Radiology and Nuclear Medicine	507
119	ゲノム機能多様性	Genomic Function and Diversity	510
120	疾患多様性遺伝学	Human Genetics and Desease Diversity	513
121	応用再生医学	Applied Regenerative Medicine	516
122	計算システム生物学	Computational and Systems Biology	519
123	先端バイオマテリアル	Frontier Biomaterials	522
124	JFCR腫瘍制御学	JFCR Cancer Biology	525
125	ゲノム健康医療学	Personalized Genomic Medicine for Health	528
126	器官発生・創生学	Organogenesis and Neogenesis	531
127	統合データ科学	Integrated Data Science	534
128	生物統計学	Biostatistics	537
129	AIシステム医科学	Artificial Intelligence and Systems Medicine	540

	Page
・Information for Students	543
・Various procedures	549
・Major facilities	554
・Campus/Access Map	555

Lecture No	041001				
Subject title	Initial Research Training			**Subject ID**	
Instructors					
Semester	Spring 2023	**Level**		**Units**	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

For those who want to register this subject, please let us know by Thursday, April 7.

https://forms.office.com/Pages/ResponsePage.aspx?id=IbgL9w4edUa-MyJ2PTalPXan4S81oTVMv6r4VDGRTfhUODJUUkIDRFgzSVVNVFlONlkxMN1NGN1ZIUSQlQCN0PWcu

or

https://forms.office.com/r/Kdm76MJznC

Course Purpose and Outline

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives・Learning methods・Instructions
1	4/12	10:00-11:00		信頼ある研究の進め方	TAGA TETSUYA	ZOOM 講義
2	4/12	11:15-12:15		研究における統計	TAKAHASHI Kunihiko	ZOOM 講義
3	4/12	13:30-14:30		RI 及び放射線の利用と取扱い	NISHINA HIROSHI	ZOOM 講義
4	4/12	14:45-15:45		文献検索・図書館の利用	KINOSHITA ATSUHIRO	ZOOM 講義
5	4/12	16:00-17:00		APRIN e ラーニングプログラム（CITI Japan）	EBANA YUSUKE	ZOOM 講義
6	4/13	08:45-09:45		研究に必要となる環境安全管理	TAMAMURA HIROKAZU	ZOOM 講義
7	4/13	10:00-11:00		診療活動における感染制御の理論と実際	GU Yoshiaki	ZOOM 講義
8	4/13	11:15-12:15		研究発表・論文作成	David Cannell	ZOOM 講義
9	4/13	13:30-14:30		産学連携	IIDA KAORI	ZOOM 講義
10	4/13	14:45-15:45		バイオバンク事業と疾患研究	TAKEMOTO AKIRA	ZOOM 講義
11	4/14	10:00-11:00		バイオセーフティーと微生物実験法の基本	SUZUKI TOSHIHIKO	ZOOM 講義
12	4/14	11:15-12:15		動物実験の進め方	KANAI MASAMI	ZOOM 講義

13	4/14	13:30-14:30		遺伝子研究法	TANAKA TOSHIHIRO	ZOOM 講義	
14	4/14	14:45-15:45		研究者の倫理	ISEKI SACHIKO	ZOOM 講義	
15	4/14	16:00-17:00	その他	生命倫理	YOSHIDA MASAYUKI	ZOOM 講義	

Grading System

Attendance (more than 50%), and achievement of assignments given in the course (less than 50%).

Prerequisite Reading

Important Course Requirements

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). For those who want to register this subject, please let us know by Thursday, April 7.

Lecture No	041002				
Subject title	Initial Research Training			**Subject ID**	
Instructors					
Semester	Spring 2023	**Level**		**Units**	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.For those who want to register this subject, please let us know by Thursday, April 7.

https://forms.office.com/Pages/ResponsePage.aspx?id=IbgL9w4edUa-MyJ2PTalPXan4S81oTVMv6r4VDGRTfhUODJUUkIDRFgzSVVNVFlONlkxMN1NGN1ZIUSQlQCN0PWcu

or

https://forms.office.com/r/Kdm76MJznC

Course Purpose and Outline

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives・Learning methods・Instructions
1	4/12	10:00-11:00		Statistical method in designing medical research	TAKAHASHI Kunihiko	ZOOM 講義
2	4/12	11:15-12:15		How to make scientific researches reliable and successful	TAGA TETSUYA	ZOOM 講義
3	4/12	13:30-14:30		APRIN e-learning program（CITI Japan）	EBANA YUSUKE	ZOOM 講義
4	4/12	14:45-15:45		Use and Handling of Radioisotopes and Radiations	NISHINA HIROSHI	ZOOM 講義
5	4/12	16:00-17:00		Literature search・Utilization of library	KINOSHITA ATSUHIRO	ZOOM 講義
6	4/13	10:00-11:00		Thesis Writing and Presenting Research	David Cannell	ZOOM 講義
7	4/13	11:15-12:15		Theory and practice of infection prevention and control	GU Yoshiaki	ZOOM 講義
8	4/13	13:30-14:30		TMDU Bioresource Research Center and Biobank Project on the implementation of	TANAKA TOSHIHIRO	ZOOM 講義

				precision medicine		
9	4/13	14:45–15:45		Environment and safety in research	TAMAMURA HIROKAZU	ZOOM 講義
10	4/13	16:00–17:00		Industry–University Cooperation	IIDA KAORI	ZOOM 講義
11	4/14	10:00–11:00		The Design of Animal Experiments	KANAI MASAMI	ZOOM 講義
12	4/14	11:15–12:15		Biosafety and basic microbiological techniques	SUZUKI TOSHIHIKO	ZOOM 講義
13	4/14	13:30–14:30		Ethics of Researcher	ISEKI SACHIKO	ZOOM 講義
14	4/14	14:45–15:45		Study of Functional gene and genome	TANAKA TOSHIHIRO	ZOOM 講義
15	4/14	16:00–17:00		Bioethics	YOSHIDA MASAYUKI	ZOOM 講義

Grading System

Attendance (more than 50%), and achievement of assignments given in the course (less than 50%).

Prerequisite Reading

Important Course Requirements

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 know by Thursday, April 7.

Lecture No	041003				
Subject title	Special Lecture of Global Medical and Dental Study			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**		**Units**	2
Course by the instructor with practical experiences					
Partial classes are taught in English					
Prerequisite Reading					

Lecture No	041004				
Subject title	Special Lecture of Advanced Medical and Dental Study			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**		**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English					
Prerequisite Reading					

Lecture No	041005				
Subject title	Basic-Clinical Borderless Education			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 3rd year	**Units**	6
Course by the instructor with practical experiences					

一部英語で行う/Partial classes are taught in English

Lecture place

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.

Course Purpose and Outline

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.

Lecture Style

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.

Course Outline

http://www.tmd.ac.jp/archive-tmdu/gakumukikaku/Borderless.pdf

Grading System

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.

Prerequisite Reading

Note(s) to Students

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.

Lecture No	041006				
Subject title	Comprehensive dental clinical practice			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 4th year	**Units**	8
Course by the instructor with practical experiences					
Prerequisite Reading					

Lecture No	416001				
Subject title	Essential Expertise for Clinical Dentistry (EECD)			Subject ID	
Instructors	木下 淳博, 金澤 学, 隅田 由香, 駒田 亘, 水谷 幸嗣, 關 奈央子, 駒ヶ嶺 友梨子, 米満 郁男, 畑山 貴志, 服部 麻里子, 原口 美穂子, 村瀬 舞, 田澤 建人[KINOSHITA Atsuhiro, MORIO Ikuko, KANAZAWA Manabu, SUMITA Yuka, KOMADA Wataru, MIZUTANI Koji, SEKI Naoko, KOMAGAMINE Yuriko, YONEMITSU Ikuo, HATAYAMA Takashi, HATTORI Mariko, HARAGUCHI Mihoko, MURASE Mai, TAZAWA Kento]				
Semester	YearLong 2023	Level	1st – 4th year	Units	1
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Building #7 3/5floor pre-clinical training rooms

Course Purpose and Outline

This course offers you up-to-date dental clinical knowledge and techniques that are often publicized in journals or books. Experts in various fields will provide hands-on sessions.

This course aims at not only 1) updating participants' dental knowledge but also 2) developing and brushing up clinical techniques. You will have the chance to actually engage in discussions with your peers and join hands-on clinical focused sessions.

Course Objective(s)

In this course, you will:

- Learn dental knowledge through interactive lectures and discussion.
- Practice clinical techniques and skills in the hands-on sessions.

After this course, you will be able to:

- Have dental knowledge and new approaches for future treatments.
- Consider your clinical cases from a critical perspective.
- Use skills for clinical procedures.

Lecture plan

No	Date	Time	Room	Theme	Staff
1	8/21	16:30-19:30	5F ノイシュタッドジャパンルーム	Periodontology	MIZUTANI Koji, YANO Kosei
2	8/22	16:00-19:00	3F 補綴実習室	Complete denture prosthodontics	KANAZAWA Manabu, KOMAGAMINE Yuriko
3	8/23	16:00-19:00	5F ノイシュタッドジャパンルーム	Hand instrumentation techniques and management of ledge formation	TAZAWA Kento
4	8/24	16:00-19:00	5F ノイシュタッドジャパンルーム	Maxillofacial prosthetics	SUMITA Yuka, HATTORI Mariko, HARAGUCHI Mihoko, MURASE Mai
5	8/25	16:00-19:00	5F ノイシュタッドジャパンルーム	Direct composite restoration with a digital workflow	HATAYAMA Takashi ,HOSAKA Keiichi
6	12/12	16:00-19:00	3F 補綴実習室	Assessment of the oral function	KOMAGAMINE Yuriko, KANAZAWA Manabu
7	12/13	16:00-19:00	5F ノイシュタッドジャパンルーム	Fixed prosthodontics	KOMADA Wataru
8	12/14	16:00-19:00	5F ノイシュタッドジャパンルーム	Periodontology	MIZUTANI Koji, YANO Kosei
9	12/15	16:00-19:00	5F ノイシュタッドジャパンルーム	Orthodontics	YONEMITSU Ikuo
10	12/18	16:00-19:00	5F ノイシュタッドジャパン	MI esthetic restorations	HATAYAMA Takashi

			ルーム		
11	12/20	18:30-20:00	遠隔授業(同期型)	Treatment Planning	KANAZAWA Manabu, KOMADA Wataru, MIZUTANI Koji, SEKI Naoko, KOMAGAMINE Yuriko, YONEMITSU Ikuo, HATAYAMA Takashi, HOSAKA Keiichi, YANO Kosei

Lecture Style

Practice(hands-on) sessions.

Grading System

Combination of participation in discussion/case-study and performance in hands-on.

Prerequisite Reading

Designated parts in the textbook or literature, if any (informed).

Reference Materials

Instructor will provide the materials, if any.

Important Course Requirements

・Only those who have graduated from dental school can take this course. ・Only those who can participate in all dates should register for the course.

Note(s) to Students

- Maximum enrollment for this course is 20-25.
- Only those who graduated from dental school can join this course.
- Kindly keep in mind, that because of enrollment limitation, there may be cases where we cannot accept your participation.

Lecture No	041007				
Subject title	Overview of Public Health Medicine in Disease Prevention			Subject ID	
Instructors	中村 桂子[NAKAMURA KEIKO]				
Semester	YearLong 2023	Level	1st – 3rd year	Units	2
Course by the instructor with practical experiences					

Lectures and all communications are in English.

Lecture place

The lecture classes will be conducted either in an onsite classroom at Ochanomizu Campus and/or 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 class on time.

Course Purpose and Outline

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.

Course Objective(s)

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 and apply the basic principles and methods of medical research to disease prevention
5) Describe the main ethical issues in international medical research
6) Describe cross-border health issues in relation to globalization
7) Describe history of medical research
8) Describe leadership in medical education and medical research

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/24	16:00-19:10	遠隔授業（同期型）	Implementation medical science in the context of global health	NAKAMURA KEIKO
2	11/9	08:50-12:00	遠隔授業（同期型）	Health promotion	MORITA AYAKO
3	11/21	16:00-19:10	遠隔授業（同期型）	Prevention and control of communicable disease	GU Yoshiaki
4	11/28	16:00-19:10	遠隔授業（同期型）	Prevention and control of tropical disease	ISHINO Tomoko
5	12/12	16:00-19:10	遠隔授業（同期型）	Prevention and control of non-communicable disease and implementation science	SEINO KAORUKO
6	12/19	16:00-19:10	遠隔授業（同期型）	Prevention and control of cancer	OKADA TAKUYA, ITO TAKASHI
7	1/16	16:00-19:10	遠隔授業（同期型）	History of Anatomy and Body donation	AKITA KEIICHI
8	1/23	16:00-19:10	遠隔授業（同期型）	Leadership	TAKADA KAZUKI

Lecture No	041008				
Subject title	Management			Subject ID	GC--c6331-L
Instructors	竹内 勝之, 板越 正彦, 今村 健, 吉野 宏志[TAKEUCHI Katsuyuki, ITAGOSHI Masahiko, IMAMURA Kenn, YOSHINO Hiroshi]				
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

Please check the course schedule.

Course Purpose and Outline

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.

Course Objective(s)

Students will understand the essence of management skills and acquire basic skills so that they apply it to daily medical and research activities.

Lecture Style

Lectures on the essence of management skills, and workshops for practical skills.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%) and discussion and attitude (30%).

Prerequisite Reading

None.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041010				
Subject title	Global Trends			Subject ID	GC--c6341-L
Instructors	竹内 勝之, 小野 雅司, 岡田 将誌, 宇賀神 敦, 白神 昇平, 中村 桂子, 久保田 宏[TAKEUCHI Katsuyuki, ONO Masaji, OKADA Masashi, UGAJIN Atsushi, Shohei Shirakami, NAKAMURA KEIKO, KUBOTA Hiroshi]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: Same classes are offered in English on different schedules.

Lecture place

Please check the course schedule.

Course Purpose and Outline

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 heath 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.

Course Objective(s)

The goal is that students enhance their expertise or acquire social understandings that are necessary to develop a new perspective.

Lecture Style

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.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%) and comments in discussions (30%).

Prerequisite Reading

None.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041012				
Subject title	Intellectual Property			Subject ID	GC--c6351-L
Instructors	竹内 勝之, 杉光 一成, 川瀬 真, 平井 佑希[TAKEUCHI Katsuyuki, SUGIMITSU Kazunari, KAWASE Makoto, HIRAI Yuki]				
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Please check the course schedule.

Course Purpose and Outline

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.

Course Objective(s)

The goal is that students acquire a basic knowledge of 'patents' and 'copyrights' and a set of basic skills of the patent search.

Lecture Style

Lectures on the basic knowledge of intellectual property, workshops, and case studies.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%), discussion and attitude (30%)

Prerequisite Reading

None.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041013				
Subject title	English Conversation and Debate			Subject ID	GC--c6400-L
Instructors	JEANETTE DENNISSON[JEANETTE DENNISSON]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: Direction, class group work and all communications are in English.

Course Purpose and Outline

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.

Course Objective(s)

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) Leading a discussion in English

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	4/24	13:00-14:30	遠隔授業(同期型)	Overview of class/Group work & debate basics	JEANETTE DENNISSON
2	5/12	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
3	5/12	10:30-12:00	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
4	5/19	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
5	5/19	10:30-12:00	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
6	5/26	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
7	5/26	10:30-12:00	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
8	6/12	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
9	6/12	10:30-12:00	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
10	6/16	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
11	6/16	10:30-12:00	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
12	6/19	08:50-10:20	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON

Lecture Style

Pre-reading of weekly topic and viewing of online video

In-class group discussion/debate and listening exercises

Weekly short essay writing assignments

Grading System

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.

Prerequisite Reading

Reading materials will be provided by the instructor. 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.

Note(s) to Students Enrollment is limited to 15 students.

Email

dennisson.las@tmd.ac.jp

Instructor's Contact Information

Wednesday/Thursday 12:30 - 13:00 PM 管理研究棟3階

Lecture No	041013A				
Subject title	English Conversation and Debate			**Subject ID**	GC--c6400-L
Instructors	JEANETTE DENNISSON[JEANETTE DENNISSON]				
Semester	Fall 2023	**Level**	1st year	**Units**	1
Course by the instructor with practical experiences					

Availability in English: Direction, class group work and all communications are in English.

Course Purpose and Outline

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.

Course Objective(s)

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) Leading a discussion in English

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/17	13:00-14:30	遠隔授業(同期型)	Overview of class/Group work & debate basics	JEANETTE DENNISSON
2	10/24	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
3	11/7	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
4	11/14	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
5	11/21	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
6	11/28	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
7	12/5	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
8	12/12	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
9	1/9	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
10	1/16	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Writing	JEANETTE DENNISSON
11	1/23	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON
12	1/30	13:00-14:30	遠隔授業(同期型)	Discussion/Listening/Debate	JEANETTE DENNISSON

Lecture Style

Pre-reading of weekly topic and viewing of online video

In-class group discussion/debate and listening exercises

Weekly short essay writing assignments

Grading System

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.

Prerequisite Reading

Reading materials will be provided by the instructor. 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.

Note(s) to Students

Enrollment is limited to 15 students.

Email dennisson.las@tmd.ac.jp

Instructor's Contact Information

Wednesday/Thursday 12:30 – 13:00 PM 管理研究棟3階

Lecture No	041014				
Subject title	Presentation in English			Subject ID	GC--c6425-L
Instructors	伊藤 暢聡, JANELLE RENEE MOROSS, FARHA NAOMI OMAR F[ITO NOBUTOSHI, JANELLE RENEE MOROSS, OMAR Farouk. Farha N]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Direction, classwork and all communications will be in English.Instructor has basic Japanese skills if needed for communication.

Lecture place

Virtual meetings via Zoom: https://zoom.us/j/99322660520

Meeting ID: 993 2266 0520

Passcode: 812070

Course Purpose and Outline

・In the first four lessons you will learn the basic skills for creating and giving a presentation.

・Then, you must make four appointments from the available dates.

-For three of these appointments your instructor will help you to revise your presentation slides and script, practice delivery (gestures, intonation, pronunciation).

- In your fourth session, you will make your final presentation and answer Q & A.

Purpose

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.

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, research proposals or a review of someone else's research paper. In keeping relevant with changing times, students will learn to give an online presentation.

Through communication with the instructor, listening to other presentations and Q&A students will also improve their English communication skills.

Course Objective(s)

At the end of the course, students will have improved the following:

1) Knowledge of the necessary parts of a presentation

2) Creation of a presentation concerning their research, or research proposal

3) Ability to formulate questions and answers

4) Writing format and flow

Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives・Learning methods・Instructions
1	4/25	10:30-12:00	遠隔授業(同期型)	Overview/ Presentation Basics/ Goal Setting	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Lecture group via Zoom
2	5/2	10:30-12:00	遠隔授業(同期型)	Conceptualizing and Planning/ Script Writing	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Lecture group via Zoom
3	5/16	10:30-12:00	遠隔授業(同期型)	Basic Structure of Scientific Presentation	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Lecture group via Zoom
4	5/23	10:30-12:00	遠隔授業(同期型)	Effective and Professional Delivery	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Lecture group via Zoom

5	5/30	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Brainstorming, outline creation via Zoom
6	5/30	13:00-14:30	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Brainstorming, outline creation via Zoom
7	6/6	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Brainstorming, outline creation via Zoom
8	6/6	13:00-14:30	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Brainstorming, outline creation via Zoom
9	6/13	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Slide and script creation via Zoom
10	6/13	13:00-14:30	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Slide and script creation via Zoom
11	6/20	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Editing and practice via Zoom
12	6/20	13:00-14:30	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Editing and practice via Zoom
13	6/27	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Editing and practice via Zoom
14	6/27	13:00-14:30	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Editing and practice via Zoom
15	7/4	10:30-12:00	遠隔授業(同期型)	Individual Appointment with instructor	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Individual Appointment: Practice via Zoom
16	7/4	13:00-14:30	遠隔授業(同期型)	Final presentation/ Q&A/ feedback	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Final Presentation via Zoom
17	7/11	10:30-12:00	遠隔授業(同期型)	Final presentation/ Q&A/ feedback	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Final Presentation via Zoom
18	7/11	13:00-14:30	遠隔授業(同期型)	Final presentation/ Q&A/ feedback	JANELLE RENEE MOROSS, OMAR Farouk. Farha N	Final Presentation via Zoom

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 Rule

Participation (50%), presentation (50%)

Prerequisite Reading

You must have a research topic to make a presentation on. If you use another person's research, you must give that person credit and say that

you are doing a review of their work.
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 individual feedback from instructor(s). If you cannot make an appointment, you must notify the instructor and reschedule. —Plagiarism is a serious offence and will result in failure of the course.—
Note(s) to Students Please make an appt. with Janelle Moross via jmoross.isc@tmd.ac.jp
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/202304/GEnglish2023.html
Email JANELLE RENEE MOROSS:jmoross.isc@tmd.ac.jp
Instructor's Contact Information JANELLE RENEE MOROSS:If you would like to make an appointment, please send me an email.

Lecture No	041015				
Subject title	Biomedical Science			Subject ID	GC--c6426-L
Instructors	二階堂 愛, 笹川 洋平, 増富 健吉, 後藤 利保, 澁谷 浩司, 清水 幹容, 仁科 博史, 小藤 智史, 松田 憲之, 瀬川 勝盛, 山野 晃史[NIKAIDOU Itoshi, SASAGAWA Youhei, Kenkichi Masutomi, GOTO TOSHIYASU, SHIBUYA HIROSHI, SHIMIZU Masahiro, NISHINA HIROSHI, KOFUJI Satoshi, MATSUDA Noriyuki, SEGAWA Katsumori, YAMANO KOJI]				
Semester	YearLong 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online (Zoom) or on-demand video lecture

Course Purpose and Outline

Course purpose: The Bioscience Program offers lectures on several important topics in Molecular Biology, Genetics, Epigenetics, Bioinformatics, Developmental Biology and Engineering, Cell Biology and Biochemisty. 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.

Course Objective(s)

Understand useful and critical information from basic to the latest biological sciences and medicine.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/26	13:00-15:15	遠隔授業(非同期型)	Bioinformatics for single-cell omics data	NIKAIDOU Itoshi
2	6/2	13:00-15:15	遠隔授業(非同期型)	Single-cell omics sequencing	SASAGAWA Youhei
3	6/9	13:00-15:15	遠隔授業(同期型)	Intercellular Clearance System: Autophagy	YAMANO KOJI
4	6/16	13:00-15:15	遠隔授業(同期型)	Cellular signaling in development	SHIBUYA HIROSHI, GOTO TOSHIYASU
5	6/23	13:00-15:15	遠隔授業(同期型)	Telomere biology and carcinogenesis	Kenkichi Masutomi
6	6/30	13:00-15:15	遠隔授業(同期型)	Cellular signaling in diseases	SHIBUYA HIROSHI, SHIMIZU Masahiro
7	7/7	13:00-15:15	遠隔授業(同期型)	Molecular mechanisms of inhibition the development of hereditary Parkinson's disease	MATSUDA Noriyuki
8	7/14	13:00-15:15	遠隔授業(同期型)	Immune cells and cell death	SEGAWA Katsumori
9	8/25	13:00-15:15	遠隔授業(同期型)	Cancer metabolism	KOFUJI Satoshi
10	9/1	13:00-15:15	遠隔授業(同期型)	Liver formation and diseases	NISHINA HIROSHI

Lecture Style

Lecture by the lecturer, discussion with students, and writing reports.

Grading System

Attendance to lectures (80 %) and reports (20 %) are evaluated.

Prerequisite Reading

Instruct at first lecture if necessary.

Exam eligibility

More than 75% of attendance to the lectures

Reference Materials

Molecular cell biology／Harvey Lodish ... [et al.],Lodish, Harvey F.,:W.H. Freeman, 2016

Epigenetics／C. David Allis, Marie-Laure Caparros, Thomas Jenuwein, Danny Reinberg, editors ; Monika Lachner, associate editor,Allis, C. David,Caparros, Marie-Laure,Jenuwein, Thomas,Reinberg, Danny,Lachner, Monika,：Cold Spring Harbor Laboratory Press，2015

エッセンシャル免疫学／ピーター・パーラム著,Parham, Peter,笹月，健彦,：メディカル・サイエンス・インターナショナル，2016

ゲノム：生命情報システムとしての理解／T.A. ブラウン著,Brown, T. A. (Terence Austen),石川，冬木,中山，潤一,：メディカル・サイエンス・インターナショナル，2018

“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

Genome 4, Garland Science, 978-0815345084

Email

NIKAIDOU Itoshi:dritoshi@gmail.com

Instructor's Contact Information

NIKAIDOU Itoshi:AM.9:00-10:00, Every Monday at 2458, M&D tower (or Zoom)

Lecture No	041016				
Subject title	Advanced Biofunctional Molecules			Subject ID	GC--c6427-L
Instructors	影近 弘之, 細谷 孝充, 伊藤 暢聡, 藤井 晋也, 石田 良典, 沼本 修孝, 田口 純平, 増野 弘幸, 馬 悦 [KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, ITO NOBUTOSHI, FUJII Shinnya, ISHIDA Ryousuke, NUMOTO NOBUTAKA, TAGUCHI Junnpei, MASUNO HIROYUKI, MA YUE]				
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/13	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules1	KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, FUJII Shinnya, ISHIDA Ryousuke, MASUNO HIROYUKI, MA YUE
2	5/27	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules2	KAGECHIKA HIROYUKI, ITO NOBUTOSHI, FUJII Shinnya, ISHIDA Ryousuke, MASUNO HIROYUKI
3	6/10	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules3	KAGECHIKA HIROYUKI, FUJII Shinnya, NUMOTO NOBUTAKA, ISHIDA Ryousuke, MASUNO HIROYUKI
4	6/24	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules4	KAGECHIKA HIROYUKI, FUJII Shinnya, TAGUCHI Junnpei, ISHIDA Ryousuke, MASUNO HIROYUKI, MA YUE
5	7/1	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules5	KAGECHIKA HIROYUKI, HOSOYA TAKAMITSU, NUMOTO NOBUTAKA, FUJII Shinnya, ISHIDA Ryousuke, MASUNO HIROYUKI
6	7/15	10:00-12:15	遠隔授業(同期型)	Recent topics on biofunctional molecules6	KAGECHIKA HIROYUKI, FUJII Shinnya, TAGUCHI Junnpei, ISHIDA Ryousuke, MASUNO HIROYUKI, MA YUE

Lecture Style

This course includes seminar-type lectures, including the presentation by the students.

Course Outline See the table.

Grading System

Attendance (50%) and Presentation or Report (50%)

Prerequisite Reading

Fundamental organic chemistryand biochemistry should be reviewed. The books listed in #9 are usuful for understanding the topics in this course.

Reference Materials

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).

Email KAGECHIKA HIROYUKI:kage.chem@tmd.ac.jp

Instructor's Contact Information

KAGECHIKA HIROYUKI:Every Wednesday and Thursday, AM.10:00-PM.2:00

Dept. 21nd, 6 F, 609A

Lecture No	041017				
Subject title	Development of Functional Molecules			Subject ID	GC--c6428-L
Instructors	細谷 孝充, 影近 弘之, 玉村 啓和, 藤井 晋也, 小早川 拓也, 田口 純平, 辻 耕平, 石田 良典[HOSOYA TAKAMITSU, KAGECHIKA HIROYUKI, TAMAMURA HIROKAZU, FUJII Shinnya, KOBAYAKAWA Takuya, TAGUCHI Junnpei, TSUJI Kouhei, ISHIDA Ryousuke]				
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/20	15:00-17:15	遠隔授業(同期型)	Development of Functional Molecules1	TAGUCHI Junnpei, HOSOYA TAKAMITSU
2	5/27	15:00-17:15	遠隔授業(同期型)	Development of Functional Molecules2	TAGUCHI Junnpei, HOSOYA TAKAMITSU
3	6/3	15:00-17:15	遠隔授業(同期型)	Development of Functional Molecules3	TAGUCHI Junnpei, HOSOYA TAKAMITSU
4	6/17	15:00-17:15	遠隔授業(同期型)	Development of Functional Molecules4	TAMAMURA HIROKAZU, TSUJI Kouhei, KOBAYAKAWA Takuya
5	7/1	15:00-17:15	遠隔授業(同期型)	Development of Functional Molecules5	KAGECHIKA HIROYUKI, FUJII Shinnya, ISHIDA Ryousuke

Lecture Style

This course includes seminar-type lectures about organic chemistry.

Grading System

Attendance (50%) and Presentation (50%)

Prerequisite Reading

Fundamental organic chemistry should be reviewed. The books listed in #9 are usuful for understanding the topics in this course.

Reference Materials

Advanced Organic Chemistry(Francis A. Carey, Richard J. Sundberg, Springer).

Note(s) to Students

The schedule of the lecture may be changed.

Email

HOSOYA TAKAMITSU:thosoya.cb@tmd.ac.jp

Lecture No	041019				
Subject title	Tissue Regenerative Bioceramic Materials Science			Subject ID	GC--c6406-L
Instructors	川下 将一, 横井 太史, 島袋 将弥[KAWASHITA Masakazu, YOKOI Taishi, SHIMABUKURO Masaya]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: When an international student registers this subject for credits, this course is taught in English.

Lecture place

High-flex lectures, which combine face-to-face lecture and synchronous-type distance lecture, will be held in Bldg. 22, Conference Room 2 (1F).

Course Purpose and Outline

Course Purpose: Students will understand how bioceramics are designed and manufactured, and understand that bioceramics are clinically applied in various fields based on their structures and properties.

Outline: Students will read literature on bioceramics in turns, and lectures will be given by staffs in Department of Inorganic Biomaterials as necessary.

Course Objective(s)

Students will understand that various bioceramics are clinically applied in various fields according to their structures and characteristics.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	6/26	18:00-20:15	1F 第2会議室, 遠隔授業 (同期型)	Introduction to biocearmics	YOKOI Taishi, KAWASHITA Masakazu, SHIMABUKURO Masaya
2	7/3	18:00-20:15	1F 第2会議室, 遠隔授業 (同期型)	Structure of bioceramics	YOKOI Taishi, KAWASHITA Masakazu, SHIMABUKURO Masaya
3	7/12	18:00-20:15	1F 第2会議室, 遠隔授業 (同期型)	Synthesis and proceesing of bioceramics	YOKOI Taishi, KAWASHITA Masakazu, SHIMABUKURO Masaya
4	7/18	18:00-20:15	1F 第2会議室, 遠隔授業 (同期型)	Bioceramics for cancer therapy	YOKOI Taishi, KAWASHITA Masakazu, SHIMABUKURO Masaya
5	7/20	18:00-20:15	1F 第2会議室, 遠隔授業 (同期型)	Bioceramics for bone repair	YOKOI Taishi, KAWASHITA Masakazu, SHIMABUKURO Masaya

Lecture Style

Students will read the literature on bioceramics in turns and discuss the contents of the literature. Lectures by teachers will be given as needed.

Course Outline

(1) Need for Bioceramics

(2) Types of Bioceramic-Tissue Attachments

(3) Almost-Inert Crystalline Bioceramics

(4) Porous Ceramics

(5) Bioactive Glasses and Glass-Ceramics

(6) Interfacial Reaction Kinetics

(7) Clinical Applications of Bioactive Glasses and Glass-Ceramics

(8) Calcium Phosphate Ceramics

(9) Composites

(10) Coatings

(11) Therapeutic Applications

Grading System

Grading is based on class participation and quality of final presentation.

Class participation: 70%, Final presentation: 30%.

Prerequisite Reading

none

Reference Materials

Textbooks, references, and papers are suggested during lectures.

Email

KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp

Lecture No	041020				
Subject title	Organic Biomaterials Science			Subject ID	GC--c6407-L
Instructors	松元 亮[MATSUMOTO AKIRA]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

Course Purpose: To offer lectures on several important aspects in self-organization and hierarchical structuring found in biomolecules and tissues along with their bioengineering applications. The major purpose of the program is to train scientific mind as well as logical thinking required for independent researchers.

Outline: To deepen our understanding of the above and discuss on the expected future of organic biomaterials.

Course Objective(s)

Introduce useful information on organic biomaterials from basis to possible applications to attendants.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/8	18:30-20:45	遠隔授業(同期型)	Soft matter and DDS	MATSUMOTO AKIRA
2	5/11	18:30-20:45	遠隔授業(同期型)	Organic biomaterials for advanced medicine 1	MATSUMOTO AKIRA
3	5/16	18:30-20:45	遠隔授業(同期型)	Organic biomaterials for advanced medicine 2	MATSUMOTO AKIRA
4	5/23	18:30-20:45	遠隔授業(同期型)	Basis of molecular recognition chemistry	MATSUMOTO AKIRA
5	5/31	18:30-20:45	遠隔授業(同期型)	Molecular recognition chemistry & DDS	MATSUMOTO AKIRA

Lecture Style

Lecture, discussion and presentation

Grading System

Participation to lectures (50 %) and question during the class (50 %) are evaluated.

Prerequisite Reading

Previous credits on Advanced Biomaterials Science and Applied Biomaterials Science or the equal academic level is required (preferable) .

TextBook

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

Reference Materials

Advice appropriately.

Lecture No	041021				
Subject title	Medical Materials Engineering			Subject ID	GC--c6408-L
Instructors	岸田 晶夫, 木村 剛, 橋本 良秀[KISHIDA AKIO, KIMURA TSUYOSHI, HASHIMOTO YOSHIHIDE]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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.

Course Objective(s)

The goal of this course is to understand how novel medical devices should be developed.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/8	16:00-18:15	遠隔授業(同期型)	Planning for development of biomaterials	KISHIDA AKIO
2	5/9	14:00-16:15	遠隔授業(同期型)	Artificial and Natural biomaterials	KISHIDA AKIO
3	5/15	14:00-16:15	遠隔授業(同期型)	Tissue-engineered materials	HASHIMOTO YOSHIHIDE
4	5/22	14:00-16:15	遠隔授業(同期型)	Biological response for biomaterials	KIMURA TSUYOSHI
5	5/29	14:00-16:15	遠隔授業(同期型)	Medical device regulation	KIMURA TSUYOSHI

Lecture Style

Lecture, discussion and presentation

Grading System

Attendance to lectures (80 %) and reports (20 %) are evaluated.

Prerequisite Reading

Basic knowledge on Materials, Physio-Chemsitry and immunology is required (preferable) .

Reference Materials

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, 塙隆夫編著,田畑, 泰彦,塙, 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

Email

KISHIDA AKIO:kishida.mbme@tmd.ac.jp

Instructor's Contact Information

KISHIDA AKIO:Basically, available time is 10:00am-5:00pm Monday to Friday.

Building No.21, 2nd floor, 201A room.

Lecture No	041022				
Subject title	Mathematical and numerical methods for biomedical information analysis			Subject ID	GC--c6429-L
Instructors	中島 義和, 杉野 貴明, 周 東博, 小野木 真哉[NAKAJIMA Yoshikazu, SUGINO Takaaki, SHUU Touhaku, ONOGI Shinnya]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: If an/some international students register this lecture series for credits, this course will be done in English.

Lecture place

All lectures are given online (zoom).

Course Purpose and Outline

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.

Course Objective(s)

The students will understand principle methods for biomedical informatics and data processing. In addition, they will learn advanced technologies.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/8	09:45-12:00	遠隔授業(同期型)	Mathematical and statistical analyses for medical data 1	NAKAJIMA Yoshikazu
2	5/15	09:45-12:00	遠隔授業(同期型)	Mathematical and statistical analyses for medical data 2	ONOGI Shinnya
3	5/22	09:45-12:00	遠隔授業(同期型)	Artificlal intelligence analysis for medical data 1	SUGINO Takaaki
4	5/29	09:45-12:00	遠隔授業(同期型)	Artificlal intelligence analysis for medical data 2	SUGINO Takaaki
5	6/5	14:00-16:15	遠隔授業(同期型)	Biological signal processing and its applications on medical and rehabilitation en	SHUU Touhaku
6	6/12	14:00-16:15	遠隔授業(同期型)	Biological signal processing and its applications on medical and rehabilitation en	SHUU Touhaku

Lecture Style

Lecture and discussion

Course Outline

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.

Grading System

Class attendance, contribution for the lecture such as question and comments, and report quality will be considered on the assessment.

Grading Rule

The grade will consider class attendance and performance (50%) and reports (50%).

Prerequisite Reading

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.

Exam eligibility

No restriction.

Composition Unit

Yoshikazu Nakajima, Shinya Onogi, Takaaki Sugino, Dongbo Zhou
Module Unit Judgment
Grading will be done with the comprehensive consideration of lecture attendance and report quality.
TextBook
Handout will be provided if necessary.
Reference Materials
Handouts will be provided if necessary.
Important Course Requirements
Nothing.
Note(s) to Students
Nothing.
Email
NAKAJIMA Yoshikazu:nakajima.bmi@tmd.ac.jp
Instructor's Contact Information
NAKAJIMA Yoshikazu:15:00–16:30 on every Monday at Room 409A on the 4th floor, Building 21, Surugadai campus

Lecture No	041023				
Subject title	Lecture of RIKEN Molecular and Chemical Somatology			Subject ID	GC―c6410-L
Instructors	岸田 晶夫, 谷内 一郎, 田中 元雅, 石垣 和慶, 田上 俊輔, 吉田 英行, 泉 正範, 宮坂 信彦, 遠藤 良, 野村 高志, Gailhouste, Luc Nicolas[KISHIDA AKIO, Ichiroh Taniuchi, Motomasa Tanaka, ISHIGAKI Kazuyoshi, Shunsuke Tagami, YOSHIDA Hideyuki, IZUMI Masanori, Nobuhiko Miyasaka, Ryo Endoh, NOMURA Takashi, Gailhouste, Luc Nicolas]				
Semester	YearLong 2023	Level	1st－ year	Units	2
Course by the instructor with practical experiences					

Availability in English: English will be used in all of the classes.

Lecture place

Practice：Main Research bldg. in RIKEN Wako Campus, or RIKEN Center for Brain Science (Wako), RIKEN Center for Integrative Medical Sciences in Riken Yokohama Campus.

Research Practice：Each Laboratory in RIKEN

Course Purpose and Outline

Students will learn roles of biomolecules, which are involved in Chemical Biology, Molecular Immunology, Molecular Neuropathology, and the latest techniques and theoretical skills for understanding Molecular and Chemical Somatology.

Course Objective(s)

Students will learn background, history, essential knowledge, and practical protocols, so that they objectively discuss about their results in order to design and perform further experiments.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	6/22	09:45-12:00	遠隔授業(同期型)	Plant molecular cell biology	IZUMI Masanori
2	6/22	13:00-15:15	遠隔授業(同期型)	Structural biology	NOMURA Takashi
3	6/22	15:30-17:45	遠隔授業(同期型)	Molecular Neurobiology	Ryo Endoh
4	8/29	09:45-12:00	横浜理研 北研究棟 3F 会議室	Biomacromolecular engineering	Shunsuke Tagami
5	8/29	13:00-15:15	横浜理研 北研究棟 3F 会議室	Immune Molecular Regulation-1	Ichiroh Taniuchi
6	8/29	15:30-17:45	横浜理研 北研究棟 3F 会議室	Immune Molecular Regulation-2	YOSHIDA Hideyuki
7	8/31	13:00-15:15	和光理研 脳中央棟 5F セミナー室 S505	Molecular Neuropathology	Motomasa Tanaka
8	8/31	15:30-17:45	和光理研 脳中央棟 5F セミナー室 S505	Molecular Basis of Chemical Senses	Nobuhiko Miyasaka
9	9/7	13:00-15:15	遠隔授業(同期型)	Molecular basis of immune disease onsets	ISHIGAKI Kazuyoshi
10	9/7	15:30-17:45	遠隔授業(同期型)	Non-coding RNAs and Epigenetics	Gailhouste, Luc Nicolas

Lecture Style

Practice：Lecture and Laboratory

Research Practice：Laboratory

Course Outline

Practice

Goals/outline:Students will learn essential knowledge and practical protocols required for the studies on Molecular and Chemical Somatology by reading the latest publications and discussing about the contents therein

Lab

Goals/outline:Students will learn essential knowledge and practical skills required for research in Molecular and Chemical Somatology.

Available programs:

1）Molecular Neuropathology

・Molecular basis of psychiatric disorders and neurodegenerative diseases (Motomasa Tanaka)

2）Synthetic Organic Chemistry

・Design and synthesis of bioactive molecules based on synthetic organic chemistry and chemical biology research (Mikiko Sodeoka)

3) human genome medical biology

・Analysis of NGS data to characterize disease related gene variant (IKazuyoshi shigaki)

4) Molecular Immunology

・Regulatory mechanisms for lymphocyte development (Ichiro Taniuchi)

5) Molecular Cellular Pathology

・Chemical genetics approach for understanding regulation mechanism of physiological function in plants (Shinya Hagihara)

6) Single molecule Bio-physics

・Development of novel digital-bio analysis for disease associated molecules (Rikiya Watanabe)

※Check with the teacher in charge for the program which is not specifically scheduled.

Grading System

Practice : Attendance (40%), Report (60%)

Research Practice : Outcomes of experiments (40%), Presentations at conferences/meetings(40%), Report (20%)

The grade of Lab will be comprehensively evaluated. And the fifty percent of its grade will be evaluated based on the grade of Mid-term advice.

Prerequisite Reading

For Practice, carefully read the papers assigned as well as important reference papers cited therein, and learn and discuss how the results were obtained and how the conclusions were drawn. For Research, carefully design and prepare for every experiment based on one's purpose.

Reference Materials

Chemical Biology (L. Schreiber, T. Kapoor, G. Wess Ed、WILEY-VCH)、PROTEIN TARGETING WITH SMALL MOLECULES - Chemical Biology Techniques and Applications (H. Osada Ed、Wiley)

Lecture No	416012				
Subject title	Special Lectures for Advanced Oral Healthcare Sciences			Subject ID	GC-c6411-L
Instructors					
Semester	YearLong 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

Contact: Educational Planning Section, TEL:03-5803-4534、Email: grad02@ml.tmd.ac.jp

Yuji Kabasawa Email: kabasawa.ocsh@tmd.ac.jp

Availability in English: Partial classes are taught in English or When an international student registers this subject for credits, this course is taught in English.

Lecture place

Mainly Home for remote lectures

Course Purpose and Outline

Course Purpose: This course is designed to provide students with the latest basic and clinical knowledge necessary for research in oral health sciences. The course is designed to provide students with the necessary knowledge not only in the fields of medicine and dentistry

The course also covers the need for integration with related fields such as science, engineering, laboratory medicine (health science), and social welfare.

Course Objective(s)

The goal is for students to attend at least 2/3 of the lectures, understand the content of the lectures, and be able to formulate their own research themes.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff
1	5/8	08:50-14:30	遠隔授業(非同期型)	Introduction to Oral Health Science	Current Knowledge, and Research in Combination with Related Disciplines	KABASAWA YUJI
2	5/22	18:00-19:30	遠隔授業(同期型)	Introduction to Oral Health Science	Current Knowledge, and Research in Combination with Related Disciplines	KABASAWA YUJI
3	5/29	08:50-12:00	遠隔授業(非同期型)	Oral Health Science 1	Application of Oral Health Science in community and hospital	MATSUO Kouichirou
4	6/5	08:50-12:00	遠隔授業(非同期型)	Oral Health Science 2	Advanced Research in Oral Health Science	YOSHIDA Naomi
5	6/19	14:30-17:40	遠隔授業(非同期型)	Oral Health Science 3	Advanced Clinical Research in Oral Health Science	MATSUDA Yuuhei
6	6/26	08:50-12:00	遠隔授業(非同期型)	Oral Health Science 4	Social Epidemiology, Health Disparities and Oral Health Science	ITOU Kanade
7	7/3	08:50-12:00	遠隔授業(非同期型)	Oral Health Science 5	Oral Health Science in Public Health	ADACHI Naoko
8	7/10	18:00-19:30	遠隔授業(同期型)	Summary	Summary and grading	KABASAWA YUJI

Lecture Style

The lectures will be given mainly by remote lectures using web classes and ZOOM.

Course Outline The course will focus on the latest findings in oral health science, and fusion research with related fields. Application of oral health science in community and hospital settings. Advanced clinical research in oral health Social epidemiology, health disparities, and oral health studies Oral health studies in public health
Grading System Students will be evaluated comprehensively based on discussions, enthusiasm of efforts, and post-lecture assignments in each lecture.
Prerequisite Reading Refer to the announcement of each lecture and seminar.
Reference Materials Assigned by each lecturer.
Important Course Requirements Since most lectures are given remotely, if you have difficulty attending a lecture due to the communication environment, etc., be sure to contact the course instructor (Kabasawa).

Lecture No	416013				
Subject title	Advanced Oral Healthcare Sciences			Subject ID	GC-c6412-L
Instructors					
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

TMDU Hospital, Oral Health Center

Course Purpose and Outline

TMDU Graduate School and Hospital have established the Health Care Assistant (HCA) system, an internship program for graduate students qualified as dental hygienists, to provide training while actually working as part-time employees. This training is designed for students who wish to work at the Oral Health Center among the new HCA applicants, mainly to acquire the knowledge and skills necessary to perform perioperative and other oral health management.

Course Objective(s)

By the end, each student will:

1) To understand the outline of the work of the Oral Health Center.

2) Acquire the basics of patient care and how to deal with problems required of dental hygienists.

3) Understand the duties of an oral health center and perform the required duties appropriately under guidance.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff	Learning objectives・Learning methods・Instructions
1	6/27	08:50-12:00	その他	Perioperative Oral Health Management	Overview of oral health management in the perioperative period and explanation of this exercise	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital
2	6/28	08:50-16:30	その他	Perioperative Oral Health Management	Provide training at the Oral Health Center on oral health management in the perioperative period.	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko,	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital

						SUZUKI Hitomi	
3	6/29	08:50–12:00	その他	Perioperative Oral Health Management	Provide training at the Oral Health Center on oral health management in the perioperative period.	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital
4	6/30	08:50–16:00	その他	Perioperative Oral Health Management	Provide training at the Oral Health Center on oral health management in the perioperative period.	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital
5	7/4	08:50–16:00	その他	Perioperative Oral Health Management	Provide training at the Oral Health Center on oral health management in the perioperative period.	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital
6	7/5	08:50–16:10	その他	Perioperative Oral Health Management	Provide training at the Oral Health Center on oral health management in the perioperative period.	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Practice Location: Oral Health Center, Tokyo Medical and Dental University Hospital
7	7/10	08:50–10:20	その他	Perioperative Oral Health Management	Summary, including case presentations	KABASAWA YUJI, MATSUO Kouichirou, MATSUDA	Practice Location: Oral Health Center, Tokyo Medical and Dental University

						Yuuhei, ITOU Kanade, NAKAYAMA Rena, ADACHI Naoko, SUZUKI Hitomi	Hospital

Lecture Style

Lectures and exercises will be given at the oral health center.

Some of the lectures and exercises will incorporate active learning, such as case conferences and ZOOM.

Prerequisite Reading

Important Course Requirements

During your lesson in the hospital, take care of your manners as a medical staff.

Lecture No	416014				
Subject title	Advanced Oral Health Engineering			Subject ID	GC-c6413-L
Instructors					
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

Course Purpose:The goal of this course is to understand actual applications of various basic researchs and technique supporting oral health engineering, and to obtain knowledge for solving objects in a wide range.

Outline:Various topics related to various basic researchs and technique supporting oral health engineering will introduced through recent textbooks and papers by instructors of Departments of Basic Oral Health Engineering, Oral Biomaterials Development Engineering, and Oral Prosthetic Engineering.

Course Objective(s)

Students will acquire the fundamental knowledge regarding basic researchs and technique supporting oral health engineering, discuss their development, application, function, and problems, and learn the strategy for promoting fundamental knowledge to specific application.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/6	16:00-17:00	遠隔授業(非同期型)		KANAZAWA MANABU
2	10/13	16:00-17:00	遠隔授業(非同期型)		KANAZAWA MANABU
3	10/27	16:00-17:00	遠隔授業(非同期型)		MIYAYASU Annna
4	11/6	16:00-17:00	遠隔授業(非同期型)		IWAKI Maiko
5	11/10	16:00-17:00	遠隔授業(非同期型)		TSUCHIDA Yumi
6	11/17	16:00-17:00	遠隔授業(非同期型)		TSUCHIDA Yumi
7	11/24	16:00-17:00	遠隔授業(非同期型)		IKEDA MASAOMI
8	12/1	16:00-17:00	遠隔授業(非同期型)		IKEDA MASAOMI
9	12/8	16:00-17:00	遠隔授業(非同期型)		IKEDA MASAOMI
10	12/15	16:00-17:00	遠隔授業(非同期		SHIOZAWA Maho

			型)		
11	12/22	16:00-17:00	遠隔授業(非同期型)		SHIOZAWA Maho
12	1/12	16:00-17:00	遠隔授業(非同期型)		SHIOZAWA Maho
13	1/19	16:00-17:00	遠隔授業(非同期型)		KAMIJO SHINGO
14	1/26	16:00-17:00	遠隔授業(同期型)		OKI MEIKO
15	2/2	16:00-17:00	遠隔授業(同期型)		OKI MEIKO

Lecture Style

Several professors give sereies of lectures in various themes. The students learn the content of the lecture through the question and discussions.

Grading System

The grading is comprehensively evaluated based on participation (50%), question and reports (50%).

Prerequisite Reading

None. However, there may be reference texts and books announced beforehand so pleasecheck before each lesson.

Reference Materials

Some references may be introduced by instructors prior to their lectures.

Note(s) to Students

Schedule will be changed depending on the number of students.

Lecture No	416015				
Subject title	Advanced Bone Histomorphometry in the Hard Tissue Research			Subject ID	GC-c6414-L
Instructors					
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Synchronous remote teaching

Course Purpose and Outline

Purpose of the course: To learn the theory and practice of bone mineral density analysis, undecalcified section preparation, and bone histomorphometry, which are indispensable for hard tissue research, and to apply bone morphometry to one's research.

Abstract: The actual preparation of undecalcified sections and bone morphometry will be practiced using rodents, i.e., mice and rats. In the lecture, students will learn bone histomorphometry of jawbone, regenerated bone, bone histomorphometry, including remodeling animals such as dogs and monkeys, and also learn the current analyses of bone densitometry.

Course Objective(s)

1. To explain the role of bone histomorphometry in hard tissue research.
2. To distinguish between osteoclasts and osteoblasts in the undecalcified sections.
3. To explain bone histomorphometry in trabecular and cortical bone.
4. To explain bone histomorphometry in modeling and remodeling animals.
5. To explain bone histomorphometry in regenerated bone and jawbone.
6. To explain bone densitometry.
7. To be able to apply bone histomorphometry to own research.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff
1	5/18	07:20-08:50	遠隔授業（同期型）	Bone Histomorphometry: A Comprehensive Overview Part 1	Significance of Bone Histomorphometry in Hard Tissue Research	AOKI KAZUHIRO
2	6/15	07:20-08:50	遠隔授業（同期型）	Bone Histomorphometry: A Comprehensive Overview Part 2	Bone Histomorphometry in Hard Tissue Research	AOKI KAZUHIRO
3	7/20	07:20-08:50	遠隔授業（同期型）	BMD measurment Radiological Analysis: Part 1	Theory and practice of bone densitometry （DXA, pQCT, ultrasound, etc.）	AOKI KAZUHIRO, NONAKA Kiichi
4	9/21	07:20-08:50	遠隔授業（同期型）	Bone Histomorphometry: Part 1	Measurement Trainning of trabecular bone (mainly in the trabecular region of the long bones)	AOKI KAZUHIRO
5	10/19	07:20-08:50	遠隔授業（同期型）	Bone Histomorphometry: Part 2	Methods for making undecalcified sections (both thin and grinding sections)	AOKI KAZUHIRO, MASUD Khan
6	11/16	07:20-08:50	遠隔授業（同期型）	Radiological Analysis: Part 2	Micro-CT imaging and its practice	AOKI KAZUHIRO, KAMIJO SHINGO
7	12/21	07:20-08:50	遠隔授業	Bone Histomorphometry:	Cortical bone measurements and	AOKI

Lecture No	416002				
Subject title	Epidemiology Ⅱ			Subject ID	GC－－c6200－－L
Instructors					
Semester	Fall 2023	Level	1st－ year	Units	2
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Refer to the course schedule

Course Purpose and Outline

Course Purpose:

This course applies advanced epidemiological methodologies to explore the health effects of major social variables.

Outline:

We will focus on social determinants of health, including social class, race, gender, poverty, income distribution, social networks/support, community cohesion, work and neighborhood environment, behavioral economics, and nutritional epidemiology. We also address the health consequences of social and economic policies, and the potential role of specific social interventions, including innovative methods based on behavioral economics. To deepen understanding of social epidemiology, oral health outcomes, their distributions in the populations, and its common determinants will be taught. Lectures by Professor Ichiro Kawachi from Harvard T.H. Chan School of Public Health form part of the Harvard/Johns Hopkins Lecture Series (HJLS).

Course Objective(s)

By the end of this course, students will be able to logically and scientifically:

a) Define social determinant of health, explain measurement methods of them, and describe mechanisms through which social determinant of health influence health.

b) Explain high risk and population strategies of prevention, and contrast benefit and drawbacks of two strategies.

c) Explain oral health outcome measurements, its distribution and common determinants of oral health.

d) Explain how can we incorporate novel insights from behavioral economics to improve the success of behavior change.

Lecture plan

No	Date	Time	Room
1	11/6	08:50–10:20	遠隔授業（同期型）
2	11/6	10:30–12:00	遠隔授業（同期型）
3	11/6	13:00–14:30	遠隔授業（同期型）
4	11/6	14:40–16:10	遠隔授業（同期型）
5	11/6	16:20–17:50	遠隔授業（同期型）
6	11/7	08:50–10:20	遠隔授業（同期型）
7	11/7	10:30–12:00	遠隔授業（同期型）
8	11/7	13:00–14:30	遠隔授業（同期型）

9	11/9	08:50–10:20	遠隔授業（同期型）
10	11/9	10:30–12:00	遠隔授業（同期型）
11	11/9	13:00–14:30	遠隔授業（同期型）
12	11/9	14:40–16:10	遠隔授業（同期型）
13	11/10	08:50–10:20	遠隔授業（同期型）
14	11/10	10:30–12:00	遠隔授業（同期型）
15	11/10	13:00–14:30	遠隔授業（同期型）
16	11/10	14:40–16:10	遠隔授業（同期型）

Lecture Style

This course will consist of lectures and case-based class activities. Students will be required to write a final report.

Course Outline

Refer to the course schedule

Grading System

Grades will be based on the following elements:

Participation 10%

Presentations 35%

Final paper 55%

Prerequisite Reading

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

Reference Materials

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

The book is recommended for those whose research interests are related to social determinants of health.

Berkman LF, Kawachi I, Glymour MM, editor. Social Epidemiology. 2nd ed. New York: Oxford University Press; 2014.

Important Course Requirements

For students outside the MPH course, the condition for acceptance is a minimum TOEFL score of 80 or equivalent English language proficiency. Prerequisite: Epidemiology or the equivalent lecture. Please contact Dr. Aida (aida.ohp@tmd.ac.jp) before registration.

Note(s) to Students

An explanation of the assignment will be given in the lecture.

Lecture No	416003				
Subject title	Biostatisitcs Ⅱ			Subject ID	GC--c6210--L
Instructors					
Semester	Fall 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

All the lectures will be held in English.

Lecture place

Library Information Search Room 1, M&D Tower 4

Course Purpose and Outline

This course covers statistical procedures used in current empirical research with hands-on activities.

Course Objective(s)

By the end of this course, students are expected to be able to choose appropriate statistical analyses, perform them using statistical software (STATA), and interpret results scientifically and logically.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff
1-2	10/23	08:50-12:00	情報検索室	Lecture with hands-on activity (1) Research question and data cleaning (outlier, missing data		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
3-4	10/23	13:00-16:10	情報検索室	Lecture with hands-on activity (2) Summarize data (mean, frequency)		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
5-6	10/24	08:50-12:00	情報検索室	Lecture with hands-on activity (3) Correlations (group and individual)		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
7-8	10/24	13:00-16:10	情報検索室	Lecture with hands-on activity (4) Simple linear and logistic regression (individual level)		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
9-10	10/26	08:50-12:00	情報検索室	Lecture (5) Select covariates (DAG), Multivariate regression		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui

11-12	10/26	13:00-16:10	情報検索室	Hands-on activity (6) Select covariates (DAG), Multivariate regression		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui	
13-14	10/27	08:50-12:00	情報検索室	Lecture with hands-on activity (7) Interaction		FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui	
15-16	10/27	13:00-16:10	情報検索室	Lecture with hands-on activity (8) Sensitivity analysis	(stratification, missing dummy, multiple imputation)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui	

Lecture Style

This course will consist of lectures and case-based class activities. Students will be required to write a final report.

Course Outline

This course surveys current topics in public health research with a focus on statistical methods. Throughout the course, students will have opportunity to perform these analyses using statistical software (STATA).

Grading System

Grades will be based on the following elements:

Participation 10%

Final report 90%

Prerequisite Reading

During the course, you will be asked to log onto zoom as well as webclass from the computer in the library. Please make sure you know the log-in ID and password for both zoom and webclass before the class week.

Important Course Requirements

Please contact Dr. Nawa (nawa.hlth@tmd.ac.jp) or Dr. Morita (morita.hlth@tmd.ac.jp) and prove your fluency level of English (TOEFL iBT 80 or higher, IELTS 6.5 or higher, or equivalent) before registration.

Lecture No	416004				
Subject title	Public Health Biology			Subject ID	GC--c6220--L
Instructors	髙田 和生, JANELLE RENEE MOROSS, 上里 彰仁, 具 芳明, 田頭 保彰, 田中 敏博, 香坂 俊, 秋山 好光, 能登 洋, 池田 貞勝, 重光 秀信, 長谷川 久紀[TAKADA KAZUKI, JANELLE RENEE MOROSS, UEZATO Akihito, GU Yoshiaki, TAGASHIRA Yasuaki, TANAKA TOSHIHIRO, KOUSAKA Shunn, AKIYAMA YOSHIMITSU, NOTO HIROSHI, IKEDA SADAKATSU, SHIGEMITSU Hidenobu, HASEGAWA Hisanori]				
Semester	Spring 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

(Course director)
Kazuki Takada, Professor, Department of Professional Development in Health Sciences
(Instructors)
Yoshimitsu Akiyama, Junior Associate Professor, Department of Molecular Oncology
Yoshiaki Gu, Professor, Department of Infectious Diseases
Hisanori Hasegawa, Junior Associate Professor, Institute of Global Affairs
Sadakatsu Ikeda, Associate Professor, Cancer Center, TMDU Hospital
Shun Kohsaka, Senior Lecturer, Department of Cardiology, Keio University School of Medicine
Janelle Moross, Associate Professor, Institute of Global Affairs
Hiroshi Noto, Director, Endocrinology Department, St. Luke's International Hospital
Hidenobu Shigemitsu, Program Director, Critical Care Services, St. Rose Dignity Hospital Siena Campus
Yasuaki Tagashira, Junior Associate Professor, Department of Infectious Diseases
Toshihiro Tanaka, Professor, Department of Human Genetics and Disease Diversity
Akihito Uezato, Professor, School of Health and Welfare, International University of Health and Welfare

Availability in English
/// High-level practical English proficiency is required ///

All sessions are taught in English, and use both didactic and case methods with class discussion and group work. Therefore, high-level practical English proficiency is required .Minimum TOEFL iBT score of 80 (or its equivalent) is strongly recommended for participants. If you don't speak up in English during class, you will not receive passing grades no matter how good your written assignments are.

Lecture place

Refer to the course schedule

Course Purpose and Outline

(Goals)
The goals of this course are to provide students with a fundamental understanding of the biology and pathophysiology underlying major human diseases which cause significant morbidity or mortality that are necessary for the practice of public health.

(Outline)
Discusses the molecular, cellular, physiological, genetic and immunological determinants of human diseases and disease susceptibility, including infectious disease, pulmonary diseases related to air pollution, diabetes and obesity, cardiovascular diseases, stress-related conditions, psychiatric diseases, perinatal complications, and cancer. Focuses how biological principles help to understand the development, treatment and prevention of disease, and to assess risk from potentially hazardous agents and behaviors.

Course Objective(s)

Upon successfully completing this course, students will be able to do the following at the level which is appropriate for doctoral students:

・Describe the public health strategies for the prevention of the infectious diseases of public health concern worldwide

・Explain how a vaccine works to achieve resistance to an infectious organism, define the term herd immunity, and explain how it provides protection for the non-immunized person as well as its philosophical consideration
・Describe the psychophysiological effector mechanisms that represent the stress response and the effect of the stress response on the target organ systems and its public health implications
・Describe the prevalence, clinical manifestations, natural history and societal impact, pathophysiology, and management of mood and anxiety disorders, schizophrenia, developmental disorders, and dementia
・Outline normal pregnancy and parturition and describe the effects of host environment on fetus
・Describe the public health strategies for the prevention of the pulmonary diseases related to air pollution and the respiratory tract infection of public-health concerns
・Describe the public health burden (domestic and global) of and the public health strategies for the prevention of cardiovascular diseases
・Describe the public health burden (domestic and global) of and the public health strategies for the prevention of diabetes/obesity
・Define genetics and its relationship to the health of individuals and populations, and define major ethical, legal, and social implications of genetics as applied in the clinical setting and in public health
・Describe the effects of epigenetic states on health outcomes related to cardiovascular and respiratory disease, aging, reproductive health, neurological and neuropsychological diseases, and cancer
・Describe the public health burden (domestic and global) of and the public health strategies for various cancer

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/8	08:50-10:20	G-Lab, 遠隔授業（同期型）	Host response to infection: the immune response and vaccination	TAKADA KAZUKI, HASEGAWA Hisanori
2	5/8	10:30-12:00	G-Lab, 遠隔授業（同期型）	Host response to infection: the immune response and vaccination	TAKADA KAZUKI, HASEGAWA Hisanori
3	5/9	08:50-10:20	遠隔授業（同期型）	Essentials of obstetrics for public health students	JANELLE RENEE MOROSS
4	5/12	13:00-14:30	遠隔授業（同期型）	Stress Response / Essentials of neuroscience and psychiatric illness	UEZATO Akihito
5	5/12	14:40-16:10	遠隔授業（同期型）	Stress Response / Essentials of neuroscience and psychiatric illnesses	UEZATO Akihito
6	5/15	13:00-14:30	遠隔授業（同期型）	Pathogens, infection, and infectious diseases I	GU Yoshiaki
7	5/15	14:40-16:10	遠隔授業（同期型）	Pathogens, infection, and infectious diseases II	TAGASHIRA Yasuaki
8	5/16	13:00-14:30	遠隔授業（同期型）	Genetics for public health students	TANAKA TOSHIHIRO
9	5/16	14:40-16:10	遠隔授業（同期型）	Genetics for public health students	TANAKA TOSHIHIRO
10	5/17	13:00-14:30	遠隔授業（同期型）	Cardiovascular diseases for public health students	KOUSAKA Shunn
11	5/17	14:40-16:10	遠隔授業（同期型）	Cardiovascular diseases for public health students	KOUSAKA Shunn

12	5/18	10:30–12:00	G-Lab, 遠隔授業（同期型）	Epigenetics for public health students	AKIYAMA YOSHIMITSU
13	5/18	13:00–14:30	G-Lab, 遠隔授業（同期型）	Diabetes and obesity for public health students	NOTO HIROSHI
14	5/18	14:40–16:10	G-Lab, 遠隔授業（同期型）	Diabetes and obesity for public health students	NOTO HIROSHI
15	5/19	08:50–10:20	遠隔授業（同期型）	Cancer for public health students	IKEDA SADAKATSU
16	5/19	10:30–12:00	遠隔授業（同期型）	Cancer for public health students	IKEDA SADAKATSU
17	5/19	13:00–14:30	遠隔授業（同期型）	Pulmonary diseases related to air pollution and respiratory tract infection of public-health concern	SHIGEMITSU Hidenobu

Lecture Style

All sessions will use both the didacic method and the case method with class discussion and group work.

Course Outline

Refer to the course schedule

Grading System

A curved grading system will be used for the final grade based on the sum of all points granted, using a scale of A+, A, B, C, and F. In principle, the standard grading curve is A+ (15%), A (25%), B (30%), and C (30%). For those students who fail to meet the requirements for grading, the grade will be marked as "F (ineligible for grading)". The final evaluation of the course will be determined based on your grade:

A+, A, B, C:　Completed, credit granted

F:　Not completed, credit not granted

Grading Criteria

Grades are finalized by taking into account the sum of all points granted for the following items.

(1) Preparation Assignment: 7% of the total course points

Points will be granted upon each Preparation Assignment submission. However, a Preparation Assignment may not be accepted if it is judged to be incomplete.

(2) Class Participation: 25% of the total course points

The statements you make during each class will be graded from both qualitative and quantitative perspectives, taking into account your grasp of the assigned materials, the responsiveness to in-class questions posed by the instructor and the quality of contributions made to in-class discussions and debate, for the purpose of assessing your contribution to the class. Key evaluative questions are:

– How deeply did each student analyze issues?

– How well did one mobilize learning of fellow students in the class?

(3) Final Report: 58% of the total course points

The evaluation of Final Report will be based NOT on the quantity (the length) but on the quality (content and organization) by taking into account the following factors:

・ Analytical ability and insights

・ Reasoning skills

・ Ability to develop and evaluate hypotheses

・ Comprehension of learned concepts and frameworks

・ Strength of the argument presented

Prerequisite Reading

Preparation (reading, viewing, assignments, etc) will be specified in the course syllabus which will be provided to registered students on WebClass.

TextBook

Human Genetic Diversity／Julian C. Knight：Oxford University Press, 2007

Please purchase the above textbooks before the session "Genetics for public health students".

Reference Materials

All other reference materials will be specified in the course syllabus on WebClass.

Important Course Requirements

1) High-level practical English proficiency is required. All sessions are taught in English, and use both didactic and case methods with class discussion and group work. Therefore, high-level practical English proficiency is required .Minimum TOEFL iBT score of 80 (or its equivalent) is strongly recommended for participants. If you don't speak up in English during class, you will not receive passing grades no matter how good your written assignments are. (2) Self Introduction Set your concrete goal for taking this course and post it, along with your self-introduction, to the course mailing list (phb@ml.tmd.ac.jp) at latest two days prior to the first class. (3) Attendance ・ Attendance of at least 12 out of 17 sessions. ・ You will be marked as absent if you are more than 10 minutes late or you leave the class more than 10 minutes before the class ends. However, if tardiness overall is excessive (in frequency and length, even if it does not go beyond the 10-minute allowance range), some points may be deducted when calculating your final grade. (4) Preparation Assignments When indicated in the course syllabus, students are required to turn in Preparation Assignments. Preparation Assignments assist you in understanding the topic for the class and help you better prepare for class discussion. Write your Preparation Assignments on all of the exercises specified in the syllabus of approximately one to two pages in length and submit them to the specified e-mail address. The deadline for Preparation Assignment is the class starting time. A detailed guideline to preparing Preparation Assignments will be on the course syllabus. Preparation Assignments will only be accepted from students who have attended class and uploaded Preparation Assignments in the designated way. If students are absent, Preparation Assignments will be marked as "Not Submitted". Note that a Preparation Assignment may not be accepted if it is judged to be incomplete. (5) Preparation and Class Participation All sessions are conducted with the assumption that all students are fully prepared. Students attending class without having prepared will not benefit themselves and, even worse, hold back other students in group discussions. Therefore, all students are expected to prepare thoroughly. (6) Submission of Final Report A report is required for the completion of the course and its deadline will be specified in the course syllabus. The most important point in completing Final Report is to develop and explain your own opinions which should be thought through thoroughly and lead you to make your own conclusion. Merely summarizing cases, methods or frameworks is not sufficient. Explain your thoughts clearly and concisely. Use simple and clear expressions. If you use any charts in your Report, clarify and explain what information those can tell readers. Detailed direction for Final Report will be given at the end of the course syllabus on WebClass. Final report is due at 9:00 am on June 19, 2023. Note: Measures against cheating and plagiarism When writing your Final Report, it is strictly forbidden to copy or use ideas from Final Reports of your classmates or those students who took this course in past terms, handouts from other courses, or materials from past terms. Students should refrain from sharing solutions for Final Report exercises and any other information that could impact the outcome of it through any forms of communication. Both the provider and beneficiary of relevant information shall become disqualified from completing the course in the case of such cheating and plagiarism.

Note(s) to Students

Preparation assignments, dates, time, location of each session are subject to change. Please check with the most updated course syllabus. For non-MPH students, instructor's permission is required before registration.

Lecture No	416005				
Subject title	Health System and Management			Subject ID	GC－－c6230－－L
Instructors					
Semester	Fall 2023	Level	1st－ year	Units	2
Course by the instructor with practical experiences					

Lecture place

G-lab, 8F, M&D tower

Course Purpose and Outline

This class teaches how to promote change in health systems and people's behavior through health communication programs. Students will learn how to apply theory and research methods to the design, implementation, and evaluation of health communication programs.

Course Objective(s)

By the end of the course, students are expected to be able to:

- Explain the steps in developing a communications program.
- Describe research methods for developing, implementing, and evaluating campaigns
- Develop communication messages and materials consistent with theory, data, and health communication strategies
- Describe appropriate monitoring and evaluation techniques to assess the process and effectiveness during the course of a health communication program.
- Plan and conduct surveys to measure knowledge, attitudes, and behaviors of campaign audiences before and after intervention and analyze data
- Review and critically evaluate the design, implementation, and evaluation of communication programs

based on logic and scientific evidence.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	1/16	08:50-10:20	G-Lab	Lecture: Health Systems Management (1)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
2	1/16	10:30-12:00	G-Lab	Lecture: Health Systems Management (2)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
3	1/16	13:00-14:30	G-Lab	Lecture: Health Systems Management (3)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
4	1/16	14:40-16:10	G-Lab	Lecture: Health Systems Management	FUJIWARA Takeo, NAWA

				(4)	Nobutoshi, MORITA AYAKO, YAMAOKA Yui
5	1/17	08:50–10:20	G-Lab	Q & A session and Lecture: Health Systems Management (5)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
6	1/17	10:30–12:00	G-Lab	Lecture: Health Systems Management (6)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
7	1/17	13:00–14:30	G-Lab	Lecture: Health Systems Management (7)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
8	1/17	14:40–16:10	G-Lab	Lecture: Health Systems Management (8)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
9–10	1/22	08:50–12:00	G-Lab	Q & A session and Lecture: Health policy in Japan	ONOZAKI Kouhei
11	1/22	13:00–14:30	G-Lab	Lecture: Health Systems Management (9)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
12	1/22	14:40–16:10	G-Lab	Lecture: Health Systems Management (10)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
13	1/25	08:50–10:20	G-Lab	Q & A session and Lecture: Health Systems Management (11)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui

14	1/25	10:30-12:00	G-Lab	Lecture: Health Systems Management (12)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
15	1/25	13:00-14:30	G-Lab	Lecture: Health Systems Management (13)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
16	1/25	14:40-16:10	G-Lab	Lecture: Health Systems Management (14)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
17	1/25	16:20-17:50	遠隔授業（非同期型）	Watching video lectures by Dr. Watabe （on WebClass）	WATABE Akihito
18	1/25	19:40-21:10	遠隔授業（同期型）	Q and A session with Dr. Watabe (Zoom)	WATABE Akihito
19	1/26	08:50-10:20	G-Lab	Q & A session and Lecture: Health Systems Management (15)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
20	1/26	10:30-12:00	G-Lab	Lecture: Health Systems Management (16)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
21	1/26	13:00-14:30	G-Lab	Lecture: Health Systems Management (17)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui
22	1/26	14:40-16:10	G-Lab	Lecture: Health Systems Management (18)	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui

Lecture Style

This course will consist of lectures and case-based class activities. Students are required to give a final presentation.

Course Outline Refer to the course schedule
Grading System Grades will be based on the following elements: Participation 20% Final presentation 80%
Prerequisite Reading Course materials will be introduced in class and will be made available on the web page.
Module Unit Judgment 2 units
Reference Materials To be specified in the class.
Important Course Requirements For students not in the MPH course, instructor's permission is required before registering to the course. Also, students are required to have TOEFL iBT with a minimum score of 80 or IELTS with a minimum score of 6.5.

Lecture No	416006				
Subject title	Planetary Health			Subject ID	GC--c6240--L
Instructors					
Semester	Spring 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

Instructor(s):

Keiko Nakamura, Professor, Department of Global Health Entrepreneurship

Kaoruko Seino, Junior Associate Professor, Department of Global Health Entrepreneurship

Hisashi Ogawa, Visiting Professor TMDU,

Kayoko Yamamoto, Professor, The University of Electro-Communications

Osamu Kunii, CEO Global Health Innovative Technology Fund, Visiting Professor TMDU

Tomomi Nakao, Researcher, Healthcare and Wellness Division, Mitsubishi Research Institute INC.

Saori Kashima, The IDEC Institute, Associate Professor, Hiroshima University

Availability in English: All classes are taught in English.

Lecture place

Refer to the course schedule

Course Purpose and Outline

Course Purpose:

This course explores the global human health impacts of natural system transformation, including climate systems, land cover, biogeochemical cycles and biodiversity. Participants will discuss ecological determinants of human health, health consequences of certain types of environmental change, and how humanity manages the Earth's natural systems, in the context of planetary health.

Outline:

This course consists of series lectures, team projects and group presentations. Working on the team projects on environmental change and health, participants will gain knowledge and skills in access to interdisciplinary information, data analysis, leadership, teamwork, and developing plans with new insights.

Course Objective(s)

At the end of the course, participants will be able to:

1) Describe the concepts of planetary health and research methodologies
2) Identify health impacts of environmental changes
3) Describe the roles of international organizations to promote planetary health
4) Describe disaster preparedness and response to mitigate health impacts of a disrupted environment
5) Summarize and present original articles on planetary health
6) Propose potential measures to mitigate or adapt environmental changes

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	4/17	08:50-10:20	G-Lab	Introduction to Planetary Health	NAKAMURA KEIKO
2	4/17	10:30-12:00	G-Lab	Environmental changes and health 1	SEINO KAORUKO
3	4/17	13:00-14:30	G-Lab, 遠隔授業（同期型）	Global environmental changes and health	OGAWA Hisashi
4	4/17	14:40-16:10	G-Lab	Environmental changes	SEINO

				and health 2	KAORUKO
5	4/18	08:50-10:20	G-Lab	Environmental changes and health 3	SEINO KAORUKO
6	4/18	10:30-12:00	G-Lab	Infectious Diseases and Planetary Health	KUNII Osamu
7	4/18	13:00-14:30	G-Lab	Engineering Transdisciplinary Science and Planetary Health	KASHIMA Saori
8	4/19	08:50-10:20	G-Lab	Environmental changes and health 4	SEINO KAORUKO
9	4/19	10:30-12:00	G-Lab	Utilization of ICT for Disaster Resilience	YAMAMOTO Kayoko
10	4/19	13:00-14:30	G-Lab	Community Based Projects of Planetary Health"	NAKAO Tomomi
11	4/19	14:40-16:10	G-Lab	Environmental changes and health 4	SEINO KAORUKO, OGAWA Hisashi
12-13	4/24	08:50-12:00	G-Lab	Environmental changes and health 5	NAKAMURA KEIKO, SEINO KAORUKO, OGAWA Hisashi
14-15	4/24	13:00-16:10	G-Lab	Review, Recap (Review of the group work presentation and course recap)	NAKAMURA KEIKO

Lecture Style

Lectures, team projects

Course Outline

Refer to the course schedule

Grading System

Grades are based on attendance at lectures, performances in team projects and presentations, and levels of attitude, skills and knowledge.

Prerequisite Reading

To be announced before the classes.

Module Unit Judgment

2 units

Reference Materials

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

Important Course Requirements

There are no special requirements.

Lecture No	416007				
Subject title	Global Health			Subject ID	GC--c6250--L
Instructors					
Semester	Spring 2023	Level	1st - year	Units	4
Course by the instructor with practical experiences					

All the lectures will be held in English.

Lecture place

G-Lab, M&D Tower 8F

Course Purpose and Outline

This course provides an overview of important health challenges facing the world today, discusses how these have changed over time, examines determinants of such changes, and predicting the future.

Course Objective(s)

By the end of this course, students are expected to be able to:

a) Explain the relationship between population dynamics, cultural, ethnic, and historical backgrounds, natural resources, human and socio-economic movements, and health status of a specific region logically and scientifically.

b) Discuss impact of activities of governmental, intergovernmental, and nongovernmental institutions on the process of dealing with public health and human right logically and scientifically.

c) Describe current global health challenges on the aspects of medicine, public health, law, economics, social sciences and humanities logically and scientifically.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives・Learning methods・Instructions
1	8/28	08:50-10:20	G-Lab	Lecture : Aging and Policy	NAGAMINE Yuko	
2	8/28	10:30-12:00	G-Lab	Lecture: Cognitive Aging, Dementia and Aging Populations + Instruction on the couse assignment	MORITA AYAKO	
3	8/28	13:00-14:30	G-Lab	Lecture: Rural health in Japan	SHOUBUGAWA Yuugou	
4	8/28	14:40-16:10	G-Lab	Case and group activity: Preparation for group-based presentation	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO	
5	8/28	17:00-18:00	G-Lab	Lecture: Global Health Affairs	EZOE Satoshi	
6-8	8/29	08:50-14:30	G-Lab	Lecture: Human development in developing countries	GOTOU Aya	
9	8/29	14:40-16:10	G-Lab	Case and group activity: Intermediate presentation	FUJIWARA Takeo, NAWA	

					Nobutoshi, MORITA AYAKO	
10	8/31	08:50–10:20	G-Lab, 遠隔授業（同期型）	Lecture : WHO's Response and Role in COVID-19 Pandemic via Zoom	NOZAKI Shinjiro	
11	8/31	10:30–12:00	G-Lab	Lecture: Infectious disease control in hospital	GU Yoshiaki	
12	8/31	13:00–14:30	G-Lab	Lecture: Public Health in Malaria	ISHINO Tomoko	
13	8/31	14:40–16:10	G-Lab	Lecture : COVID19 pandemic and social capital	NAWA Nobutoshi, MORITA AYAKO	Instructor: Yu Par Khin
14	9/1	08:50–10:20	G-Lab	Lecture: LGBT health	FUJIWARA Takeo	
15	9/1	10:30–12:00	G-Lab	Lecture: Disability and public health	YAMAOKA Yui	
16	9/1	13:00–14:30	G-Lab	Case and group activity: Preparation for group-based presentation	FUJIWARA Takeo, MORITA AYAKO, NAWA Nobutoshi, YAMAOKA Yui	
17	9/1	14:40–16:10	G-Lab	Case and group activity: Group-based presentation COVID-19 Pandemic and Social Capital	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui	
18–21	9/4	08:50–16:10	G-Lab	Lecture : Qualitative method in global health (1)	NAWA Nobutoshi, PAMELA Jean Surkan, MORITA AYAKO, YAMAOKA Yui	
22–25	9/5	08:50–16:10	G-Lab	Lecture : Qualitative method in global health (2)	NAWA Nobutoshi, PAMELA Jean Surkan, MORITA AYAKO, YAMAOKA Yui	
26–29	9/7	08:50–16:10	G-Lab	Lecture : Qualitative method in global health	NAWA Nobutoshi,	

				(3)	PAMELA Jean Surkan, MORITA AYAKO, YAMAOKA Yui		
30-33	9/8	08:50-16:10	G-Lab	Lecture : Qualitative method in global health (4)	NAWA Nobutoshi, PAMELA Jean Surkan, MORITA AYAKO, YAMAOKA Yui		

Lecture Style

Throughout the course we will review and discuss evidence, theory, and methods related to global health and approaches used to design, implement and evaluate policies to address global health problems.

Course Outline

This course will consist of lectures and case-based class activities. Students will be required to write a final report.

Grading System

Grades will be based on the following elements:

Participation 10%

Group-based presentation 35%

Group-based qualitative study report 55%

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.

Important Course Requirements

Instructor's permission is required before registering to the course. Please contact Dr. Nawa (nawa.hlth@tmd.ac.jp) or Dr. Morita (morita.hlth@tmd.ac.jp) and show that you have TOEFL iBT with a minimum score of 80 or IELTS with a minimum score of 6.5.

Lecture No	416010				
Subject title	Behavioral Sciences			Subject ID	GC--c6280--L
Instructors					
Semester	Fall 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

G-lab, M&D Tower 8F

Course Purpose and Outline

This course has been designed to provide students with a conceptual grounding in theoretical approaches and hot research topics in health behaviors.

Course Objective(s)

Upon successfully completing this course, students will be able to apply theories and models in diagnosing community and designing effective public health intervention based on scientific evidence and clear logic.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives・Learning methods・Instructions
1	10/10	08:50-10:20	G-Lab	Lecture: Theories and Models of Behavioral Change	MORITA AYAKO	
2	10/10	10:30-12:00	G-Lab	Case and group activity: Course instruction and exercise	MORITA AYAKO	
3-4	10/10	13:00-16:10	G-Lab	Lecture: Tobacco Control	KATANODA Kouta	
5	10/11	08:50-10:20	G-Lab	Lecture: Shared Decision Making & Role of Emotion	Takebayashi Yoshitake, DOI Satomi	
6	10/11	10:30-12:00	G-Lab	Lecture: Health Behavior Change Intervention in Practice	Takebayashi Yoshitake, DOI Satomi	
7	10/11	13:00-14:30	G-Lab	Lecture: Social Networks and Social Support in Promoting Health	MORITA AYAKO	
8	10/11	14:40-16:10	G-Lab	Case and group activity: Intermediate presentation	FUJIWARA Takeo, MORITA AYAKO, DOI Satomi, NAWA Nobutoshi, YAMAOKA Yui	
9-10	10/12	08:50-12:00	G-Lab	Lecture: Population	KAMADA	Social marketing

				strategies for promoting physical activity	Masamitsu	and gamification techniques
11–12	10/12	13:00–16:10	G-Lab	Case and group activity: Population strategies for promoting physical activity	KAMADA Masamitsu	Social marketing and gamification techniques
13–14	10/13	08:50–12:00	G-Lab	Lecture: Application of Social Network Analysis to HIV/STI Research	FUJIWARA Takeo	Instructor: Kayo Fujimoto
15–16	10/13	13:00–16:10	G-Lab	Case and group activity: Presentation and results of in-class Social Network analysis	FUJIWARA Takeo, MORITA AYAKO, DOI Satomi, NAWA Nobutoshi, YAMAOKA Yui	

Lecture Style

Lectures, readings and case-studies

Course Outline

This course provides students with basic knowledge and skills needed to understand individual, group, and community behaviors and change processes in cross-cultural contexts in order to design health promoting behavioral interventions.

Grading System

Grades will be based on the following elements:

Participation 10%

Assignment 90% (Presentation 35%, Final report 55%)

Prerequisite Reading

Important Course Requirements

Instructor's permission is required before registering to the course. Please contact Dr. Morita (morita.hlth@tmd.ac.jp) or Dr. Doi (doi.hlth@tmd.ac.jp) and show your level of English fluency (TOEFL iBT 80 and above or IELTS6.5 and above, or equivalent).

Note(s) to Students

Reading materials are available online at the course webpage. Students are recommended to read the materials before the corresponding lectures.

Lecture No	416011				
Subject title	Environmental Health			Subject ID	GC--c6290--L
Instructors					
Semester	Fall 2023	Level	1st - year	Units	2
Course by the instructor with practical experiences					

授業は全て英語で行います。履修者は、TOEFL iBT80 点以上、IELTS6.5 点以上、または同等以上の英語力があることを履修時に示してください。

Lecture place

G-lab, 8F, M&D Tower

Course Purpose and Outline

This course introduces current topics in environmental health issues, scientific understanding of their causes, and possible future approaches toward control of the major environmental health problems.

Course Objective(s)

By the end of this course, students are expected to be able to:

a) Define environmental exposures important in public health and describe how they may cause illness or promote health scientifically and logically.

b) Describe specific factors (e.g., gene, demography, socioeconomic status, nutrition, etc.) that influence the likelihood of exposure and the risk of health outcomes scientifically and logically.

c) Explain how to identify environmental hazards, assess effects of hazards on health, control hazards, and monitor the control efforts scientifically and logically.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1-2	2/5	08:50-12:00	遠隔授業（同期型）	Lecture: Minamata Disease （via Zoom）	YORIFUJI Takashi
3	2/5	13:00-14:30	G-Lab	Lecture: Climate change and health in Japan	NISHIMURA Hisaaki
4	2/5	14:40-16:10	G-Lab	Case and group activity: Assignment guidance - Environment and child development	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui, NISHIMURA Hisaaki
5	2/6	08:50-10:20	遠隔授業（非同期型）	Lecture: Environment and child development (On-demand video)	NAKAYAMA Shouji
6	2/6	10:30-12:00	G-Lab	Lecture: Q&A sessions	NAKAYAMA Shouji
7	2/6	13:00-14:30	G-Lab	Lecture: Climate change and vector-borne disease	SEPOSO XERXES TESORO
8	2/6	14:40-16:10	G-Lab	Lecture: Assessing health impacts of air pollution	UEDA Kayo

9–12	2/8	08:50–16:10	G-Lab	Lecture: Occupational toxicology and policy implication	BRIAN S. Schwartz
13–14	2/9	08:50–12:00	G-Lab	Lecture: Air pollution in Asia – from evaluation to interpretation of its impacts on health	OONISHI Kazunari
15	2/9	13:00–14:30	G-Lab	Case and group activity: Preparation for the presentation	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui, NISHIMURA Hisaaki
16	2/9	14:40–16:10	G-Lab	Case and group activity: Presentation	FUJIWARA Takeo, NAWA Nobutoshi, MORITA AYAKO, YAMAOKA Yui, NISHIMURA Hisaaki

Lecture Style

This course will consist of lectures and case-based class activities. Students will be required to write a final report.

Course Outline

Throughout the course we will review and discuss topics including toxicology, exposure assessment, environmental epidemiology, risk assessment/management, air pollution, water pollution, and environmental justice.

Grading System

Grades will be based on the following elements:

Participation 10%

Presentation 35%

Final paper 55%

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.

TextBook

Frumkin H, editor. Environmental health: from global to local. San Francisco: Jossey-Bass; 2016.

Important Course Requirements

Instructor's permission is required before registering to the course. Also, students are required to have TOEFL iBT with a minimum score of 80 or IELTS with a minimum score of 6.5. Please contact Prof. Fujiwara at fujiwara.hlth@tmd.ac.jp

			(同期型)	Part 3	measurements of bone regeneration sites and jaw bones	KAZUHIRO	
8	1/18	07:20-08:50	遠隔授業 (同期型)	Summary	All students enrolled in this special course will present what they have learned in this special course and share their results.	AOKI KAZUHIRO	

Lecture Style

The course will be based on face-to-face classes and practical training, with synchronous teleclasses as needed.
If the teaching method changes, we will notify you in advance.
Before attending lectures and practical training, students must watch the basic explanation video prepared in advance.
Each student will give around 5 minute presentation in the last class.
Please prepare in advance. (Refer to the evaluation method).

Course Outline

The methods for measuring bone remodeling activity in long bone are not similar to those for quantifying bone dynamics in regenerated bone. Also, methods for measuring cortical and trabecular bone in long bones differ from those for measuring jawbone. Physiological changes or effects of interventions can be quantified using measurement methods based on understanding each type of bone. In this advanced course, students will learn the limitations of bone histomorphometry, how to deal with them, and the densitometric bone analyses essential for hard tissue research in combination with bone histomorphometry.
(Omnibus / 8 lectures)
(Kazuhiro Aoki/5 times) Bone Histomorphometry: General and Specific Theories/Student Presentations (final session)
(Shingo Kamijo/1 time) Radiological analyses (μCT)
(Kiichi Nonaka/1 time) Current bone densitometry (DXA, pQCT, ultrasound bone densitometry)
(Masud Khan/1 time) Undecalcified section preparation

Grading System

Grading will be based on participation in lectures and the final presentation, with the following percentages as a guide
○Participation in lectures and practical training: 70% (This is the number of attendance evaluation points for the seven classes other than the last class where the presentation is given, with a maximum score of 10 points per class.)
○Final presentation: 30%.
(You will be asked to present how you were able to think about applying and developing what you have learned in your research)

Prerequisite Reading

(1) Read through the materials when they are uploaded in advance before coming to class.
(2) Be sure to attend the final presentation. If you have no choice but to be absent, notify the instructor before the class starts.
(3) The presentation should be about 5 minutes in length.
(4) The presentation should include: 1) a description of the purpose of your research, 2) the region of interest, and 3) which parameters you are going to measure.
(4) Try to make your presentation plain and concise so that students from other fields can understand the purpose of your research.

Lecture No	041024				
Subject title	Integrative Biomedical Sciences for Preemptive Medicine Ⅰ			Subject ID	
Instructors	石川　欽也, 田中　敏博, 永田　有希, 中村　桂子, 三林　浩二, 大川　龍之介[ISHIKAWA KINYA, TANAKA TOSHIHIRO, NAGATA Yuki, NAKAMURA KEIKO, MITSUBAYASHI KOJI, OKAWA RYUNOSUKE]				
Semester	YearLong 2023	Level	1st－ year	Units	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

ZOOM(Web)

Course Purpose and Outline

【Course Purpose】

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.

【Outline】

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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	8/3	10:30-12:00	遠隔授業(同期型)		ISHIKAWA KINYA
2	8/4	15:00-16:30	遠隔授業(同期型)		ISHIKAWA KINYA
3	8/9	15:00-16:30	遠隔授業(同期型)		ISHIKAWA KINYA
4	8/10	13:00-14:30	遠隔授業(同期型)		TANAKA TOSHIHIRO, NAGATA Yuki
5	8/10	15:00-16:30	遠隔授業(同期型)		OKAWA RYUNOSUKE
6	8/21	17:30-19:00	遠隔授業(同期型)		NAKAMURA KEIKO
7	8/22	15:00-16:30	遠隔授業(同期型)		MITSUBAYASHI KOJI
8	8/25	13:00-14:30	遠隔授業(同期型)		ISHIKAWA KINYA

Lecture Style

The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.

Grading System

Participation (50%), question and answer (20%), and reports (30%).
Prerequisite Reading None.
Reference Materials None.
Important Course Requirements None.
Note(s) to Students 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.
Email ISHIKAWA KINYA:pico.nuro@tmd.ac.jp
Instructor's Contact Information ISHIKAWA KINYA:10:00AM-2:00PM, every Tuesday, at The Center for Personalized Medicine for Healthy Aging, 16th Floor, Medical University Hospital

Lecture No	041025				
Subject title	Integrative Biomedical Sciences for Preemptive Medicine Ⅰ			Subject ID	
Instructors	石川 欽也, 田中 敏博, 大川 龍之介, 中村 桂子, 吉田 雅幸, 永田 有希[ISHIKAWA KINYA, TANAKA TOSHIHIRO, OKAWA RYUNOSUKE, NAKAMURA KEIKO, YOSHIDA MASAYUKI, NAGATA Yuki]				
Semester	YearLong 2023	Level	1st－ year	Units	1
Course by the instructor with practical experiences					

Lectures and all communications are in English.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	11/8	10:30-12:00	遠隔授業(同期型)	Introduction	ISHIKAWA KINYA
2	11/8	13:00-14:30	遠隔授業(同期型)	Concepts of preemptive medicine and individualized medicine, the process from the healthy	ISHIKAWA KINYA
3	11/13	10:30-12:00	遠隔授業(同期型)	The basics to develop the health management algorithm based on the omics data	ISHIKAWA KINYA
4	11/14	10:30-12:00	遠隔授業(同期型)	Medicine based on Big Data and AI	ISHIKAWA KINYA
5	11/16	14:00-15:30	遠隔授業(同期型)	TBA	YOSHIDA MASAYUKI
6	11/22	10:30-12:00	遠隔授業(同期型)	Establishment of biobanks for preemptive medicine and omics profiling, study tour around biobanks	TANAKA TOSHIHIRO, NAGATA Yuki
7	11/24	10:30-12:00	遠隔授業(同期型)	Pitfalls of sample handling and lipidomics	OKAWA RYUNOSUKE
8	11/27	17:30-19:00	遠隔授業(同期型)	Use of data science and information technology to advance global public health	NAKAMURA KEIKO
9	11/28	13:00-14:30	遠隔授業(同期型)	Practical aspects of personalized medicine for common disease	ISHIKAWA KINYA

Lecture Style

The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.

Grading System

Participation (50%), question and answer (20%), and reports (30%).

Prerequisite Reading None.
Note(s) to Students 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.
Email ISHIKAWA KINYA:pico.nuro@tmd.ac.jp
Instructor's Contact Information ISHIKAWA KINYA:10:00AM-2:00PM, every Tuesday, at The Center for Personalized Medicine for Healthy Aging, 16th Floor, Medical University Hospital

Lecture No	041026				
Subject title	Integrative Biomedical Sciences for Preemptive Medicine Ⅱ			Subject ID	
Instructors	石川 欽也[ISHIKAWA KINYA]				
Semester	YearLong 2023	Level	1st － year	Units	1
Course by the instructor with practical experiences					

All classes are taught in English.

Course Purpose and Outline

【Course Purpose】

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.

【Outline】

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.

Course Objective(s)

This course will provide a broad-based education that helps to develop a comprehensive overview of the field of disease prevention sciences.

Lecture Style

The leading experts in Integrative Biomedical Sciences for Preemptive Medicine will be invited and the course will focus on student participation and discussion.

Course Outline

TBA

Grading System

Participation (50%), question and answer (20%), and reports (30%).

Prerequisite Reading

None.

Reference Materials

None.

Important Course Requirements

None.

Note(s) to Students

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.

Email

pico.nuro@tmd.ac.jp

Instructor's Contact Information

10:00AM-2:00PM, every Tuesday, at The Center for Personalized Medicine for Healthy Aging, 16th Floor, Medical University Hospital

Lecture No	041027				
Subject title	Data Science I			Subject ID	GC--c6311-L
Instructors	竹内 勝之, 小島 寛之[TAKEUCHI Katsuyuki, KOJIMA Hiroyuki]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

Please check the course schedule.

Course Purpose and Outline

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 Neyman-Pearson statistics without using difficult formulae.

Course Objective(s)

The goal is that students acquire the key knowledge of the statistics.

Lecture Style

The course consists of lectures.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%), and discussion (30%)

Prerequisite Reading

None.

TextBook

完全独習統計学入門／小島寛之：ダイヤモンド社, 2006

Note(s) to Students

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.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041028				
Subject title	Data Science I			Subject ID	GC--c6315-L
Instructors	髙橋 邦彦, 安齋 達彦[TAKAHASHI Kunihiko, ANZAI Tatsuhiko]				
Semester	Fall 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: All classes are taught in English

Lecture place

Online (Zoom)

Course Purpose and Outline

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.

Course Objective(s)

The goal is to have an image of an error (a probabilistic phenomenon) in data, to became to explain the hypothesis testing as a means of evaluating objects of interest in the data, and to be able to interpret the performance of statistical analyses in accordance with the research objectives.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	11/2	14:30-16:00	遠隔授業(同期型)	Concept of statistical inference for data science	TAKAHASHI Kunihiko
2	11/2	16:10-17:40	遠隔授業(同期型)	Comparing groups - categorical data	TAKAHASHI Kunihiko
3	11/16	14:30-16:00	遠隔授業(同期型)	Comparing groups - continuous data	TAKAHASHI Kunihiko
4	11/16	16:10-17:40	遠隔授業(同期型)	Correlation and regression	TAKAHASHI Kunihiko
5	11/30	14:30-16:00	遠隔授業(同期型)	Generalized linear model	TAKAHASHI Kunihiko
6	11/30	16:10-17:40	遠隔授業(同期型)	Survival analysis	ANZAI Tatsuhiko
7	12/14	14:30-16:00	遠隔授業(同期型)	Classification and prediction	ANZAI Tatsuhiko
8	12/14	16:10-17:40	遠隔授業(同期型)	Multivariate methods in data science	TAKAHASHI Kunihiko

Lecture Style

Lectures on data sciences, mainly statistics/biostatistics.

Grading System

Participation (40%) and reports (60%).

Prerequisite Reading

Those who feel less knowledge about math are encouraged to personally learn it with introductory textbooks on statistics.

Email

TAKAHASHI Kunihiko:biostat.dsc@tmd.ac.jp

Instructor's Contact Information

TAKAHASHI Kunihiko:Weekdays only. Advanced appointments are required.

Contact to Department of Biostatistics, M&D Data Science Center(E-mail: biostat.dsc@tmd.ac.jp).

Lecture No	041029				
Subject title	Data Science Ⅱ			Subject ID	GC--c6321-L
Instructors	竹内 勝之, 茂櫛 薫, 長谷 武志[TAKEUCHI Katsuyuki, MOGUSHI Kaoru, HASE Takeshi]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

Please check the course schedule.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

The course gives both lectures and practices. The course lectures will be held only on Saturday.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%) and assignments (30%)

Prerequisite Reading

Students are recommended to prepare their classes with Reference Materials.

Reference Materials

RStudio ではじめる R プログラミング入門／Garrett Grolemund 著,大橋真也 監訳,長尾高弘 訳:オライリー・ジャパン, 2015

Note(s) to Students

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.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041030				
Subject title	Data Science Ⅱ			Subject ID	GC--c6325-L
Instructors	長谷川 嵩矩[HASEGAWA Takanori]				
Semester	YearLong 2023	Level		Units	1
Course by the instructor with practical experiences					

Availability in English : All classes are taught in English.

Lecture place

PC room 2 in Library（M&D Tower 4F）and/or　student can access to class materials remotely.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff	Learning objectives・Learning methods・Instructions
1	5/9	14:30-16:00	情報検索室	Introduction to Data Science Ⅰ	1. How to use R for data science and 2. Data Visualization and Comparison	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
2	5/9	16:10-17:40	情報検索室	Introduction to Data Science Ⅱ	1. How to use R for data science and 2. Data Visualization and Comparison	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
3	5/23	14:30-16:00	情報検索室	Data science in practice Ⅰ	3. Correlation, and Regression	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.

4	5/23	16:10-17:40	情報検索室	Data science in practice Ⅱ	3. Correlation, and Regression	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
5	6/6	14:30-16:00	情報検索室	Data science in practice Ⅲ	4. Survival analysis and 5. Classification and Prediction	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
6	6/6	16:10-17:40	情報検索室	Data science in practice Ⅳ	4. Survival analysis and 5. Classification and Prediction	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
7	6/20	14:30-16:00	情報検索室	Data science in practice Ⅴ	6. Multivariate methods in data science	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.
8	6/20	16:10-17:40	情報検索室	Data science in practice Ⅵ	6. Multivariate methods in data science	HASEGAWA Takanori	PC room 2 in Library（M&D Tower 4F）and/or student can access to class materials remotely.

Lecture Style

The course gives both lectures and practices.

Course Outline

1. How to use R for data science
2. Data Visualization and Comparison
3. Correlation and Regression
4. Survival analysis
5. Classification and Prediction
6. Multivariate methods in data science

Grading System

Participation (0%) and assignments (100%) due to COVID-19 pandemic

Grading Rule

A report will be imposed for each lecture and evaluated by the instructor.

Prerequisite Reading

Students are encouraged to attend "Data Science I".
Exam eligibility No tests will be conducted. Please submit the assignments given after each class.
Composition Unit 1. How to use R for data science 2. Data Visualization and Comparison 3. Correlation and Regression 4. Survival analysis 5. Classification and Prediction 6. Multivariate methods in data science
Module Unit Judgment Submit and pass assignments for all units. Class materials and assignments will be published on the web.
Relationship With Other Subjects "Data Science I" or equivalent level knowledge is assumed.
Note(s) to Students 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.
Email t.hasegawa.dsc@tmd.ac.jp
Instructor's Contact Information Please contact me in advance.

Lecture No	041510				
Subject title	Data Science Ⅲ			Subject ID	GC--c6322-L
Instructors	竹内 勝之, 下川 朝有[TAKEUCHI Katsuyuki, SHIMOKAWA Asanao]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Please check the course schedule.

Course Purpose and Outline

Course Purpose : Python is the essential tool for data analyses using the Machine Learning. Students will acquire the Python programming skills in this course.

Outline : This course gives the practical training for beginners to master the Python programming skills.

Course Objective(s)

The goal is that students learn the basic Python programming skills.

Lecture Style

The course consists of lectures and practices. It will be held only on Saturday.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%), and discussion (30%)

Prerequisite Reading

Students are recommended to prepare their classes with Reference Materials.

Reference Materials

ゼロから学ぶ Python プログラミング : Google Colaboratory でらくらく導入／渡辺宙志 著,渡辺, 宙志,:講談社, 2020

Important Course Requirements

None

Note(s) to Students

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.

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041511				
Subject title	Data Science Ⅳ			Subject ID	GC--c6323-L
Instructors	竹内 勝之, 小島 寛之[TAKEUCHI Katsuyuki, KOJIMA Hiroyuki]				
Semester	YearLong 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Please check the course schedule.

Course Purpose and Outline

Course Purpose : Students will acquire the essence of the statistics, which is the basis of learning data science.

Outline : This course gives lectures on the Bayesian statistics, which is the basis of the Artificial Intelligence and other technologies, without using difficult formulae.

Course Objective(s)

The goal is that students acquire the key knowledge of the Bayesian statistics.

Lecture Style

The course consists of lectures.

Course Outline

The course schedule will be announced to the course registrants as soon as it is decided.

Grading System

Participation (70%), and discussion (30%)

Prerequisite Reading

None

TextBook

完全独習ベイズ統計学入門／小島寛之：ダイヤモンド社, 2015

完全独習統計学入門／小島寛之：ダイヤモンド社, 2006

Email

TAKEUCHI Katsuyuki:takeuchi.k.mds@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI Katsuyuki:Weekdays only. Advanced appointments are required.

Contact to Katsuyuki Takeuchi in Career Development Office (E-mail: takeuchi.k.mds@tmd.ac.jp)

Lecture No	041031				
Subject title	Epidemiology			Subject ID	
Instructors					
Semester	Spring 2023	Level	1st – year	Units	2
Course by the instructor with practical experiences					

This course will be held in English.

Lecture place

G-Lab, M&D Tower 8F

Course Purpose and Outline

This course is a lesson to learn the basics of the Clinical Statistics and Bioinformatics Graduate Program of the Integrative Biomedical SciencesPrograms for Preemptive Medicine aiming at the training of personnel who can promote precision medicine.

Course Objective(s)

By the end of this course, students will be able to:

a) Measure disease for behavior scientifically and logically

b) Appraise published paper critically

c) Write reviewer comments scientifically and logically

d) Designing epidemiological study to address public health issue scientifically and logically

Course Outline

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.

Grading System

Grades will be based on the following elements:

1. Attendance 10%

2. Assignments 40% (Group-based presentation A 20%, Group-based presentation B 20%)

4. Exam 50%

Prerequisite Reading

Please read relevant pre-reading materials uploaded on Webclass before the lectures.

Reference Materials

Epidemiology: with student consult／Gordis L.:Elsevier, 2013

Gordis L. Epidemiology: with student consult. 5th edition. Philadelphia: Elservier; 2013

Szklo M, Nieto EJ, Epidemiology: Beyond the Basics. 3rd edition, Jones & Bartlett Learning; 2012.

Rothman KJ, Greenland S, Lash T. Modern Epidemiology. LWW; 2012.

Relationship With Other Subjects

This course is a prerequisite for Epidemiology Ⅱ.

Important Course Requirements

Instructor's permission is required before registering to the course. Also, students are required to have TOEFL iBT with a minimum score of 80 or IELTS with a minimum score of 6.5.

Note(s) to Students

Please bring your laptop for group works and exam.

Lecture No	041032				
Subject title	Clinical Biostatistics and Statistical Genetics			Subject ID	
Instructors	髙橋 邦彦, 安齋 達彦[TAKAHASHI Kunihiko, ANZAI Tatsuhiko]				
Semester	Spring 2023	Level	1st – year	Units	2
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Online video

Course Purpose and Outline

Course Purpose:

This course introduces the basic techniques important for analyzing data from epidemiologic, biomedical (including clinical and genetic) and other public health related research. Statistical reasoning will be emphasized through problem solving and practical applications.

Outline:

Biostatistics is the application of statistical methods to data in biomedical, biological, and health sciences. It is a key technique for the collection, analysis, and presentation of data especially in quantitative 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.

Course Objective(s)

By the end of this course, students will be able to:

a) Interpret basic statistical terminologies.

b) Explain assumptions and conditions for basic statistical techniques, and judge which statistical technique to use in a given situation.

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.

Lecture Style

This course will consist of lectures and optional laboratory sessions (online video). Q&A system on webclass and some optional hours will be prepared. There will be some reports. (Details will be announced later.)

Course Outline

Refer to the course schedule

Grading System

Grades will be based on the following elements:

Participation (Watch online video) 20%

Reports 80%

Prerequisite Reading

Reading textbook 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.

Altman DG. Practical Statistics for Medical Research. Chapman & Hall; 1991.

Armitage P. Statistical Methods in Medical Research. 4th ed. Blackwell Science Ltd; 2002.

Important Course Requirements

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

Note(s) to Students

Online Q&A system is available during the course, and a realtime Q&A session (optional, June 8, 2023, 14:00–, via zoom) is prepared.

This course uses the Stata statistical software. Stata is available for each student during the course.

Students are expected to perform basic algebra, including logarithms and exponentials, by hand or using calculator.

This course is a prerequisite for Biostatistics Ⅱ.

Lecture No	041033				
Subject title	Advanced Biosensing Devices			Subject ID	GC--c6418-L
Instructors	三林 浩二, 池内 真志, 松元 亮, 加藤 大, 飯谷 健太[MITSUBAYASHI KOJI, IKEUCHI Masashi, MATSUMOTO AKIRA, KATOU Dai, IITANI Kennta]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Lecture place

All lectures are given online (zoom).

Course Purpose and Outline

Course Purpose:This program offers lectures on several important topics in Sensing devices, Biochemistry, Recognition materials, MEMS and Optics for Biosensing in the medicaland 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 dentalfields will be discussed.

Course Objective(s)

Introduce useful information from the basic biosensors to latest biochemical sensing devices in the medical and dental fields to attendants.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/10	13:00-15:15	遠隔授業(同期型)	Spatiotemporal Biosensing in the gas phase	MITSUBAYASHI KOJI, IITANI Kennta
2	5/17	13:00-15:15	遠隔授業(同期型)	Material technology for realizing high performance biosensors	KATOU Dai
3	5/24	13:00-15:15	遠隔授業(同期型)	Biomedical microdevice by using micro/nano 3D fabrication	IKEUCHI Masashi
4	5/31	13:00-15:15	遠隔授業(同期型)	From Mechano-biological Sensing to Mechano-medicine	IKEUCHI Masashi
5	6/7	13:00-15:15	遠隔授業(同期型)	Biosensing-synchronized therapeutic technologies	MATSUMOTO AKIRA

Lecture Style

Lectures on the essence of advanced biosensing devices.

Grading System

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%).

Prerequisite Reading

Any students who prepare for this course, they can refer to the following books and paper.

Reference Materials

テレワーク社会を支えるリモートセンシング = Advanced remote sensing for supporting telework／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

「非接触」が拓く新しいバイタルモニタリング = Non-Contact Vital Signs Monitoring : 革新的な健康管理と医療・介護への応用／三林浩二監修,三林, 浩二,:シーエムシー出版, 2021

Chemical, gas, and biosensors for internet of things and related applications／edited by Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno,三林, 浩二,Niwa, Osamu. [丹羽修],Ueno, Yuko. [上野祐子],: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

Micro Electronic and Mechanical Systems／Kenichi Takahata:IntechOpen, 2009

刺激応答性高分子ハンドブック = Stimuli-responsive polymers handbook／宮田隆志 監修,宮田, 隆志,:エヌ・ティー・エス, 2018

To be distributed during the lecture.

Important Course Requirements

To be announced during the lecture.

Email

MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp

Instructor's Contact Information

MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21

Lecture No	041034				
Subject title	Advanced Medical Device and System			Subject ID	GC--c6419-L
Instructors	中島 義和, 梶 弘和, 坂内 英夫, 池内 真志, 周 東博, 清水 秀幸[NAKAJIMA Yoshikazu, KAJI Hirokazu, BANNNAI Hideo, IKEUCHI Masashi, SHUU Touhaku, SHIMIZU Hideyuki]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

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.

Lecture place

All lectures are given online (zoom).

Course Purpose and Outline

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.

Course Objective(s)

The aim of the course is to understand the basic knowledge to promote the development of medical devices and systems integrated IoT and AI.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	6/26	14:00-16:15	遠隔授業(同期型)	AI implementation in medicine	NAKAJIMA Yoshikazu
2	7/3	14:00-16:15	遠隔授業(同期型)	Biodelivery systems	KAJI Hirokazu
3	7/10	14:00-16:15	遠隔授業(同期型)	Memory-saving algorithms and data structures	BANNNAI Hideo
4	7/18	14:00-16:15	遠隔授業(同期型)	Precise therapeutic devices and systems	IKEUCHI Masashi
5	7/24	14:00-16:15	遠隔授業(同期型)	Medical-Device Image Analysis and its Application to Practical Clinic	SHIMIZU Hideyuki
6	7/31	14:00-16:15	遠隔授業(同期型)	AI Analysis and Design for Medical Device Development	SHUU Touhaku
7	8/21	14:00-16:15	遠隔授業(同期型)	Computer integrated surgery	NAKAJIMA Yoshikazu

Lecture Style

Lecture and discussion

Course Outline

The details are shown in another table.

Grading System

Attendance to lectures (60 %) and reports (40 %) will be evaluated.

Grading Rule

Attendance to lectures (60 %) and reports (40 %)

Prerequisite Reading

Instruction will be done at the first lecture. It will be done in any class if necessary.

Exam eligibility

No restriction.

Composition Unit

Yoshikazu Nakajima, Hirokazu Kaji, Masashi Ikeuchi, Hideo Bannai, Heewon Park, Hideyuki Shimizu,SHUU Touhaku

Module Unit Judgment

1 unit

TextBook Handout will be provided in each class if necessary.
Reference Materials Handouts will be provided if necessary.
Important Course Requirements Nothing.
Note(s) to Students Nothing.
Email NAKAJIMA Yoshikazu:nakajima.bmi@tmd.ac.jp
Instructor's Contact Information NAKAJIMA Yoshikazu:15:00–16:30 on every Monday at Room 409A on the 4th floor, Building 21, Surugadai campus

Lecture No	041035				
Subject title	Wearable & IoT Devices and Applications			Subject ID	GC--c6420-L
Instructors	三林 浩二, 飯谷 健太, 山口 真澄, 成瀬 哲也, 田邉 勇二, 吉岡 克成[MITSUBAYASHI KOJI, IITANI Kennta, YAMAGUCHI Masumi, Tetsuya Naruse, TANABE Yuji, YOSHIOKA Katsunari]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Lecture place

All lectures are given online (zoom).

Course Purpose and Outline

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 dentalfields will be discussed.

Course Objective(s)

Introduce useful information from the basic wearable sensors to latest IoT devices in the medical and dental fields to attendants.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/26	13:00-15:15	遠隔授業(同期型)	Wearable biosensors & Gas-imaging camera	MITSUBAYASHI KOJI, IITANI Kennta
2	6/14	13:00-15:15	遠隔授業(同期型)	Utilization of wearable bioelectrode "hitoe"in IoT society	YAMAGUCHI Masumi
3	6/21	13:00-15:15	遠隔授業(同期型)	Wearable and IoT devices in consumer electronics	Tetsuya Naruse
4	6/28	13:00-15:15	遠隔授業(同期型)	Cutting edge wireless powering technologies for medical/IoT application	TANABE Yuji
5	7/5	13:00-15:15	遠隔授業(同期型)	Security issues in IoT devices	YOSHIOKA Katsunari

Lecture Style

Lectures on the essence of wearable IoT technologies.

Grading System

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%).

Prerequisite Reading

Any students who prepare for this course, they can refer to the following books and paper.

Reference Materials

テレワーク社会を支えるリモートセンシング = Advanced remote sensing for supporting telework／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

「非接触」が拓く新しいバイタルモニタリング = Non-Contact Vital Signs Monitoring : 革新的な健康管理と医療・介護への応用／三林浩二監修,三林, 浩二,:シーエムシー出版, 2021

Chemical, gas, and biosensors for internet of things and related applications／edited by Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno,三林, 浩二,Niwa, Osamu. [丹羽修],Ueno, Yuko. [上野祐子],: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
ユビキタス・バイオセンシング : 健康モニタリング&日常ケアのための計測技術／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2006
To be distributed during the lecture.

Important Course Requirements

To be announced during the lecture.

Email

MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp

Instructor's Contact Information

MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21

Lecture No	041036				
Subject title	Molecular Pathophysiology			Subject ID	GC--c6422-L
Instructors	佐々木 純子, 田中 光一, 荒川 博文, 竹内 純, 瀬川 勝盛[SASAKI Junnko, TANAKA KOICHI, Hirofumi Arakawa, TAKEUCHI Junn, SEGAWA Katsumori]				
Semester	Spring 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this course for credits, this course is done in English.

Course Purpose and Outline

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, 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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/8	13:00-15:15	遠隔授業(同期型)	Molecular pathophysiology of cancer: Lessons from phospholipids	SASAKI Junnko
2	5/11	13:00-15:15	遠隔授業(同期型)	Cancer biology and pathophysiology: Lessons from p53	Hirofumi Arakawa
3	5/12	13:00-15:15	遠隔授業(同期型)	Molecular pathophysiology of neuropsychiatric diseases	TANAKA KOICHI
4	5/18	13:00-15:15	遠隔授業(同期型)	Cholesterol and diseases: from plaques to genes to drugs	SEGAWA Katsumori
5	5/19	13:00-15:15	遠隔授業(同期型)	Molecular pathophysiology of congenital heart diseases	TAKEUCHI Junn

Lecture Style

Lecture, discussion and presentation

Grading System

Participation to lectures is evaluated.

Prerequisite Reading

Basic knowledge on molecular biology, biochemistry, neuroscience and immunology is required.

Reference Materials

Mark F. Bear, Barry W. Connors and Michael A. Paradiso, Neuroscience: Exploring the Brain. Lippincott Williams & Wilkins.

Scott F. Gilbert, "Developmental Biology" (10th Edition)

T.W.Sadler, "Langman's medical embryology"(13th Edition)

Important Course Requirements

・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.

Lecture No	041037				
Subject title	Advanced Chemical Biology			Subject ID	GC--c6423-L
Instructors	玉村 啓和, 沼本 修孝, 藤井 晋也, 辻 耕平, 丹羽 節[TAMAMURA HIROKAZU, NUMOTO NOBUTAKA, FUJII Shinnya, TSUJI Kouhei, NIWA Takashi]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English:When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	6/10	14:00-16:15	遠隔授業(同期型)	Advanced Chemical Biology Research1	TSUJI Kouhei
2	6/17	12:40-14:55	遠隔授業(同期型)	Advanced Chemical Biology Research2	NUMOTO NOBUTAKA
3	6/24	14:00-16:15	遠隔授業(同期型)	Advanced Chemical Biology Research3	FUJII Shinnya
4	7/1	12:40-14:55	遠隔授業(同期型)	Advanced Chemical Biology Research4	NIWA Takashi
5	7/8	14:00-16:15	遠隔授業(同期型)	Advanced Chemical Biology Research5	TAMAMURA HIROKAZU

Lecture Style

This course includes seminar-type lectures, exercises about organic chemistry, and practices about chemical biology techniques.

Grading System

Attendance (50%) and Presentation (50%)

Prerequisite Reading

Fundamental organic chemistry should be reviewed. The books listed in #9 are useful for understanding the topics in this course.

Reference Materials

Chemical Biology (L. Schreiber, T. kapoor, G. Wess Eds, WILEY-VCH); PROTEIN TARGETING WITH SMALL MOLECULES - Chemical Biology Techniques and Applications (Wiley)

Email

TAMAMURA HIROKAZU:tamamura.mr@tmd.ac.jp

Instructor's Contact Information

TAMAMURA HIROKAZU:Mon-Fri, 3-5 pm

Bldg22, Fl6, Rm603B

Lecture No	041038				
Subject title	Molecular and Chemical Somatology			Subject ID	GC--c6424-L
Instructors	岸田 晶夫, 萩原 伸也, 石垣 和慶, 袖岡 幹子, 吉岡 広大, 江越 脩祐, 新冨 圭史[KISHIDA AKIO, HAGIHARA Shinya, ISHIGAKI Kazuyoshi, Mikiko Sodeoka, YOSHIOKA hiromasa, EGOSHI Shusuke, SHINTOMI Keishi]				
Semester	Spring 2023	Level	1st - year	Units	1
Course by the instructor with practical experiences					

Availability in English: When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online or RIKEN Wako campus.

Course Purpose and Outline

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.

Course Objective(s)

Students will hear and discuss about latest topics from each instructor.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/18	13:00-15:15	遠隔授業(同期型)	Regulation of physiological function with synthetic molecules	HAGIHARA Shinya
2	5/25	13:00-15:15	理研生物科学研究棟 N351	Development of Novel Methodologies for Chemical Biology	Mikiko Sodeoka, EGOSHI Shusuke
3	5/25	15:30-17:45	理研生物科学研究棟 N351	Single molecule biophysics and its application	WATANABE Rikiya, ANDOH Jun
4	6/1	13:00-15:15	遠隔授業(同期型)	Chemical Biology of Cell Death	YOSHIOKA hiromasa
5	6/15	14:00-16:15	遠隔授業(同期型)	Molecular mechanism of 3D genome structures	SHINTOMI Keishi

Lecture Style

Lectures by instructors, Presentation by students, and Discussion

Grading System

Attendance (40%) and Report (60%)

Prerequisite Reading

None

Reference Materials

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)

Email

HAGIHARA Shinya:hagi@riken.jp

Instructor's Contact Information

HAGIHARA Shinya:3:00-5:00 pm, every Tuesday to:

Dr. Shinya Hagihara, Chief Instructor of Molecular and Chemical Somatology

Lecture No	416016				
Subject title	Epidemiology: Basic			Subject ID	GC--c6430-L
Instructors					
Semester	Spring 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

G-lab(8th floor of M&D Tower), Library Active Learning Room(4th floor of M&D Tower)

Course Purpose and Outline

Course Objectives

To understand the fundamentals of epidemiology and learn the basics of properly interpreting and writing clinical research papers.

Course Objective(s)

Acquire the knowledge of epidemiology to conduct clinical epidemiological studies.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/10	18:00-19:30	アクティブラーニング教室	Introduction to Epidemiology	TANI Yukako
2	5/17	18:00-19:30	アクティブラーニング教室	Disease measurement, sensitivity and specificity	TANI Yukako
3	5/24	18:00-19:30	アクティブラーニング教室	Epidemiological study design, ecological studies	TANI Yukako
4	5/31	18:00-19:30	アクティブラーニング教室	Sampling, validity and reliability	TANI Yukako
5	6/7	18:00-19:30	アクティブラーニング教室	Cross-sectional studies, confounding factors	TANI Yukako
6	6/14	18:00-19:30	アクティブラーニング教室	Cohort and case-control studies	TANI Yukako
7	6/21	18:00-19:30	アクティブラーニング教室	Randomized controlled trials, bias	TANI Yukako
8	6/28	18:00-19:30	アクティブラーニング教室	Critical Appraisal	TANI Yukako

Lecture Style

Depends on the lectures of the course instructor.

Course Outline

See table.

Grading System

Attendance at least 5 out of 8 sessions is required.

Grading will be based on the content of the submitted report (50 points) and participation (50 points).

Prerequisite Reading

It is recommended that students prepare in advance for the lectures of each instructor listed in the lecture outline by referring to the reference books and literature listed below. Also, please note that some classes require students to watch video clips in advance.

Reference Materials

日本疫学会, はじめて学ぶやさしい疫学 第3版. 南江堂; 2018.

木原正博. 疫学 -医学的研究と実践のサイエンス. メディカルサイエンスインターナショナル. 2010

Gordis L. Epidemiology. 6th edition. Philadelphia: Elservier; 2018

Important Course Requirements

Attendance at lectures is mandatory. All assigned reports and other materials must be submitted.

Lecture No	416017				
Subject title	Biostatistics: Basic			Subject ID	GC-c6431-L
Instructors	髙橋 邦彦, 安齋 達彦[TAKAHASHI Kunihiko, ANZAI Tatsuhiko]				
Semester	Spring 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

G-Lab(or via zoom)

Course Purpose and Outline

Course Purpose:

This course aims to review fundamentals of biostatistics.

Outline:

This course gives lectures on the basis of biostatistical methods and their application to studies in clinical epidemiology.

Course Objective(s)

The goal is to be able to apply appropriate statistical methods to data and, to be able to interpret the performance of statistical analyses in accordance with the research objectives.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	5/9	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
2	5/15	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
3	5/23	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
4	5/30	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
5	6/6	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
6	6/13	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
7	6/20	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
8	6/27	18:00-19:30	共用講義室 2, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko

Lecture Style

Lectures

Course Outline

Refer to the course schedule

Grading System

Participation (50%) and report (50%).

Prerequisite Reading

Students are expected to have worked thorough the materials in accordance with the topics before attending the class.

Reference Materials

・古川俊之(監修), 丹後俊郎(著). 医学への統計学. 第3版. 朝倉書店. 2013.

・Pagano M, Gauvreau K. Principles of Biostatistics. 2nd ed. CRC Press. 2000.

Lecture No	416018				
Subject title	Biostatistics: Advanced I			Subject ID	GC-c6432-L
Instructors	髙橋 邦彦, 安齋 達彦[TAKAHASHI Kunihiko, ANZAI Tatsuhiko]				
Semester	Fall 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

G-Lab(or via zoom)

Course Purpose and Outline

Course Purpose: This course aims to develop the knowledge on Bayesian statistics and meta-analysis.

Outline: This course gives lectures on fundamentals and applications of Bayesian statistics and meta-analysis as the advanced topics in biostatistics.

Course Objective(s)

The objective of this course is to be able to conduct Bayesian inference and meta-analysis on a small number of studies.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/2	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
2	10/16	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		ANZAI Tatsuhiko
3	10/23	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		HOSHINO Takahiro
4	10/30	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
5	11/6	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
6	11/13	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
7	11/20	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		NOMA Hisashi
8	11/27	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		HATTORI Satoshi

Lecture Style

Lectures

Course Outline

Refer to the course schedule

Grading System

Participation (50%) and report (50%).

Prerequisite Reading

Students are expected to have worked thorough the materials in accordance with the topics before attending the class.

Reference Materials

・Lesaffre E, Lawson AB. Bayesian Biostatistics. Wiley. 2012.

・Spiegelhalter DJ, Abrams KR, Myles JP. Bayesian Approaches to Clinical Trials and Health-Care Evaluation.Wiley. 2004.

・丹後俊郎, 横山徹爾, 高橋邦彦. 空間疫学への招待. 朝倉書店. 2007.

・丹後俊郎. 新版メタアナリシス入門. 朝倉書店. 2016.

・Borenstein M, et al. Introduction to Meta-Analysis. 2nd ed. Wiley. 2021.

Lecture No	416019				
Subject title	Biostatistics: Advanced Ⅱ			Subject ID	GC-c6433-L
Instructors	髙橋 邦彦, 清水 秀幸, 安齋 達彦, 漆原 尚巳[TAKAHASHI Kunihiko, SHIMIZU Hideyuki, ANZAI Tatsuhiko, URUSHIHARA Hisashi]				
Semester	Fall 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

G-Lab(or via zoom)

Course Purpose and Outline

Course Purpose: This course aims to develop the knowledge on pharmacoepidemiology and artificial interigence in the medical research as the advanced topics in biostatistics.

Outline: This course gives lectures on fundamentals and applications in pharmacoepidemiology, and artificial interigence in the medical research.

Course Objective(s)

The goal is to be able to conduct the risk assessment of drug use in pharmacoepidemiology, and to be able to interpret the performance of artificial interigence analysis in the medical research.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/3	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
2	10/10	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko
3	10/17	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		ANZAI Tatsuhiko
4	10/24	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		URUSHIHARA Hisashi
5	10/31	18:00-19:30	G-Lab, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
6	11/7	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		TAKAHASHI Kunihiko, ANZAI Tatsuhiko
7	11/14	18:00-19:30	アクティブラーニング教室, 遠隔授業(同期型)		SHIMIZU Hideyuki
8	11/21	18:00-19:30	G-Lab, 遠隔授業(同期型)		SHIMIZU Hideyuki

Lecture Style

Lectures

Course Outline

Refer to the course schedule

Grading System

Participation (50%) and report (50%).

Prerequisite Reading

Students are expected to have worked thorough the materials in accordance with the topics before attending the class.

Reference Materials

・くすりの適正使用協議会. 実例で学ぶ薬剤疫学の第一歩. レーダー出版センター. 2008.

・佐藤俊哉, 山口拓洋, 石黒智恵子(編). これからの薬剤疫学. 朝倉書店. 2021.

・景山茂, 久保田潔(編). 薬剤疫学の基礎と実践. 改訂第 3 版. ライフサイエンス出版. 2021.

・Naqa I, Murphy M (eds). Machine and Deep Learning in Oncology, Medical Physics and Radiology. Springer. 2022.

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Lecture No	416020				
Subject title	Clinical Trial Methodology: Basic			Subject ID	GC-c6434-L
Instructors	平川 晃弘[HIRAKAWA Akihiro]				
Semester	Spring 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

in-person or online lesson (by Zoom)

Course Purpose and Outline

Course Objectives

To learn the basic concepts of clinical trial methodology and statistical considerations for planning and analyzing clinical trials.

Outline

To learn the basic concepts of clinical trial methodology and statistical considerations (e.g., study design, randomization, blinding, endpoints, analysis population, sample size calculation).

Course Objective(s)

Be able to design appropriate clinical trials based on research objectives and feasibility. Be able to assess the level of evidence from clinical trial publication.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	6/29	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
2	7/4	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
3	7/6	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
4	7/18	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
5	7/20	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
6	7/25	18:00-19:30	遠隔授業(同期型)		HIRAKAWA Akihiro
7	7/27	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro
8	8/1	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro

Lecture Style

Lectures

Grading System

Attendance at least 5 out of 8 sessions required.

Participations (50%) and essay (50%)

Prerequisite Reading

To read the Ethical Guidelines for Medical and Health Research Involving Human Subjects and ICH E9 (Statistical Principles for Clinical Trials).

Reference Materials

"椿 広計 (編集), 佐藤 俊哉 (編集), 藤田 利治 (編集). これからの臨床試験—医薬品の科学的評価-原理と方法. 朝倉書店

内田一郎、芹生卓(編集). (2022) 製薬医学入門:くすりの価値最大化をめざして. メディカンル・サイエンス・インターナショナル"

Email

a-hirakawa.crc@tmd.ac.jp

Instructor's Contact Information

any time (need an appointment), 4F Building 8 North

Lecture No	416021				
Subject title	Clinical Trial Methodology: Advanced			Subject ID	GC-c6435-L
Instructors					
Semester	Fall 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

in-person or online lesson (by Zoom)

Course Purpose and Outline

Course Objectives

To acquire innovative clinical trial designs

Overview

To learn group sequential design, adaptive design, Bayesian design, platform studies, along with clinical trial designs in oncology.

Course Objective(s)

Be able to design appropriate clinical trials based on research objectives and feasibility. Be able to assess the level of evidence from clinical trial publication.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	9/28	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
2	10/5	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
3	10/12	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
4	10/19	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
5	10/26	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
6	11/2	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
7	11/9	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki
8	11/30	18:00-19:30	遠隔授業(同期型), アクティブラーニング教室		HIRAKAWA Akihiro, SATOU Hiroyuki

Lecture Style

Lectures

Grading System

Attendance at least 5 out of 8 sessions required.

Participations (50%) and essay (50%)

Prerequisite Reading

Required to participate in course of Clinical Trial Methodology (Basic).

Reference Materials

"椿 広計 (編集), 佐藤 俊哉 (編集), 藤田 利治 (編集). これからの臨床試験—医薬品の科学的評価-原理と方法. 朝倉書店

内田一郎、芹生卓(編集). (2022) 製薬医学入門:くすりの価値最大化をめざして. メディカンル・サイエンス・インターナショナル"

Lecture No	416022				
Subject title	Oral epidemiology: Basic			Subject ID	GC-c6436-L
Instructors					
Semester	Spring 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Zoom

Course Purpose and Outline

Course Objectives

To understand the basics of dental epidemiology.

Overview

To understand the fundamentals of dental epidemiology. To understand the international context and build a foundation for writing papers.

Course Objective(s)

Acquire basic knowledge in conducting clinical epidemiological research in the field of dentistry and oral health.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	7/3	18:00-19:30	遠隔授業(同期型)		AIDA Junn
2	7/5	18:00-19:30	遠隔授業(同期型)		AIDA Junn
3	7/19	18:00-19:30	遠隔授業(同期型)		KINO Shiho
4	7/24	18:00-19:30	遠隔授業(同期型)		ISHIMARU MIHO
5	7/26	18:00-19:30	遠隔授業(同期型)		AIDA Junn
6	7/31	18:00-19:30	遠隔授業(同期型)		MATSUYAMA Yuusuke
7	9/27	18:00-19:30	遠隔授業(同期型)		AIDA Junn
8	10/4	18:00-19:30	遠隔授業(同期型)		AIDA Junn

Lecture Style

Depends on the lectures of the course instructor.

Course Outline

See table.

Grading System

Attendance at least 5 out of 8 sessions is required. Grading will be based on the content of the submitted report (50 points) and participation (50 points).

Prerequisite Reading

It is recommended that students prepare in advance for the lectures of each instructor listed in the lecture outline by referring to the reference books and literature listed below. Also, please note that some classes require the viewing of videos, etc., prior to the lecture.

Lecture No	416023				
Subject title	Epidemiology: Adcanced			Subject ID	GC--c6437--L
Instructors					
Semester	Fall 2023	Level	1st year	Units	1
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Zoom

Course Purpose and Outline

Course Objectives

To understand the development of epidemiology.

Overview

In order to understand the advanced contents of epidemiology, students will learn the actual and advanced contents of analysis using statistical software.

Course Objective(s)

Acquire developmental knowledge and practical skills in conducting epidemiological studies.

Lecture plan

No	Date	Time	Room	Lecture theme	Staff
1	10/11	18:00-19:30	情報検索室1		TANI Yukako
2	10/13	18:00-19:30	情報検索室1		TANI Yukako
3	10/18	18:00-19:30	遠隔授業(同期型)		AIDA Junn
4	10/20	18:00-19:30	情報検索室1		AIDA Junn
5	10/25	18:00-19:30	遠隔授業(同期型)		ISUMI Aya, DOI Satomi
6	11/8	18:00-19:30	遠隔授業(同期型)		KINO Shiho
7	11/22	18:00-19:30	遠隔授業(同期型)		MATSUYAMA Yuusuke
8	11/29	18:00-19:30	遠隔授業(同期型)		KINO Shiho, ISHIMARU MIHO

Lecture Style

Depends on the lectures of the course instructor.

Course Outline

See table.

Grading System

Attendance at least 5 out of 8 sessions is required. Grading will be based on the content of the submitted report (50 points) and participation (50 points).

Prerequisite Reading

It is recommended that students prepare in advance for the lectures of each instructor listed in the lecture outline by referring to the reference books and literature listed below. Also, please note that some classes require the viewing of videos, etc., prior to the lecture.

Reference Materials

Epidemiology: Beyond the Basics 4th edition, Jones & Bartlett Learning

Important Course Requirements

Attendance at lectures is mandatory. All assigned reports and other materials must be submitted.

Lecture No	041039				
Subject title	Lecture of Oral Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor

Course Purpose and Outline

Pathogenesis of diseases are reflected in genes, proteins, tussues, 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.

Course Objective(s)

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.

Lecture Style

Lecture, microscopy reading and discussion.

Course Outline

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.

Grading System

Comprehensive assessment based on participation and activity in lectures, practice and discussion.

Prerequisite Reading

None required.

Reference Materials

Provided on request.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041040				
Subject title	Practice of Oral Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor

Course Purpose and Outline

Pathogenesis of diseases are reflected in genes, proteins, tussues, 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.

Course Objective(s)

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.

Lecture Style

Lecture, microscopy reading and discussion.

Course Outline

On the basis of knowledges obrained from the lecture, students practice basic methods of genetic, biochemical, cell biological and clinicopatholgocal analyses.

Grading System

Comprehensive assessment based on participation and activity in lectures, practice and discussion.

Prerequisite Reading

None required.

Reference Materials

Provided on request.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041041				
Subject title	Laboratory practice of Oral Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Conference Room, Dept of Oral Pathology, Build No.1 East, 4th floor / 1st Lab, Dept of Oral Pathology, Build No.1 East, 4th floor

Course Purpose and Outline

Pathogenesis of diseases are reflected in genes, proteins, tussues, 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.

Course Objective(s)

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.

Lecture Style

Lecture, microscopy reading and discussion.

Course Outline

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.

Grading System

Comprehensive assessment based on participation and activity in lectures, practice and discussion.

Prerequisite Reading

None required.

Reference Materials

Provided on request.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041042				
Subject title	Lecture of Bacterial Pathogenesis			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

M&D Tower, 8F Seminar room 10, Staff room of department

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

A small group

Course Outline

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.

Grading System

Evaluation is based on attendance for lecture .

Prerequisite Reading

Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.

Reference Materials

No particular books are designated. Papers and references are guided for each research subject.

Important Course Requirements

Nothing particular.

Note(s) to Students

Nothing particular.

Lecture No	041043				
Subject title	Practice of Bacterial Pathogenesis			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

M&D Tower, 8F Seminar room 10, Staff room of department

Course Purpose and Outline

The purpose of the program of Bacterial Pathogenesis is to be sharying the updated information related to bacterial infection, host responses and the development of infectious diseases. Also, indigenous microflora–mediated homeostasis and pathogenesis are introduced.

Course Objective(s)

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.

Lecture Style

A small group

Course Outline

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.

Grading System

Evaluation is based on attendance for practice and the contents of presentation of students.

Prerequisite Reading

Prior to a practice, confirm the contents of introducing scientific papers and learn necessary knowledge by reference books beforehand.

Reference Materials

No particular books are designated. Papers and references are guided for each research subject.

Important Course Requirements

Nothing particular.

Note(s) to Students

Nothing particular.

Lecture No	041044				
Subject title	Laboratory practice of Bacterial Pathogenesis			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

M&D Tower, 8F Seminar room 10, Staff room of department

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

group guidance team teaching

Course Outline

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.

Grading System

Evaluation is based on thesis completion.

Prerequisite Reading

Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.

Reference Materials

No particular books are designated. Papers and references are guided for each research subject.

Important Course Requirements

Nothing particular.

Note(s) to Students

Nothing particular.

Lecture No	041045				
Subject title	Lecture of Molecular Immunology			Subject ID	
Instructors	東 みゆき, 永井 重徳, 張 晨陽[AZUMA MIYUKI, NAGAI SHIGENORI, CHOU Shinnyou]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

Lecture and Practice: M&D tower seminar room or remote (Zoom)

Course Purpose and Outline

To understand how　immune systems contrbute to healty and disease status and also to learn how to control immune-mediated diseases.

Course Objective(s)

To explain systemic and organ-specific immune responses and to bring idesa how to control immune diseases

Lecture Style

Presentation by a small group and comprehensive discussion

Course Outline

Every Monday from January 15 to　March 4,　17:00 -19:00

Select several immunology review papers from recent immunology topics, read by a small group, and then present and discuss by all members.

Grading System

Comprehensive assessment (presentation, discussion, reserach content, conference/meeting participation)

Prerequisite Reading

must review the things that you has learned in ubdergraduate Immunology classes

Reference Materials

Cellular and Molecular Immunology （Seventh Edition） Elsevier Saunders

Important Course Requirements

All lecture, presentation and discussion are provided in English.

Note(s) to Students

None

Email

AZUMA MIYUKI:miyuki.mim@tmd.ac.jp

Instructor's Contact Information

AZUMA MIYUKI: Mon~Fri PM.16:00-PM.18:00 M&D tower　Staff/Prof Room

Lecture No	041046				
Subject title	Practice of Molecular Immunology			**Subject ID**	
Instructors	東 みゆき, 永井 重徳, 張 晨陽[AZUMA MIYUKI, NAGAI SHIGENORI, CHOU Shinnyou]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

Lecture and Practice: M&D tower Seminar room or remote (Zoom)

Course Purpose and Outline

To understand how　immune systems contrbute to healty and disease status and also to learn how to control immune-mediated diseases.

Course Objective(s)

To explain systemic and organ-specific immune responses and to bring ideas how to control immune diseases

Lecture Style

Presentation by a small group and comprehensive discussion

Course Outline

To understand basic and update technology of immunological research and to try to make own study plan

Grading System

Comprehensive assessment (presentation, discussion, resrach content, conference/meeting participation)

Prerequisite Reading

must review the things that you has learned in ubdergraduate Immunology classes

Reference Materials

Cellular and Molecular Immunology （Seventh Edition） Elsevier Saunders

Important Course Requirements

All lecture, presentation and discussion are provided in English.

Note(s) to Students

None

Email

AZUMA MIYUKI:miyuki.mim@tmd.ac.jp

Instructor's Contact Information

AZUMA MIYUKI: Mon~Fri PM.16:00-PM.18:00 M&D tower　Staff/Prof Room

Lecture No	041047				
Subject title	Laboratory practice of Molecular Immunology			**Subject ID**	
Instructors	東 みゆき, 永井 重徳, 張 晨陽[AZUMA MIYUKI, NAGAI SHIGENORI, CHOU Shinnyou]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Molecular Immunology Laboratory 1 and 2

Course Purpose and Outline

To learn how to perform Immunology Research

Course Objective(s)

To learn how to find questions, how to resolve, how to perform research, and how to think.

Lecture Style

To make research plan, perform research, organize the results, and present the results.

Course Outline

Perform

Grading System

Comprehensive assessment (presentation, discussion, reserch content, conference/meeting participation)

Prerequisite Reading

must review the things that you has learned in previous Immunology classes and read recent related papers.

Reference Materials

Cellular and Molecular Immunology （Seventh Edition） Elsevier Saunders

Important Course Requirements

All lecture, presentation and discussion are provided in English.

Note(s) to Students

None

Email

AZUMA MIYUKI:miyuki.mim@tmd.ac.jp

Instructor's Contact Information

AZUMA MIYUKI: Mon~Fri PM.16:00-PM.18:00 M&D tower Staff/Prof Room

Lecture No	041048				
Subject title	Lecture of Advanced Biomaterials			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please contact the faculty adviser before attending class.

Course Purpose and Outline

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.

Course Objective(s)

Acquire the knowledge about the biomedical and dental materials

Lecture Style

All coerces are basically few people education system for providing free discussion.

Course Outline

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.

Grading System

Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.

Prerequisite Reading

Prerequisite reading will be requested, if necessary

Reference Materials

Phillip's Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041049				
Subject title	Practice of Advanced Biomaterials			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Please contact the faculty adviser before attending class.

Course Purpose and Outline

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.

Course Objective(s)

Acquire the knowledge about the biomedical and dental materials

Lecture Style

All coerces are basically few people education system for providing free discussion.

Course Outline

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.

Grading System

Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.

Prerequisite Reading

Prerequisite reading will be requested, if necessary

Reference Materials

Phillip's Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041050				
Subject title	Laboratory practice of Advanced Biomaterials			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please contact the faculty adviser before attending class.

Course Purpose and Outline

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.

Course Objective(s)

Acquire the knowledge about the biomedical and dental materials

Lecture Style

All coerces are basically few people education system for providing free discussion.

Course Outline

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.

Grading System

Comprehensive assessment based on participation, report for lecture, activity for the academic meeting.

Prerequisite Reading

Prerequisite reading will be requested, if necessary

Reference Materials

Phillip's Science of Dental Materials 11th ed. (Annusavice K, Saunders, 2003)

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415054				
Subject title	Lecture of Dental Radiology and Radiation Oncology			Subject ID	
Instructors	三浦 雅彦[MIURA MASAHIKO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Remote lectures.Those will be given through a Zoom system（Make sure by contacting me before each lecture or seminar）

Course Purpose and Outline

To understand cutting edge of dental radiology, radiation biology, and radiation oncology

Course Objective(s)

To understand the concept and research trend of translational research regarding dental radiology, radiation biology, and radiation oncology

Lecture Style

To give lectures and practice to a small number of students.

To cultivate ability to extract problems and constitute your own idea through discussions.

Course Outline

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.

Available program

・Seminer：Oct,18～Dec,20 2023 on every Wednesday 8:00am～9:00am

・Lecture：

Journal Club：Oct,18～Dec,20 2023 on every Wednesday 17:00am～19:00am

Research in Progress：Make sure by contacting me before lecture

・Special Lecture：Training Program for Specialists in Cancer「Radiation Biology Course」Aug,28～Aug,31

Grading System

Totally evaluate students' achievements based on the presence to lectures and report .

Prerequisite Reading

Read the reference material described below and grasp the outline

Reference Materials

Radiobiology for the radiologist, 8th ed.／Eric J. Hall, Amato J. Giaccia,Hall, Eric J.,Giaccia, Amato J.,：Wolters Kluwer, 2019

臨床放射線腫瘍学 ： 最新知見に基づいた放射線治療の実践／日本放射線腫瘍学会, 日本放射線腫瘍学研究機構編集,日本放射線腫瘍学会,日本放射線腫瘍学研究機構,：南江堂, 2012

放射線医科学 ： 生体と放射線・電磁波・超音波／近藤隆 [ほか] 編集,近藤 隆,島田 義也,田内 広(分子生物学),平岡 真寛,三浦 雅彦,宮川 清(19―),宮越 順二,大西 武雄,松本 英樹：医療科学社, 2016

歯科臨床における画像診断アトラス／日本歯科放射線学会 編,日本歯科放射線学会：医歯薬出版, 2020

White and Pharoah's Oral Radiology, 8th ed.／Maliya and Lam：Elsevier/Mosby, 2018

歯科放射線学／岡野友宏, 小林馨, 有地榮一郎編 ; 浅 海淳一 [ほか] 執 筆,岡野, 友宏,小 林, 馨,有地, 榮一 郎,浅海, 淳一：医歯薬出版, 2018

Lecture No	415055				
Subject title	Practice of Dental Radiology and Radiation Oncology			**Subject ID**	
Instructors	三浦 雅彦[MIURA MASAHIKO]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Remote lectures will be given through a Zoom system (Make sure by contacting me before each lecture or seminar)

Course Purpose and Outline

To understand cutting edge of dental radiology, radiation biology, and radiation oncology

Course Objective(s)

To understand the concept and research trend of translational research regarding dental radiology, radiation biology, and radiation oncology

Lecture Style

To give lectures and practice to a small number of students.

To cultivate ability to extract problems and constitute your own idea through discussions.

Course Outline

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.

Available program

Clinical Conference : On every Friday 18:00～17:00

Grading System

Totally evaluate students' achievements based on the presence to lectures or seminars and reports regarding their research and presentation.

Prerequisite Reading

Read the reference materials described below and grasp the outline

Reference Materials

Radiobiology for the radiologist, 8th ed／Eric J. Hall, Amato J. Giaccia,Hall, Eric J.,Giaccia, Amato J.,:Wolters Kluwer, 2019

臨床放射線腫瘍学 : 最新知見に基づいた放射線治療の実践／日本放射線腫瘍学会, 日本放射線腫瘍学研究機構編集,日本放射線腫瘍学会,日本放射線腫瘍学研究機構,:南江堂, 2012

放射線医科学 : 生体と放射線・電磁波・超音波／近藤隆 [ほか] 編集,近藤 隆,島田 義也,田内 広(分子生物学),平岡 真寛,三浦 雅彦,宮川 清(19―),宮越 順二,大西 武雄,松本 英樹:医療科学社, 2016

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, 8rh ed／Maliya and Lam:Elsevier/Mosby, 2018

歯科臨床における画像診断アトラス／日本歯科放射線学 編, 日本歯科放射線学会:医歯薬出版, 2020

Lecture No	415056				
Subject title	Laboratory of Dental Radiology and Radiation Oncology			**Subject ID**	
Instructors	三浦 雅彦[MIURA MASAHIKO]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Make sure by contacting me before each practice.

Course Purpose and Outline

To perform experiments according to each specific theme regarding dental radiology and radiation oncology.

Course Objective(s)

To try to get novel findings through experiments according to each specific theme regarding dental radiology and radiation oncology.

Lecture Style

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.

Course Outline

Goals/Outline:

The outline is to learn basic techniques required for attaining your research themes (e.g., tissue culture techniques, X-ray irradiation, radiation dosimetry, Western blotting, gene transfer, real time imaging using fluorescent proteins)

Available programs: Participate in each research group

Grading System

Totally evaluate students' achievements based on the presence to lectures or seminars, presentation, and reports regading their research.

Prerequisite Reading

Read the reference materials described below and grasp the outline

Reference Materials

Radiobiology for the radiologist, 8th ed／Eric J. Hall, Amato J. Giaccia,Hall, Eric J.,Giaccia, Amato J.,:Wolters Kluwer, 2019

臨床放射線腫瘍学 : 最新知見に基づいた放射線治療の実践／日本放射線腫瘍学会, 日本放射線腫瘍学研究機構編集,日本放射線腫瘍学会,日本放射線腫瘍学研究機構,:南江堂, 2012

放射線医科学 : 生体と放射線・電磁波・超音波／近藤隆 [ほか] 編集,近藤 隆,島田 義也,田内 広(分子生物学),平岡 真寛,三浦 雅彦,宮川 清(19―),宮越 順二,大西 武雄,松本 英樹:医療科学社, 2016

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

歯科臨床における画像診断アトラス／日本歯科放射線学会 編, 日本歯科放射線学会:医歯薬出版, 2020

Lecture No	415069				
Subject title	Lecture of Oral and Maxillofacial Surgical Oncology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					
・留学生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.					

Prerequisite Reading

TextBook

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

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

最新口腔外科学／榎本昭二:医歯薬出版, 2017

Lecture No	415070				
Subject title	Practice of Oral and Maxillofacial Surgical Oncology			Subject ID	
Instructors	原田　浩之[HARADA HIROYUKI]				
Semester	YearLong 2023	Level	2nd year	Units	4
Course by the instructor with practical experiences					

・留学生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.

Prerequisite Reading

TextBook

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

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

標準口腔外科学／榎本昭二:医歯薬出版, 2017

Lecture No	415071				
Subject title	Laboratory of Oral and Maxillofacial Surgical Oncology			Subject ID	
Instructors	原田　浩之[HARADA HIROYUKI]				
Semester	YearLong 2023	Level	3rd year	Units	8
Course by the instructor with practical experiences					

留学生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.

Prerequisite Reading

TextBook

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

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

標準口腔外科学／榎本昭二:医歯薬出版, 2017

Lecture No	041063				
Subject title	Lecture of Dental Anesthesiology and Orofacial Pain Management			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

This varies by program, so please check with your instructor before taking the course.

Course Purpose and Outline

To study general anesthesiology in dental medicine. In other words, students will study and research local anesthesia, general anesthesia, sedation, and safety management of patients with systemic diseases, and acquire dental anesthesiology as clinical medicine.

Course Objective(s)

The student will be able to perform an accurate assessment of the general condition of the patient undergoing dental treatment, including examination, various tests, and medical interview. Based on these evaluations, the student will be able to select and implement the appropriate systemic management methods, i.e., local anesthesia, general anesthesia, sedation, and monitoring, according to the content of treatment. In addition, students will acquire the knowledge and skills to respond quickly to emergency situations. To be able to plan, conduct, and report basic research for this purpose.

Lecture Style

Seminars, conferences, and special lectures are held regularly, and students are expected to attend and participate in them. In the seminars, students present and discuss the progress of their own research. In clinical training, students are given clinical guidance on the days they are assigned.

Grading System

To comprehensively study the basic knowledge of local anesthesia, general anesthesia, sedation, systemic management, pain diseases and pain treatment necessary for dental medicine and dental care, and to form the foundation for specialists in the field of anesthesiology and biomedical management. Students will learn about the pharmacological effects and mechanisms of action of drugs used in anesthesia and sedation through lectures, clinical practice, and research. In terms of research, we aim to elucidate the neurophysiological mechanisms of pain and its modification mechanisms, and to develop new pain control methods and local anesthesia methods.

Prerequisite Reading

Reference Materials

Miller's anesthesia／editor-in-chief, Michael A. Gropper ; honorary editor, Ronald D. Miller ; co-editors, Neal H. Cohen ... [et al.],Gropper, Michael A.,Miller, Ronald D.,Cohen, Neal H.,: Elsevier, 2020

歯科麻酔学／一戸達也 [ほか] 編 ; 福島和昭 [ほか] 執筆,一戸, 達也,福島, 和昭,: 医歯薬出版, 2019

Lecture No	041064				
Subject title	Practice of Dental Anesthesiology and Orofacial Pain Management			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

This varies by program, so please check with your instructor before taking the course.

Course Purpose and Outline

To study general anesthesiology in dental medicine. In other words, students learn and study local anesthesia, general anesthesia, sedation, and safety management of patients with systemic diseases, and acquire dental anesthesiology as clinical medicine.

Course Objective(s)

The student will be able to perform an accurate assessment of the general condition of the patient undergoing dental treatment, including examination, various tests, and medical interview. Based on these evaluations, the student will be able to select and implement the appropriate systemic management methods, i.e., local anesthesia, general anesthesia, sedation, and monitoring, according to the content of treatment. In addition, students will acquire the knowledge and skills to respond quickly to emergency situations. To be able to plan, conduct, and report basic research for this purpose.

Lecture Style

Seminars, conferences, and special lectures are held regularly, and students are expected to attend and participate in them. In the seminars, students present and discuss the progress of their own research. In clinical training, students are given clinical guidance on the days they are assigned.

Course Outline

Students will learn the basic physiological and pharmacological knowledge and techniques of local anesthesia, general anesthesia, and sedation necessary for clinical dentistry, as well as the pathology of painful diseases. Students will also learn about the pathology of painful diseases. In addition, they will acquire basic knowledge about the pathogenesis of pain and how to control it.

Prerequisite Reading

In this course, students will study, research, and conduct anesthesiology based on dental medicine, so it is necessary to have basic knowledge and skills in dental practice. In addition, students will be engaged in research on basic medicine and systemic management, and will also consider clinical applications.

TextBook

歯科麻酔学／一戸達也 [ほか] 編 ; 福島和昭 [ほか] 執筆,一戸, 達也,福島, 和昭,:医歯薬出版, 2019

Miller's anesthesia／editor-in-chief, Michael A. Gropper ; honorary editor, Ronald D. Miller ; co-editors, Neal H. Cohen ... [et al.],Gropper, Michael A.,Miller, Ronald D.,Cohen, Neal H.,:Elsevier, 2020

Lecture No	041065				
Subject title	Laboratory practice of Dental Anesthesiology and Orofacial Pain Management			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

This varies by program, so please check with your instructor before taking the course.

Course Purpose and Outline

To study general anesthesiology in dental medicine. In other words, students learn and study local anesthesia, general anesthesia, sedation, and safety management of patients with systemic diseases, and acquire dental anesthesiology as clinical medicine.

Course Objective(s)

The student will be able to perform an accurate assessment of the general condition of the patient undergoing dental treatment, including examination, various tests, and medical interview. Based on these evaluations, the student will be able to select and implement the appropriate systemic management methods, i.e., local anesthesia, general anesthesia, sedation, and monitoring, according to the content of treatment. In addition, students will acquire the knowledge and skills to respond quickly to emergency situations. To be able to plan, conduct, and report basic research for this purpose.

Lecture Style

Seminars, conferences, and special lectures are held regularly, and students are expected to attend and participate in them. In the seminars, students present and discuss the progress of their own research. In clinical training, students are given clinical guidance on the days they are assigned.

Course Outline

We aim to establish and develop the principles of non-invasive transdermal and transmucosal drug delivery methods. We will also experimentally elucidate the mechanism of pain generation and develop methods to control it.

Grading System

The evaluation will be based on the status of active participation in discussions and debates, as well as participation in presentations and statements, including presentation strategies. In addition, a comprehensive evaluation will be made based on the content of the research, the degree of involvement in research conferences, and the number of conference presentations.

Prerequisite Reading

In this course, students will study, research, and conduct anesthesiology based on dental medicine, so it is necessary to have basic knowledge and skills in dental practice. In addition, students will be engaged in research on basic medicine and systemic management, and will also consider clinical applications.

TextBook

Miller's anesthesia／editor-in-chief, Michael A. Gropper ; honorary editor, Ronald D. Miller ; co-editors, Neal H. Cohen ... [et al.],Gropper, Michael A.,Miller, Ronald D.,Cohen, Neal H.,:Elsevier, 2020

歯科麻酔学／一戸達也 [ほか] 編 ; 福島和昭 [ほか] 執筆,一戸, 達也,福島, 和昭,:医歯薬出版, 2019

Lecture No	041069				
Subject title	Lecture of Pediatric Dentistry / Special Needs Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Online lecture by Zoom or lecture room 4, 4th floor, Bldg7.

Course Purpose and Outline

understanding of the relationship between oral and maxillofacial development and systemic development or diseases and disorders.

Course Objective(s)

1）Explain the development and function of the oral and maxillofacial lesions.

2）Explain the effects of systemic diseases and disorders on oral and maxillofacial development and its functions.

Lecture Style

Case presentation, Journal reading (original article, case reports)

Course Outline

1）Understanding the development and growth of oral and maxillofacial lesions.

2）Understanding the relationship between oral and maxillofacial function and its anomalies.

3）Understanding the relationship between oral and maxillofacial function and disabilities.

Grading System

Formative assessment by learning portfolios, reports, and oral examination.

class performance 30%, portfolios 40%, oral examination10%, reports20%

Prerequisite Reading

1）summarise of diseases and extraction of clinical problems for each case

2）summarise of each disease

3）literature search

4）summarise of questions and answers

TextBook

小児歯科学／白川哲夫, 飯沼光生, 福本敏編 ; 白川哲夫 [ほか] 執筆,白川, 哲夫,飯沼, 光生,福本, 敏,:医歯薬出版, 2017

スペシャルニーズデンティストリー障害者歯科／日本障害者歯科学会 編集,日本障害者歯科学会,:医歯薬出版, 2017

Reference Materials

小児歯科マニュアル／前田隆秀編集,前田, 隆秀,:南山堂, 2005

Pediatric dentistry : a clinical approach／editors, Göran Koch and Sven Poulsen,Koch, Göran,Poulsen, Sven,:Wiley-Blackwell, 2009

Pediatric dentistry : infancy through adolescence／[edited by] Jimmy R. Pinkham ...[et al.],Pinkham, J. R.,:Elsevier Saunders, 2005

McDonald and Avery's dentistry for the child and adolescent／[edited by] Jeffrey A. Dean, David R. Avery, Ralph E. McDonald,McDonald, Ralph E.,Avery, David R.,Dean, Jeffrey A.,:Mosby Elsevier, 2011

Lecture No	041070				
Subject title	Practice of Pediatric Dentistry / Special Needs Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese

Lecture place

Online lecture by Zoom or lecture room 4, 4th floor, Bldg7.

Course Purpose and Outline

understanding of the relationship between oral and maxillofacial development and systemic development or diseases and disorders.

Prerequisite Reading

TextBook

小児歯科学／白川哲夫, 飯沼光生, 福本敏編 ; 白川哲夫 [ほか] 執筆,白川, 哲夫,飯沼, 光生,福本, 敏,:医歯薬出版, 2017

スペシャルニーズデンティストリー障害者歯科／日本障害者歯科学会 編集,日本障害者歯科学会,:医歯薬出版, 2017

Reference Materials

小児歯科マニュアル／前田隆秀編集,前田, 隆秀,:南山堂, 2005

Pediatric dentistry : a clinical approach／editors, Göran Koch and Sven Poulsen,Koch, Göran,Poulsen, Sven,:Wiley-Blackwell, 2009

Pediatric dentistry : infancy through adolescence／[edited by] Jimmy R. Pinkham ...[et al.],Pinkham, J. R.,:Elsevier Saunders, 2005

Lecture No	041071				
Subject title	Laboratory practice of Pediatric Dentistry / Special Needs Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					
Lecture place Laboratory of the Division of Pediatric Dentistry / Special Needs Dentistry, 11th floor, Dental Building North.					
Prerequisite Reading					

Lecture No	041072				
Subject title	Lecture of Orthodontic Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Contact to the person in charge beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Generally in a small class.

Course Outline

Check with the teacher in charge for the program which is not specifically scheduled.

Goals/Outline:

Available programs:

Lecture Apr. 11– Feb. 13 every Tuesday, 9:30–12:00

Special Lecture as needed

Seminar as needed

Grading System

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.

Prerequisite Reading

Prepare in advance when a reference book or paper is instructed.

TextBook
Contemporary Orthodontics 6th edition／Proffit WR：Mosby，2018
Orthodontics Current Principles & Techniques 7th Ed.／Lee Graber, Katherine Vig and more：Elsevier，2022
Reference Materials
Other reference book and papers will be instructed each time.
Important Course Requirements
Please offer in advance when inevitably absent.
Note(s) to Students
The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.

Lecture No	041073				
Subject title	Practice of Orthodontic Science			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Contact to the person in charge beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Generally in a small class.

Course Outline

Check with the teacher in charge for the program which is not specifically scheduled.

Goals/Outline:

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.

Available programs:

Training for clinical examination as needed
Clinical practice (see patients) 4.5 hour/week
Clinical study by observation (treatments, diagnoses) every Tuesday and Friday, 9:00–12:00
Clinical Conference as needed
Training for diagnosis and treatment planning (basic skill, typodont) as needed
Seminar for Sociology as needed
Department Seminar every Wednesday and Friday, 17:00–19:00

Grading System 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.
Prerequisite Reading Prepare in advance when a reference book or paper is instructed.
TextBook Contemporary Orthodontics 6th edition／Proffit WR：Mosby, 2018 Orthodontics Current Principles & Techniques 7th Ed.／Lee Graber, Katherine Vig and more：Elsevier, 2022
Reference Materials Other reference book and papers will be instructed each time.
Important Course Requirements Please offer in advance when inevitably absent.
Note(s) to Students The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.

Lecture No	041074				
Subject title	Laboratory practice of Orthodontic Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Contact to the person in charge beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Generally in a small class.

Course Outline

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

Grading System

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.

Prerequisite Reading

Prepare in advance when a reference book or paper is instructed.
TextBook Contemporary Orthodontics 6th edition／Proffit WR：Mosby，2018 Orthodontics Current Principles & Techniques 7th Ed.／Lee Graber, Katherine Vig and more：Elsevier，2022
Reference Materials Other reference book and papers will be instructed each time.
Important Course Requirements Please offer in advance when inevitably absent.
Note(s) to Students The final evaluation will be held in the end of every year to acknowledge the promotion or graduation.

Lecture No	041075				
Subject title	Lecture of Cariology and Operative Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All lectures will be given in English. Research practice will be in English for international students.

Lecture place

Lectures will be in person or online. Lecture method will be notified in advance. Please check the lecture method before attending.

Course Purpose and Outline

To learn about diagnosis, prevention and treatment of dental caries and other diseases of dental hard tissue, as well as related dental materials and devices, and to learn research methods of these fields.

Course Objective(s)

To be able to expalin 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

Lecture Style

Lectures will be given in English. Practice and Lab may be in small groups. To encourage active and high-level discussion, graduate students not enrolled in this course and non-graduate students are allowed to participate.

The lecture schedule will be announced separately.

Course Outline

Goals/Outline:

To recognize the latest research results on dental caries and adhesive restorative materials, and to develop the ability to identify the research topic. Through group discussions for research results and conference presentations, understand the research plan and experimental methods.

Grading System

Scored by attendance and attitude.

Prerequisite Reading

Reading related articles and textbook before lecture is encouraged.

Reference Materials

Fundamentals of Operative Dentistry, Summitt JB et.al.

Art & Science of Operative Dentistry, Roberson TM et. Al.

Important Course Requirements

The score is evaluated based on attendance of the lecture, examination, presentation and publication of reserch.

Note(s) to Students

To take Lecture is required for participation in Practice and Lab.

Lecture No	041076				
Subject title	Practice of Cariology and Operative Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

English is used in all lectures.

Lecture place

Please ask a contact person.

Course Purpose and Outline

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.

Course Objective(s)

To be able to expalin 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

Lecture Style

Lectures will be given in English. Practice and Lab may be in small groups. To encourage active and high-level discussion, graduate students not enrolled in this course and non-graduate students are allowed to participate.

The lecture schedule will be announced separately.

Course Outline

Goals/Outline:

The goal of this course is to understand basic and clinical research about carioloy and operative dentistry and to form a research project of own research.

Grading System

Scored by attendance and attitude.

Prerequisite Reading

Related articles and textboox should be read before lecture.

Reference Materials

Fundamentals of Operative Dentistry, Summitt JB et.al.

Art & Science of Operative Dentistry, Roberson TM et. Al.

Important Course Requirements

The score is evaluated based on attendance of the lecture, examination, presentation and publication of reserch.

Note(s) to Students

To take Lecture is required for participation in Practice and Lab.

Lecture No	041077				
Subject title	Laboratory practice of Cariology and Operative Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All lectures will be given in English. Research practice will be in English for international student.

Lecture place

lectures will be in person or online. Lecture method will be notified in advance. Please check the lecture method before attending.

Course Purpose and Outline

To learn about diagnosis, prevention and treatment of dental caries and other diseases of dental hard tissues, as well as and related dental materials and devices, and to learn research methods of these fields.

Course Objective(s)

To be able to expalin 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

Lecture Style

Lectures will be given in English. Practice and Lab may be in small groups. To encourage active and high-level discussion, graduate students not enrolled in this course and non-graduate students are allowed to participate.

The lecture schedule will be announced separately.

Course Outline

Goals/Outline:

To recognize the latest research results on dental caries and adhesive restorative materials, and to develop the ability to identify the research topic. Through group discussion for research results and conference presentations, understand the research plan and experimental methods.

Grading System

Scored by attendance, examination and presentation

Prerequisite Reading

Reading related articles and textbook before lecture is encouraged.

Reference Materials

Fundamentals of Operative Dentistry, Summitt JB et.al.

Art & Science of Operative Dentistry, Roberson TM et. Al.

Important Course Requirements

The score is evaluated based on attendance of the lecture, examination, presentation and publication of reserch.

Note(s) to Students

To take Lab is required for the enrollment in this course.

Lecture No	415023				
Subject title	Lecture of Masticatory Function and Health Science			**Subject ID**	
Instructors	笛木 賢治[FUEKI KENJI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Partial classes are taught in English					
Prerequisite Reading					
Email FUEKI KENJI:kunfu.rpro@tmd.ac.jp					
Instructor's Contact Information FUEKI KENJI:Please make a contact via E-mail.					

Lecture No	415024				
Subject title	Practice of Masticatory Function and Health Science			**Subject ID**	
Instructors	笛木 賢治[FUEKI KENJI]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English.					
Prerequisite Reading					

Lecture No	415025				
Subject title	Laboratory practice of Masticatory Function and Health Science			**Subject ID**	
Instructors	笛木 賢治[FUEKI KENJI]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Partial classes are taught in English					
Prerequisite Reading					

Lecture No	041081				
Subject title	Lecture of Pulp Biology and Endodontics			Subject ID	
Instructors	興地 隆史, 川島 伸之, 海老原 新, 渡邉 聡, 寺内 吉継, 林 洋介, 田澤 建人, 牧 圭一郎, 木村 俊介[OKIJI TAKASHI, KAWASHIMA NOBUYUKI, EBIHARA ARATA, WATANABE SATOSHI, Yoshitsugu Terauchi, HAYASHI Yohsuke, TAZAWA Kennto, MAKI Keiichirou, KIMURA Shunnsuke]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

The venue will be announced.

Course Purpose and Outline

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.

Course Objective(s)

After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicularl diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.

Lecture Style

All lectures are conducted in English.

Lectures may be held as live international lectures linked to foreign universities.

Sufficient question and discussion time is allocated for the student to actively engage in the above programs.

Course Outline

The lectures deal with current knowledge on (i) immunological and pathophysiological mechanisms involved in the development of pulpal and periradicularl 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)

Grading System

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.

Prerequisite Reading

Students should confirm the basic knowledge prior to each class, refering to related papers and references shown below.

Reference Materials

1. Seltzer and Bender's Dental Pulp. Hargreaves KM, Goodis H & Tay FR (eds), 2nd ed., Quintessence Publishing, 2012.
2. Cohen's Pathways of the Pulp. Berman LH & Hargreaves KM (eds.), 12th ed., Mosby, 2021.
3. Textbook of Endodontology. Bjørndal L, Kirkevang L-L & Whitworth J (eds), 3rd ed., Wiley-Blackwell, 2018.

Lecture No	041082				
Subject title	Practice of Pulp Biology and Endodontics			**Subject ID**	
Instructors	興地 隆史, 川島 伸之, 海老原 新, 渡邉 聡, 田澤 建人, 牧 圭一郎, 木村 俊介[OKIJI TAKASHI, KAWASHIMA NOBUYUKI, EBIHARA ARATA, WATANABE SATOSHI, TAZAWA Kennto, MAKI Keiichirou, KIMURA Shunnsuke]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

The venues will be announced during the lecture course.

Course Purpose and Outline

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.

Course Objective(s)

After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicularl diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.

Lecture Style

Partial classes are taught in English. Sufficient question and discussion time is allocated for the student to actively engage in the above programs.

Course Outline

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)

Grading System

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.

Prerequisite Reading

Students should confirm the basic knowledge prior to each class, refering to related papers and references shown below.

Reference Materials

1. Seltzer and Bender's Dental Pulp. Hargreaves KM, Goodis H & Tay FR (eds), 2nd ed., Quintessence Publishing, 2012.
2. Cohen's Pathways of the Pulp. Berman LH & Hargreaves KM (eds.), 12th ed., Mosby, 2021.
3. Textbook of Endodontology. Bjørndal L, Kirkevang L-L & Whitworth J (eds), 3rd ed., Wiley-Blackwell, 2018.

Lecture No	041083				
Subject title	Laboratory practice of Pulp Biology and Endodontics			**Subject ID**	
Instructors	興地 隆史, 川島 伸之, 海老原 新, 渡邉 聡, 田澤 建人, 牧 圭一郎, 木村 俊介[OKIJI TAKASHI, KAWASHIMA NOBUYUKI, EBIHARA ARATA, WATANABE SATOSHI, TAZAWA Kennto, MAKI Keiichirou, KIMURA Shunnsuke]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

The venues will be announced during the lecture course.

Course Purpose and Outline

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.

Course Objective(s)

After completing this course, the student should be able to describe (i) pathobiological mechanisms involved in pulpal and periradicularl diseases, (ii) principles and current research status of dental pulp regeneration, and (iii) current diagnostic and treatment measures in endodontics.

Lecture Style

Partial classes are taught in English. Sufficient question and discussion time is allocated for the student to actively engage in the above programs.

Course Outline

Students can participate in research programs, such as laser application to endodontics and immunohistochemistry.

Available program: Participation in a research group as needed.

Grading System

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.

Prerequisite Reading

Students should confirm the basic knowledge prior to each class, refering to related papers and references shown below.

Reference Materials

1. Seltzer and Bender's Dental Pulp. Hargreaves KM, Goodis H & Tay FR (eds), 2nd ed., Quintessence Publishing, 2012.
2. Cohen's Pathways of the Pulp. Berman LH & Hargreaves KM (eds.), 12th ed., Mosby, 2021.
3. Textbook of Endodontology. Bjørndal L, Kirkevang L-L & Whitworth J (eds), 3rd ed., Wiley-Blackwell, 2018.

Lecture No	415026				
Subject title	Lecture of Advanced Prosthodontics			**Subject ID**	
Instructors	若林　則幸, 村上　奈津子, 髙市　敦士, 野﨑　浩佑, 和田　淳一郎, 隅田　由香[WAKABAYASHI NORIYUKI, MURAKAMI NATSUKO, TAKAICHI Atsushi, NOZAKI KOSUKE, WADA JUNICHIRO, SUMITA YUKA]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Dental Building North, 11F

Removable Partial Prosthodontics Meeting Room, or online.

Must check the latest information at

http://www.tmd.ac.jp/pro/index.html for verification.

Course Purpose and Outline

The Removable Partial Prosthodontics course aims to provide advanced knowledge in the specialty of Prosthodontics and related research. The postgraduate students enrolled concurrently in a wide range of oral health sciences are welcomed to our class.

Course Objective(s)

The course objectives are to gain fundamental knowledge about the Prosthodontics research methodology and its updated trend beneficial for individual research directions.

Lecture Style

When an international student registers this subject for credits, this course is taught in English. Every candidate has to address his or her opinion freely to others.

Course Outline

Aims/outline:

Professor and associate professors of Advanced Prosthodontics provide lectures on their specialty research areas in Prosthodontics. Following lecture titles outline the content of this special course; "Evaluation of function and physiology in removable partial prosthodontics", "Introduction to stress analysis in prosthodontics", "Biomaterials research in prosthodontics" and "Digital technology in removable partial prosthodontics".

Goals/Objectives:

The program objectives are to provide our concept for Prosthodontics research and to equip students to critically analyze individual research directions.

Grading System

The comprehensive assessment is planned based on the presence, practice, and completion of the theme.

At least 4 presences of all 6 lectures above are necessary to finish this course.

Prerequisite Reading

Visit our website for the latest published articles:

http://www.tmd.ac.jp/pro/Research/Research.html

http://www.tmd.ac.jp/pro/70_5e8202e0a843a/PostGraduate/PostGraduate.html

Reference Materials

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.,Hearst, Norman,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, 2004

Designing clinical research : an epidemiologic approach／Stephen B. Hulley ... [et al.],Hulley, Stephen B.,Cummings, Steven R.,Browner, Warren S.,:Lippincott & Williams & Wilkins, 2001

Phillips' science of dental materials／Kenneth J. Anusavice, Chiayi Shen, H. Ralph Rawls,Anusavice, Kenneth J.,Shen, Chiayi,Rawls, H. Ralph,:Elsevier/Saunders, 2013

Note(s) to Students

Lectures are held every Monday from November.

Notice to our website for schedule and lecture information.
Reference URL https://www.tmd.ac.jp/pro/ http://www.tmd.ac.jp/pro/70_5e8202e0a843a/PostGraduate/PostGraduate.html
Email WAKABAYASHI NORIYUKI:wakabayashi.rpro@tmd.ac.jp SUMITA YUKA:yuka.mfp@tmd.ac.jp WADA JUNICHIRO:wadajun.rpro@tmd.ac.jp MURAKAMI NATSUKO:n.murakami.rpro@tmd.ac.jp TAKAICHI Atsushi:a.takaichi.rpro@tmd.ac.jp
Instructor's Contact Information WAKABAYASHI NORIYUKI:For appointment, contact by email to wakabayashi.rpro@tmd.ac.jp Visit our website at https://www.tmd.ac.jp/pro/ SUMITA YUKA:Mon-Fri 16:00-17:00 Dept. room 202, 2nd floor, 10th building. WADA JUNICHIRO:Mon., Thu., Fri.: AM.8:30-AM.9:00, Mon., Wed.: PM.5:00-AM.5:30, Dental Building North, 11th floor, Laboratory No.4. MURAKAMI NATSUKO:For appointment, contact by email. TAKAICHI Atsushi:For appointment, contact me by email.

Lecture No	415027				
Subject title	Practice of Advanced Prosthodontics			**Subject ID**	
Instructors	若林 則幸, 服部 麻里子, 村上 奈津子, 猪原 健, 髙草木 謙介, 和田 淳一郎, 谷川 千尋[WAKABAYASHI NORIYUKI, HATSUTORI MARIKO, MURAKAMI NATSUKO, Ken Inohara, TAKAKUSAKI Kennsuke, WADA JUNICHIRO, TANIKAWA Chihiro]				
Semester	YearLong 2023	**Level**	1st year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Building No.3, 3F

Prosthodontic Demonstration Room

Check our website for the latest schedule

or online.

https://www.tmd.ac.jp/pro/

Course Purpose and Outline

The Advanced Prosthodontics course aims to provide advanced knowledge in the specialty of Prosthodontics and related research. The postgraduate students who are enrolled concurrently in a wide range of oral health sciences are welcomed to our class.

Course Objective(s)

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.

Lecture Style

All classes are taught in Japanese. Every candidate has to address his or her opinion freely to the others.

Course Outline

Practices and discussions on clinical diagnosis, decision-making, and prosthodontic treatment procedures through basic training and case presentations.

Diagnosis and treatment in prosthodontic treatment will be discussed through case reports, especially in line with themes related to partial denture design, impression taking, occlusal taking and occlusion, and basic treatment for maxillofacial prosthetics.

Lecture: Three-dimensional measurement and artificial intelligence (AI), the role of dentists in community medicine, and how to proceed with research activities after graduation.

Grading System

Comprehensive assessment is planned based on the presence, practice, and completion of the theme.

At least 5 presences of all 7 lectures above are necessary to finish this course.

Prerequisite Reading

Visit our website,

Reference Materials

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

Stewart's clinical removable partial prosthodontics／Phoenix, Rodney D.,Cagna, David R.,DeFreest, Charles F.,Stewart, Kenneth L.,: Quintessence, 2003

Important Course Requirements

Notice to our website for change of schedule and lecture hall.

Note(s) to Students

Notice to our website for change of schedule and lecture hall.

Reference URL

https://www.tmd.ac.jp/pro/

Lecture No	415028				
Subject title	Laboratory practice of Advanced Prosthodontics			**Subject ID**	
Instructors	若林　則幸, 野﨑　浩佑, 村上　奈津子, 和田　淳一郎, 服部　麻里子, 髙市　敦士, 隅田　由香, 野﨑　浩佑 [WAKABAYASHI NORIYUKI, NOZAKI KOSUKE, MURAKAMI NATSUKO, WADA JUNICHIRO, HATSUTORI MARIKO, TAKAICHI Atsushi, SUMITA YUKA, NOZAKI KOSUKE]				
Semester	YearLong 2023	**Level**	2nd year	**Units**	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Dental Building North, 11F

Removable Partial Prosthodontics Meeting Room,

or online.

Check https://www.tmd.ac.jp/pro/ for verification.

Course Purpose and Outline

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.

Course Objective(s)

This course aims to gain fundamental knowledge about research ethics, research protocol, statistical analysis, oral/poster presentation, and paper preparation.

Lecture Style

All lectures are given in Japanese. The course materials are provided in Japanese and English.

Course Outline

Fundamental knowledge about research ethics, research protocol, statistical analysis, oral/poster presentation, and paper preparation will be given.

Grading System

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.

Prerequisite Reading

Visit our website for latest published articles:

http://www.tmd.ac.jp/pro/Research/Research.html

Reference Materials

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

Reference URL

https://www.tmd.ac.jp/pro/

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WAKABAYASHI NORIYUKI:For appointment, contact by email to wakabayashi.rpro@tmd.ac.jp

Visit our website at https://www.tmd.ac.jp/pro/

SUMITA YUKA:Mon-Fri　16:00-17:00 Dept. room 202, 2nd floor, 10th building.
WADA JUNICHIRO:Mon., Thu., Fri.: AM.8:30-AM.9:00, Mon., Wed.: PM.5:00-AM.5:30,　Dental Building North, 11th floor, Laboratory No.4.
MURAKAMI NATSUKO:For appointment, contact by email.
TAKAICHI Atsushi:For appointment, contact me by email.

Lecture No	415029				
Subject title	Lecture of Regenerative and Reconstructive Dental Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Building D, 3rd floor), Center for Experimental Animals, On-line

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures by the instructors and presentations by the participants regarding the given subjects

Course Outline

The purpose of this program to understand the current dental implant treatment, clinical applications and researches of the related tissue regenerations.

Grading System

based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.

Prerequisite Reading

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).

Reference Materials

・Clinical periodontology and implant dentistry.Jan Lindhe/Willey-Blackwell

・Dental Implant Prosthetics.Carl E.misch/Publisher:Elsevier MOSBY

Important Course Requirements

None

Note(s) to Students

Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.

Lecture No	415030				
Subject title	Practice of Regenerative and Reconstructive Dental Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Building D, 3rd floor), Center for Experimental Animals

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures by the instructors and presentations by the participants regarding the given subjects

Course Outline

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.

Grading System

based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.

Prerequisite Reading

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).

Reference Materials

・Clinical periodontology and implant dentistry.Jan Lindhe/Willey-Blackwell

・Dental Implant Prosthetics.Carl E.misch/Publisher:Elsevier MOSBY

Important Course Requirements

None

Note(s) to Students

Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.

Lecture No	415031				
Subject title	Laboratory practice of Regenerative and Reconstructive Dental Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

1st Lecture Room (Building 1 West, 7F), Dental Implant Clinic (Building D, 3rd floor), Center for Experimental Animals

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures by the instructors and presentations by the participants regarding the given subjects

Course Outline

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.

Grading System

based on attendance and attitude. Furthermore, publications in scientific journals and presentations in scientific meetings will be considered.

Prerequisite Reading

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).

Reference Materials

・Clinical periodontology and implant dentistry.Jan Lindhe/Willey-Blackwell

・Dental Implant Prosthetics.Carl E.misch/Publisher:Elsevier MOSBY

Important Course Requirements

None

Note(s) to Students

Lecture and journal club are in English. Students having interests in this field are welcome. Students are encouraged to participate in discussions actively.

Lecture No	415078				
Subject title	Lecture of Plastic and Reconstructive Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Plastic surgery library, laboratory, etc. (Check with the instructor before the lecture.)

Course Purpose and Outline

In the field of plastic and reconstructive surgery, the process leading to the selection of the surgical method is more important than the surgical treatment itself. In this lecture, we will discuss the preoperative treatment, the process leading to the selection of the surgical method, and the postoperative treatment.

Course Objective(s)

To be able to systematically understand and practice a series of stories about the necessity of preoperative therapy, the process leading to the selection of surgical treatment, and postoperative therapy.

Lecture Style

In small groups, problems, corresponding ideas, and solutions will be discussed in a discussion-based format. Some of the classes will be web-based synchronous classes using zoom, etc.

Course Outline

(Objectives)

To recognize the significance and social necessity of plastic surgery, and to understand the target diseases of plastic surgery and their treatment methods.

(Outline)

This course provides an overview of the four major target diseases of plastic surgery: 1) congenital anomalies of the outer surface, 2) post-traumatic deformities, 3) post-tumor deformities, and 4) aesthetics. The basic techniques of plastic surgery (suture, skin grafting, skin valve, and other tissue grafts) and applied techniques (microsurgery and craniofacial surgery) will also be explained as means of treatment for these diseases.

Available Programs

Lectures every Wednesday 8:00-9:30 a.m.

Research conference & Reading sessionTuesday 19:00 – 20:00

Prerequisite Reading

In addition to participation in lectures, exercises, and research practice and the content of the research, a comprehensive evaluation will be made based on the number of external presentations (conferences, papers) of the research content, using the following percentages as a guide.

In addition, the number of external presentations (conferences, papers) of the research content will be added.

In addition to the above, the status of external presentations (conferences, papers, etc.) of research content will be taken into account.

TextBook

Grabb and Smith's plastic surgery／Thorne, 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

Reference Materials

Plastic Surgery: 6-Volume Set, 4e／Peter C. Neligan：Elsevier, 2017

Relationship With Other Subjects

Plastic and Reconstructive Surgery is a team-based medicine with various surgical departments to reconstruct function as well as cosmetic appearance. We hope that students will learn to be aware of the relationship with other departments.

Important Course Requirements

Please keep in mind that lectures, exercises, and practical training can only be meaningful through self-study before and after. Do not take

pictures of the screen during the lecture. Lecture materials must not be made available to anyone other than registered students due to copyright issues.
Note(s) to Students In principle, no more than three people are allowed to attend the abstract reading and research presentation.
Reference URL http://www.tmd.ac.jp/med/plas/

Lecture No	415079				
Subject title	Practice of Plastic and Reconstructive Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd year	Units	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Plastic surgery library, laboratory, etc. (Check with the instructor before the lecture.)

Course Purpose and Outline

In the field of plastic and reconstructive surgery, the process leading to the selection of the surgical method is more important than the surgical treatment itself. In this lecture, we will discuss the preoperative treatment, the process leading to the selection of the surgical method, and the postoperative treatment.

Course Objective(s)

To be able to systematically understand and practice a series of stories about the necessity of preoperative therapy, the process leading to the selection of surgical treatment, and postoperative therapy.

Lecture Style

In small groups, problems, corresponding ideas, and solutions will be discussed in a discussion-based format. Some of the classes will be web-based synchronous classes using zoom, etc.

Course Outline

(Objectives)

To recognize the significance and social necessity of plastic surgery, and to understand the target diseases of plastic surgery and their treatment methods.

(Outline)

This course provides an overview of the four major target diseases of plastic surgery: 1) congenital anomalies of the outer surface, 2) post-traumatic deformities, 3) post-tumor deformities, and 4) aesthetics. The basic techniques of plastic surgery (suture, skin grafting, skin valve, and other tissue grafts) and applied techniques (microsurgery and craniofacial surgery) will also be explained as means of treatment for these diseases.

Available Programs

Lectures every Wednesday 8:00-9:30 a.m.

Research conference & Reading sessionTuesday 19:00 – 20:00

Grading System

In addition to participation in lectures, exercises, and research practice and the content of the research, a comprehensive evaluation will be made based on the number of external presentations (conferences, papers) of the research content, using the following percentages as a guide.

In addition, the number of external presentations (conferences, papers) of the research content will be added.

In addition to the above, the status of external presentations (conferences, papers, etc.) of research content will be taken into account.

Prerequisite Reading

In addition to participation in lectures, exercises, and research practice and the content of the research, a comprehensive evaluation will be made based on the number of external presentations (conferences, papers) of the research content, using the following percentages as a guide.

In addition, the number of external presentations (conferences, papers) of the research content will be added.

In addition to the above, the status of external presentations (conferences, papers, etc.) of research content will be taken into account.

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Grabb and Smith's plastic surgery／Thorne, 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

Reference Materials

Plastic Surgery: 6-Volume Set, 4e／Peter C. Neligan：Elsevier, 2017

Relationship With Other Subjects Plastic and Reconstructive Surgery is a team-based medicine with various surgical departments to reconstruct function as well as cosmetic appearance. We hope that students will learn to be aware of the relationship with other departments.
Important Course Requirements Please keep in mind that lectures, exercises, and practical training can only be meaningful through self-study before and after. Do not take pictures of the screen during the lecture. Lecture materials must not be made available to anyone other than registered students due to copyright issues.
Note(s) to Students In principle, no more than three people are allowed to attend the abstract reading and research presentation.
Reference URL http://www.tmd.ac.jp/med/plas/

Lecture No	415080				
Subject title	Laboratory practice of Plastic and Reconstructive Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Plastic surgery library, laboratory, etc. (Check with the instructor before the lecture.)

Course Purpose and Outline

In the field of plastic and reconstructive surgery, the process leading to the selection of the surgical method is more important than the surgical treatment itself. In this lecture, we will discuss the preoperative treatment, the process leading to the selection of the surgical method, and the postoperative treatment.

Course Objective(s)

To be able to systematically understand and practice a series of stories about the necessity of preoperative therapy, the process leading to the selection of surgical treatment, and postoperative therapy.

Lecture Style

In small groups, problems, corresponding ideas, and solutions will be discussed in a discussion-based format. Some of the classes will be web-based synchronous classes using zoom, etc.

Course Outline

(Objectives)

To recognize the significance and social necessity of plastic surgery, and to understand the target diseases of plastic surgery and their treatment methods.

(Outline)

This course provides an overview of the four major target diseases of plastic surgery: 1) congenital anomalies of the outer surface, 2) post-traumatic deformities, 3) post-tumor deformities, and 4) aesthetics. The basic techniques of plastic surgery (suture, skin grafting, skin valve, and other tissue grafts) and applied techniques (microsurgery and craniofacial surgery) will also be explained as means of treatment for these diseases.

Available Programs

Lectures every Wednesday 8:00-9:30 a.m.

Research conference Tuesday 20:00 – 20:30

Reading session Tuesday 20:30-21:00

Grading System

In addition to participation in lectures, exercises, and research practice and the content of the research, a comprehensive evaluation will be made based on the number of external presentations (conferences, papers) of the research content, using the following percentages as a guide.

In addition, the number of external presentations (conferences, papers) of the research content will be added.

In addition to the above, the status of external presentations (conferences, papers, etc.) of research content will be taken into account.

Prerequisite Reading

In addition to participation in lectures, exercises, and research practice and the content of the research, a comprehensive evaluation will be made based on the number of external presentations (conferences, papers) of the research content, using the following percentages as a guide.

In addition, the number of external presentations (conferences, papers) of the research content will be added.

In addition to the above, the status of external presentations (conferences, papers, etc.) of research content will be taken into account.

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Essentials of Plastic Surgery, Second Edition／Jeffrey E. Janis ed.：Thieme Medical Pub, 2014

Reference Materials

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Relationship With Other Subjects Plastic and Reconstructive Surgery is a team-based medicine with various surgical departments to reconstruct function as well as cosmetic appearance. We hope that students will learn to be aware of the relationship with other departments.
Important Course Requirements Please keep in mind that lectures, exercises, and practical training can only be meaningful through self-study before and after. Do not take pictures of the screen during the lecture. Lecture materials must not be made available to anyone other than registered students due to copyright issues.
Note(s) to Students In principle, no more than three people are allowed to attend the abstract reading and research presentation.
Reference URL http://www.tmd.ac.jp/med/plas/

Lecture No	041096				
Subject title	Lecture of Head and Neck Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Depend on the programme.

Course Purpose and Outline

Develop exellent 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, resarch about new clinical technique or clinical anatomy.

Course Objective(s)

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 Reserch and development for new knowledge about head and neck anatomy or treatment

Lecture Style

The format comprises a small number of students.

Course Outline

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 treatments strategies for these tumours are shown.

Grading System

The evaluation of results is based on contents of reports, presentations at conference and original articles.

Prerequisite Reading

The knowledge about general otorhinolaryngology and surgical oncology are required.

Reference Materials

not available.

Important Course Requirements

nothing in particular

Lecture No	041097				
Subject title	Practice of Head and Neck Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Depend on the programme.

Course Purpose and Outline

Develop exellent 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, resarch about new clinical technique or clinical anatomy.

Course Objective(s)

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 Reserch and development for new knowledge about head and neck anatomy or treatment

Lecture Style

The format comprises a small number of students.

Course Outline

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.

Grading System

The evaluation of results is based on contents of reports, presentations at conference and original articles.

Prerequisite Reading

The knowledge about general otorhinolaryngology and surgical oncology are required.

Reference Materials

not available.

Important Course Requirements

nothing in particular

Lecture No	041098				
Subject title	Laboratory practice of Head and Neck Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Depend on the programme.

Course Purpose and Outline

Develop exellent 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, resarch about new clinical technique or clinical anatomy.

Course Objective(s)

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 Reserch and development for new knowledge about head and neck anatomy or treatment

Lecture Style

The format comprises a small number of students.

Course Outline

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.

Grading System

The evaluation of results is based on contents of reports, presentations at conference and original articles.

Prerequisite Reading

The knowledge about general otorhinolaryngology and surgical oncology are required.

Reference Materials

not available.

Important Course Requirements

nothing in particular

Lecture No	041099				
Subject title	Lecture of Radiation Therapeutics and Oncology			**Subject ID**	
Instructors	吉村 亮一, 桑原 宏文[YOSHIMURA RYOICHI, KUWABARA Hirofumi]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Check for charge instructors beforehand, because it's different depending on programs.

Course Purpose and Outline

To understand the influence of radiation on the body or tumor and the optimal radiation therapy.

Course Objective(s)

Propose the optimal radiation therapy plan according to each malignant tumor.

Lecture Style

Small number system is employed.

A chance of discussion is held aggressively.

Course Outline

Students understand how to use the radiotherapy planning system and do plan.

Grading System

Estimated overall based on the participation situation to the lectures.

Grading Rule

Estimated overall based on the participation situation to the practices and the study contents.

Prerequisite Reading

Understand the base of radiation biology and physics.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Email

YOSHIMURA RYOICHI:ysmrmrad@tmd.ac.jp

Instructor's Contact Information

YOSHIMURA RYOICHI:No office hour.

Please contact by e-mail.

Lecture No	041100				
Subject title	Practice of Radiation Therapeutics and Oncology			**Subject ID**	
Instructors	吉村 亮一, 桑原 宏文[YOSHIMURA RYOICHI, KUWABARA Hirofumi]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Check for charge instructors beforehand, because it's different depending on programs.

Course Purpose and Outline

To understand the influence of radiation on the body or tumor and the optimal radiation therapy.

Course Objective(s)

Propose the optimal radiation therapy plan according to each malignant tumor.

Lecture Style

Small number system is employed.

A chance of discussion is held aggressively.

Course Outline

Students understand how to use the radiotherapy planning system and do plan.

Grading System

Estimated overall based on the participation situation to the lectures and the practices and the study contents.

Grading Rule

Estimated overall based on the participation situation to the practices and the study contents.

Prerequisite Reading

Understand the base of radiation biology and physics.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Email

YOSHIMURA RYOICHI:ysmrmrad@tmd.ac.jp

Instructor's Contact Information

YOSHIMURA RYOICHI:No office hour.

Please contact by e-mail.

Lecture No	041101				
Subject title	Laboratory practice of Radiation Therapeutics and Oncology			**Subject ID**	
Instructors	吉村 亮一, 桑原 宏文, 長野 拓也[YOSHIMURA RYOICHI, KUWABARA Hirofumi, NAGANO Takuya]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Check for charge instructors beforehand, because it's different depending on programs.

Course Purpose and Outline

To understand the influence of radiation on the body or tumor and the optimal radiation therapy.

Course Objective(s)

Propose the optimal radiation therapy plan according to each malignant tumor.

Lecture Style

Small number system is employed.

A chance of discussion is held aggressively.

Course Outline

Students understand how to use the radiotherapy planning system and do plan.

Grading System

Estimated overall based on the participation situation to the lectures and the practices and the study contents.

Grading Rule

Estimated overall based on the participation situation to the practices and the study contents.

Prerequisite Reading

Understand the base of radiation biology and physics.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Email

YOSHIMURA RYOICHI:ysmrmrad@tmd.ac.jp

Instructor's Contact Information

YOSHIMURA RYOICHI:No office hour.

Please contact by e-mail.

Lecture No	415066				
Subject title	Lecture of Oral and Maxillofacial Anatomy			Subject ID	
Instructors	岩永 譲, 北河 憲雄[IWANAGA JO, KITAGAWA NORIO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Maxillofacial Anatomy (6th floor, in MD tower)

Course Purpose and Outline

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 methodlogy of organ/tissue culture, light and electron microscopy, and molecular biology.

Course Objective(s)

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 strucrure and developmental process of temporomandibular joints including articular disc and condylar caertilage. 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 caretilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.

Lecture Style

Teachers present their own experimental data, and discuss topics presented.

Course Outline

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 May. 6– July. 8 Thursday 13:00–15:00

Seminar (1) Wednesday 9:30–11:00 or 10:30–12:00

Grading System

Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.

Prerequisite Reading

Confirm contents of schedule which is ditributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.

Reference Materials

1)Wakita M et al. ed "Oral Histology and Embryology"(ISHIYAKU PULISHERS, inc) 2)Wakita M et al. ed "Oral Anatomy"(ISHIYAKU PULISHERS, inc) 3)) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house – USA

Important Course Requirements

none

Note(s) to Students

Correspond to contact person before you take a course.

Lecture No	415067				
Subject title	Practice of Oral and Maxillofacial Anatomy			**Subject ID**	
Instructors	岩永 譲, 北河 憲雄[IWANAGA JO, KITAGAWA NORIO]				
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Maxillofacial Anatomy (6th floor, in MD tower)

Course Purpose and Outline

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 methodlogy of organ/tissue culture, light and electron microscopy, and molecular biology.

Course Objective(s)

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 strucrure and developmental process of temporomandibular joints including articular disc and condylar caertilage. 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 caretilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.

Lecture Style

Teachers present their own experimental data, and discuss topics presented.

Course Outline

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

Grading System

Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.

Prerequisite Reading

Confirm contents of schedule which is ditributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.

Reference Materials

1)Wakita M et al. ed "Oral Histology and Embryology"(ISHIYAKU PULISHERS, inc) 2)Wakita M et al. ed "Oral Anatomy"(ISHIYAKU PULISHERS, inc) 3)) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house - USA

Important Course Requirements

none

Note(s) to Students

Correspond to contact person before you take a course.

Lecture No	415068				
Subject title	Laboratory of Oral and Maxillofacial Anatomy			Subject ID	
Instructors	岩永 譲, 北河 憲雄[IWANAGA JO, KITAGAWA NORIO]				
Semester	YearLong 2023	Level	3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Maxillofacial Anatomy (6th floor, in MD tower)

Course Purpose and Outline

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 methodlogy of organ/tissue culture, light and electron microscopy, and molecular biology.

Course Objective(s)

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 strucrure and developmental process of temporomandibular joints including articular disc and condylar caertilage. 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 caretilage. 6) To explain the principles of immunohistochemistry and in situ hybridization.

Lecture Style

Teachers present their own experimental data, and discuss topics presented.

Course Outline

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

Grading System

Evaluate is based on attendance for lecture and practice, and contents of studies including discussion on topics presented.

Prerequisite Reading

Confirm contents of schedule which is ditributed before lectures and check structures features of corresponding organ/tissue by leaning textbooks/reference books.

Reference Materials

1)Wakita M et al. ed "Oral Histology and Embryology"(ISHIYAKU PULISHERS, inc) 2)Wakita M et al. ed "Oral Anatomy"(ISHIYAKU PULISHERS, inc) 3)) Sperber GH 著 Craniofacial Embryogenetics and Development 2nd ed. People's medical publishing house - USA

Important Course Requirements

none

Note(s) to Students

Correspond to contact person before you take a course.

Lecture No	041105				
Subject title	Lecture of Cognitive Neurobiology			**Subject ID**	
Instructors	上阪 直史, 田中 大介[UESAKA Naofumi, TANAKA DAISUKE]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
We can perform this course.					
Lecture place Cognitive Neurobiology lab					
Prerequisite Reading					

Lecture No	041106				
Subject title	Practice of Cognitive Neurobiology			**Subject ID**	
Instructors	上阪 直史, 田中 大介[UESAKA Naofumi, TANAKA DAISUKE]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
We can perform this course in English.					
Lecture place Cognitive Neurobiology lab					
Prerequisite Reading					

Lecture No	041107				
Subject title	Laboratory practice of Cognitive Neurobiology			**Subject ID**	
Instructors	上阪 直史, 田中 大介[UESAKA Naofumi, TANAKA DAISUKE]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
We can perform this course in English.					
Lecture place Cognitive Neurobiology lab					
Prerequisite Reading					

Lecture No	415063				
Subject title	Lecture of Molecular Craniofacial Embryology and Oral Histology			**Subject ID**	
Instructors	井関 祥子[ISEKI SACHIKO]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

留学生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.

Lecture place

The office of Molecular Craniofacial Embryology laboratory

Please contact the instructor

Course Purpose and Outline

Understanding of basic molecular mechnisms of craniofacial development and tissue regeneration

Course Objective(s)

Achievement of understanding in methods and strategy to study molecular craniofacial embryoology and tissue regeneration

Lecture Style

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.

Course Outline

Check with the teacher in charge for the program which is not specifically scheduled.

Grading System

Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course.

Prerequisite Reading

Lecture No	415064				
Subject title	Practice of Molecular Craniofacial Embryology and Oral Histology			**Subject ID**	
Instructors	井関 祥子[ISEKI SACHIKO]				
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					

Lecture place

The office of Molecular Craniofacial Embryology

Contact the course organizer

Course Purpose and Outline

nderstanding of basic molecular mechnisms of craniofacial development and tissue regeneration

Course Objective(s)

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.

Lecture Style

Lectures and practices are held to a group of small number of students.

Course Outline

Please contact the instructor

Grading System

Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course.

Prerequisite Reading

TextBook

1. Cranofacial Embryogenetics and Development by Geoffrey H. Sperber People's Medical Publishing House USA, Ltd.

2. Developmental Biology Scott F. Gilbert Sinauer

Lecture No	415065				
Subject title	Laboratory of Molecular Craniofacial Embryology and Oral Histology			**Subject ID**	
Instructors	井関 祥子[ISEKI SACHIKO]				
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					

Lecture place

The office of Molecular Craniofacial Embryology

Contact the course organizer

Course Purpose and Outline

nderstanding of basic molecular mechnisms of craniofacial development and tissue regeneration

Course Objective(s)

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.

Lecture Style

Lectures and practices are held to a group of small number of students.

Course Outline

Please contact the instructor

Grading System

Evaluation is made based on the attendance to the lectures and on the research reports and/or presentation during the course.

Prerequisite Reading

TextBook

1. Cranofacial Embryogenetics and Development by Geoffrey H. Sperber People's Medical Publishing House USA, Ltd.

2. Developmental Biology Scott F. Gilbert Sinauer

Lecture No	041111				
Subject title	Lecture of Cellular Physiological Chemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Venue depends on each program, students are requested to contact the instructors for each program.

Course Purpose and Outline

Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.

Course Objective(s)

Understanding of pathological and physiological conditions by cellular and molecular methods.

Lecture Style

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.

Grading System

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

Prerequisite Reading

Students should understand their own research.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041112				
Subject title	Practice of Cellular Physiological Chemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Venue depends on each program, students are requested to contact the instructors for each program.

Course Purpose and Outline

Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.

Course Objective(s)

Understanding of pathological and physiological conditions by cellular and molecular methods.

Lecture Style

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.

Course Outline

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.

Grading System

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

Prerequisite Reading

None

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041113				
Subject title	Laboratory practice of Cellular Physiological Chemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Venue depends on each program, students are requested to contact the instructors for each program.

Course Purpose and Outline

Lecture for the understanding of pathological and physiological conditions by cellular and molecular methods.

Course Objective(s)

Understanding of pathological and physiological conditions by cellular and molecular methods.

Lecture Style

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.

Course Outline

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.

Grading System

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

Prerequisite Reading

Students should understand their own research.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041114				
Subject title	Lecture of Maxillofacial Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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.

Course Purpose and Outline

- To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.
- To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.
- To train self-problem solving skills.

Course Objective(s)

- To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions
- To explain the diagnosis, treatment, and prevention for these diseases
- To select the most suitable treatment strategies for each cases
- To establish the study plan and interpret the data appropriately.
- To explain the preparation and technique of the presentation and article writing.

Lecture Style

In principle, small group system is applied. And independency of the participants is respected.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.

Reference Materials

Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041115				
Subject title	Practice of Maxillofacial Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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.

Course Purpose and Outline

- To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.
- To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.
- To train self-problem solving skills.

Course Objective(s)

- To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions
- To explain the diagnosis, treatment, and prevention for these diseases
- To select the most suitable treatment strategies for each cases
- To establish the study plan and interpret the data appropriately.
- To explain the preparation and technique of the presentation and article writing.

Lecture Style

In principle, small group system is applied. And independency of the participants is respected.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.

Reference Materials

Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041116				
Subject title	Laboratory practice of Maxillofacial Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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.

Course Purpose and Outline

- To understand the pathological condition and etiology of the disease occurred in the oral and maxillofacial regions.
- To experience the basic skills and knowledges about prevention, diagnosis, and treatment for these diseases.
- To train self-problem solving skills.

Course Objective(s)

- To explain the etiology and condition about diseases occurred in the oral and maxillofacial regions
- To explain the diagnosis, treatment, and prevention for these diseases
- To select the most suitable treatment strategies for each cases
- To establish the study plan and interpret the data appropriately.
- To explain the preparation and technique of the presentation and article writing.

Lecture Style

In principle, small group system is applied. And independency of the participants is respected.

Course Outline

Goals/Outline:

Goals of these Labs are to learn the methods for study planning, study performing, evaluation methods, conference presentation and thesis writing.

Grading System

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.

Prerequisite Reading

Please confirm the date, time, the place and the contents of each lecture and practice beforehand. Please participate in discussion actively.

Reference Materials

Operative Oral and Maxillofacial Surgery/ John D. Langdon, Peter A. Brennan: Hodder Education, 2011

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041117				
Subject title	Lecture of Maxillofacial Orthognathics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Information will be provided from the instructor beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

a small group

Course Outline

This couese 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, 2023 – Mar, 2024 – Fridays 8:00～9:00

Seminar, Apr, 2023 – Mar, 2024 – Fridays 17:00～19:00

Grading System

Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.

Prerequisite Reading

Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.

Reference Materials

Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY ・Orhodontics Current Principles & Techniques 6th Ed., T.M.Graber, ELSEVER/MOSBY ・Contemporary Treatmnet 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

Important Course Requirements

nothing in particular

Note(s) to Students

None

Lecture No	041118				
Subject title	Practice of Maxillofacial Orthognathics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

Information will be provided from the instructor beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

a small group

Course Outline

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

Grading System

Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.

Prerequisite Reading

Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.

Reference Materials

Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY ・Orhodontics Current Principles & Techniques 6th Ed., T.M.Graber, ELSEVER/MOSBY ・Contemporary Treatmnet 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

Important Course Requirements

nothing in particular

Note(s) to Students

None

Lecture No	041119				
Subject title	Laboratory practice of Maxillofacial Orthognathics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Information will be provided from the instructor beforehand.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

a small group

Course Outline

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

Grading System

Grading will be performed based on achievement of the study, as well as a record of attendance to lectures, clinical practice and laboratory research.

Prerequisite Reading

Prior to a lecture, practice and lab, confirm lecture contents and learn necessary knowledge by reference books beforehand.

Reference Materials

Contemporary Orthodontics 6th Ed., W.R.Proffit, MOSBY ・Orhodontics Current Principles & Techniques 6th Ed., T.M.Graber, ELSEVER/MOSBY ・Contemporary Treatmnet 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

Important Course Requirements

nothing in particular

Note(s) to Students

None

Lecture No	415041				
Subject title	Lecture of			Subject ID	
Instructors	田中 顕太郎[TANAKA KENTARO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Confirm to the instructor in charge before lecture.

Course Purpose and Outline

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.

Course Objective(s)

Understanding process to choose surgical procedures and practicing them

Lecture Style

Small-group session is adopted in order for intense discussion.

Course Outline

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.

Grading System

Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.

Prerequisite Reading

Lecture : Participating after reading relevant part of the reference books.

Practice: Before practice, think about optimal operative procedures by yourself.

Reference Materials

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.

Important Course Requirements

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.

Note(s) to Students

It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.

Email

Kentaro Tanaka, Professor, Department of Reconstructive Plastic Surgery E-mail kenta.plas@tmd.ac.jp

Instructor's Contact Information

Monday to Friday 9:00-17:00

M&Dtower 9F plastic and reconstructive surgery

Lecture No	415042				
Subject title	Practice of			Subject ID	
Instructors	田中 顕太郎[TANAKA KENTARO]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Confirm to the instructor in charge before lecture.

Course Purpose and Outline

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.

Course Objective(s)

Understanding process to choose surgical procedures and practicing them

Lecture Style

Small-group session is adopted in order for intense discussion.

Course Outline

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:

Diciding a therapeutic strategy for each case in preoperative conference, and participating in operations.

Grading System

Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.

Prerequisite Reading

Lecture：Participating after reading relevant part of the reference books.

Practice: Before practice, think about optimal operative procedures by yourself.

Reference Materials

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.

Important Course Requirements

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.

Note(s) to Students

It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.

Email

Kentaro Tanaka, Professor, Department of Reconstructive Plastic Surgery E-mail kenta.plas@tmd.ac.jp

Instructor's Contact Information

Monday to Friday 9:00-17:00

M&Dtower 9F plastic and reconstructive surgery

Lecture No	415043				
Subject title	Laboratory practice of			Subject ID	
Instructors	田中 顕太郎[TANAKA KENTARO]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Confirm to the instructor in charge before lecture.

Course Purpose and Outline

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.

Course Objective(s)

Understanding process to choose surgical procedures and practicing them

Lecture Style

Small-group session is adopted in order for intense discussion.

Course Outline

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, neurorrhaphy

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 tisssue 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

Grading System

Grade is given mainly based on the presentation of progress status and attitude to lectures. The publications of research outcome are also evaluated.

Prerequisite Reading

Lecture : Participating after reading relevant part of the reference books.

Practice: Before practice, think about optimal operative procedures by yourself.

Reference Materials

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.

Important Course Requirements

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.

Note(s) to Students

It is advisable that journal club and research conference are held within 5 persons, although the number is not strictly limited.
Email Kentaro Tanaka, Professor, Department of Reconstructive Plastic Surgery E-mail kenta.plas@tmd.ac.jp
Instructor's Contact Information Monday to Friday 9:00-17:00 M&Dtower 9F plastic and reconstructive surgery

Lecture No	041123				
Subject title	Lecture of Cell Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Cell biology laboratory (18F M&D tower)

Course Purpose and Outline

the course covers introduction to modern cell biology.

Course Objective(s)

Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.

Lecture Style

Small group (less than 5 participants)

Course Outline

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.

Grading System

Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).

Prerequisite Reading

nothing special

Reference Materials

molecular biology of the cell.

Important Course Requirements

nothing special

Note(s) to Students

nothing special

Lecture No	041124				
Subject title	Practice of Cell Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Cell biology laboratory (18F M&D tower)

Course Purpose and Outline

the course covers introduction to modern cell biology.

Course Objective(s)

Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.

Lecture Style

Small group (less than 5 participants)

Course Outline

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.

Grading System

Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).

Prerequisite Reading

nothing special

Reference Materials

molecular biology of the cell.

Important Course Requirements

nothing special

Note(s) to Students

nothing special

Lecture No	041125				
Subject title	Laboratory practice of Cell Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Cell biology laboratory (18F M&D tower)

Course Purpose and Outline

the course covers introduction to modern cell biology.

Course Objective(s)

Major discovery of cell biology will be presented and why the discovery was achieved will be discussed.

Lecture Style

Small group (less than 5 participants)

Course Outline

Goals/Outline:

Basic cell biology techniques will be presented including cell culture, transfection, and light-microscopy

Grading System

Students will be graded by their participation (70%) and presentation at the scientific meeting outside the university (30%).

Prerequisite Reading

nothing special

Reference Materials

molecular biology of the cell.

Important Course Requirements

nothing special

Note(s) to Students

nothing special

Lecture No	041126				
Subject title	Lecture of Medical Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be conducted in English when necessary.					

Lecture place

To be announced when scheduled.

Course Purpose and Outline

The keywords of our current studies are as follows: ageing, stress granules, and sarcopenia. We give lectures about our current studies to graduate students and others, and provide graduate students with the opportunity to participate in them.

Course Objective(s)

The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important isseus of life science in the next decades.

Lecture Style

Please consult the contact person.

Course Outline

Goals/outline:

Skeletal muscle atrophy with ageing (sarcopenia) is one of the critical issues in the ageing society. To prevent sarcopenia and to develop therapies against sarcopenia, the understanding of the molecular alterations in the aged skeletal muscle stem cells (satellite cells) is essential. We are trying to dissect whether and how gene expression and protein translation are changed in aged satellite cells.

Grading System

The grading is based on the commitment to the research and the seminars.

Prerequisite Reading

Please read the standard textbooks, such as "Molecular Biology of the Cell".

TextBook

Molecular Biology of the Cell 7th edition／Alberts et al.：W W Norton & Co Inc, 2022

Moleclular Cell Biology 9th edition／Lodish et al：W H Freeman & Co, 2021

Important Course Requirements

All participants are requested to be punctual and actively participate in discussion.

Note(s) to Students

Please do not hesitate to get more detailed information directly from Dr. Matsuzaki if you are interested in this course.

Lecture No	041127				
Subject title	Practice of Medical Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English when necessary.					

Lecture place

To be announced when scheduled.

Course Purpose and Outline

The keywords of our current studies are as follows: ageing, stress granules, and sarcopenia. We give lectures about our current studies to graduate students and others and provide graduate students with the opportunity to participate in them.

Course Objective(s)

The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important isseus of life science in the next decades.

Lecture Style

Please consult the contact person.

Course Outline

Goals/Outline:

To perform biochemical, molecular biological, and cell biological experiments.

Grading System

The grading is based on the commitment to the research and the seminars.

Prerequisite Reading

Please read the standard textbooks, such as "Molecular Biology of the Cell".

Important Course Requirements

All participants are requested to be punctual and actively participate in discussion.

Note(s) to Students

Please do not hesitate to get more detailed information directly from Dr. Matsuzaki if you are interested in this course.

Lecture No	041128				
Subject title	Laboratory practice of Medical Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English when necessary.

Lecture place

To be announced when scheduled.

Course Purpose and Outline

The keywords of our current studies are as follows: ageing, stress granules, and sarcopenia. We give lectures about our current studies to graduate students and others and provide graduate students with the opportunity to participate in them.

Course Objective(s)

The students are requested through these courses to obtain a comprehensive integrated knowledge of a wide variety of topics, which will be important isseus of life science in the next decades.

Lecture Style

Please consult the contact person.

Course Outline

Goals/Outline:

To perform biochemical, molecular biological, and cell biological experiments.

Grading System

The grading is based on the commitment to the research and the seminars.

Prerequisite Reading

Please read the standard textbooks, such as "Molecular Biology of the Cell".

Important Course Requirements

All participants are requested to be punctual and actively participate in discussion.

Note(s) to Students

Please do not hesitate to get more detailed information directly from Dr. Matsuzaki if you are interested in this course.

Lecture No	041129				
Subject title	Lecture of Joint Surgery and Sports Medicine			Subject ID	
Instructors	古賀 英之, 宮武 和正[KOGA HIDEYUKI, MIYATAKE Kazumasa]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Clinicals: The goal of this course is to train graduate students in the majority to begcome 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 mentenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).

Lecture Style

Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.

Course Outline

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.

Grading System

Gradings are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

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).

Reference Materials

For scientific topics, please refere "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.

Important Course Requirements

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 reserch progresses at least once a month.

Email

MIYATAKE Kazumasa:miyatake.orj@tmd.ac.jp

Instructor's Contact Information

MIYATAKE Kazumasa:Kazumasa Miyatake 9:00-17:00

Lecture No	041130				
Subject title	Practice of Joint Surgery and Sports Medicine			Subject ID	
Instructors	古賀 英之, 宮武 和正[KOGA HIDEYUKI, MIYATAKE Kazumasa]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Clinicals: The goal of this course is to train graduate students in the majority to begcome 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 mentenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).

Lecture Style

Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.

Course Outline

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.

Grading System

Gradings are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

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).

Reference Materials

For scientific topics, please refere "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.

Important Course Requirements

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 reserch progresses at least once a month.

Email

MIYATAKE Kazumasa:miyatake.orj@tmd.ac.jp

Instructor's Contact Information

MIYATAKE Kazumasa:Kazumasa Miyatake 9:00-17:00

Lecture No	041131				
Subject title	Laboratory practice of Joint Surgery and Sports Medicine			Subject ID	
Instructors	古賀 英之, 宮武 和正[KOGA HIDEYUKI, MIYATAKE Kazumasa]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Clinicals: The goal of this course is to train graduate students in the majority to begcome 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 mentenance of tissue derived mesenchymal stem cells, basic molecular biological techniques (Q-PCR, Microarray, etc.), histology, and basic cellular biological techniques (Flowcytometry etc.).

Lecture Style

Small group lectures are performed. Round of talks for reports and discussions on research are held as many as possible.

Course Outline

Goals/Outline:

Following studies have been extensively carried out in out laboratory with various biological and molecular biological techniques:

- Establishment of separation and proliferation of mesenchymal stem cells
- Elucidation of biological properties of mesenchymal stem cells
- Development of treatment of joint cartilage injury using mesenchymal stem cells
- Mechanism and treatment of joint pain
- Development of knee and hip arthroplasty which accommodates Japanese
- Promotion of anatomical knee anterior cruciate ligament reconstruction

Grading System

Gradings are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

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).

Reference Materials

For scientific topics, please refere "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.

Important Course Requirements

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 reserch progresses at least once a month.

Email

MIYATAKE Kazumasa:miyatake.orj@tmd.ac.jp

Instructor's Contact Information

MIYATAKE Kazumasa:Kazumasa Miyatake 9:00-17:00

Lecture No	415020				
Subject title	Lecture of Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Since a venue depends on the program, please ask a contact person before taking part in the course.

Course Purpose and Outline

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 adn progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.

Course Objective(s)

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.

Lecture Style

Small group seminars

Course Outline

Background, recent progress, physiological importance, experimental approaches and unresolved problems of cancer, vascular formation, membrane structures and protepglycans in ECM are explained.

Grading System

Attendance to lectures, seminars, laboratory practices is evaluated. In addtion, research progress or presentation at the meeting is also evaluated totally.

Prerequisite Reading

Please attend a class with some information of your research materials.

Reference Materials

Check with the teacher in charge for the program.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415021				
Subject title	Practice of Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Since a venue depends on the program, please ask a contact person before taking part in the course.

Course Purpose and Outline

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 adn progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.

Course Objective(s)

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.

Lecture Style

Small group seminars

Course Outline

Based on the recent progresses on the biomolecules, specific and general discussions will be held to invent and to stimulate new research.

Grading System

Attendance to lectures, seminars, laboratory practices is evaluated. In addtion, research progress or presentation at the meeting is also evaluated totally.

Prerequisite Reading

Please attend a class with some information of your research materials.

Reference Materials

Check with the teacher in charge for the program.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415022				
Subject title	Laboratory practice of Biochemistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Since a venue depends on the program, please ask a contact person before taking part in the course.

Course Purpose and Outline

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 adn progression of cancer, we aim to understand the physiological and pathological roles of various biomolecules at molecular, biochemical, cellular levels in this class.

Course Objective(s)

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.

Lecture Style

Small group seminars

Course Outline

Students are required to present experimental data for discussion, which will be a crucial step to evaluate and improve the research progress.

Grading System

Attendance to lectures, seminars, laboratory practices is evaluated. In addtion, research progress or presentation at the meeting is also evaluated totally.

Prerequisite Reading

Please attend a class with some information of your research materials.

Reference Materials

Check with the teacher in charge for the program.

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041144				
Subject title	Lecture of Cell Signaling			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Please contact the instructor in charge before the course.

Course Purpose and 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.

Course Objective(s)

Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.

Lecture Style

Participatory class by a small group.

Course Outline

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.

Grading System

Based on the attendance rate and presentation in recture and scientific meeting,　we perform a general evaluation.

Prerequisite Reading

Under the supervision of staffs, students will prepare review presentation of scientific journal.

Reference Materials

Dynamics of Bone and Cartilage Metabolism (Academic Press)

Important Course Requirements

None

Note(s) to Students

Limited number: none

Please contact the instructor in charge before the course.

Lecture No	041145				
Subject title	Practice of Cell Signaling			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Please contact the instructor in charge before the course.

Course Purpose and 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.

Course Objective(s)

Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.

Lecture Style

Participatory class by a small group.

Course Outline

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 osteocyts 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.

Grading System

Based on the attendance rate and presentation in recture and scientific meeting, we perform a general evaluation.

Prerequisite Reading

Under the supervision of staffs, students will prepare review presentation of scientific journal.

Reference Materials

Dynamics of Bone and Cartilage Metabolism (Academic Press)

Important Course Requirements

None

Note(s) to Students

Limited number: none

Please contact the instructor in charge before the course.

Lecture No	041146				
Subject title	Laboratory practice of Cell Signaling			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Please contact the instructor in charge before the course.

Course Purpose and 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.

Course Objective(s)

Students will learn basic molecular biology and genetic engineering techniques by observing and/or performing biochemical experiments using cultured cells and knockout mice.

Lecture Style

Participatory class by a small group.

Course Outline

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.

Grading System

Based on the attendance rate and presentation in recture and scientific meeting, we perform a general evaluation.

Prerequisite Reading

Under the supervision of staffs, students will prepare review presentation of scientific journal.

Reference Materials

Dynamics of Bone and Cartilage Metabolism (Academic Press)

Important Course Requirements

None

Note(s) to Students

Limited number: none

Please contact the instructor in charge before the course.

Lecture No	041147				
Subject title	Lecture of Periodontology Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Online class: Zoom

In-person class: Neustadt Japan Room at 5th floor of Building No.7

* At the moment, all lectures will be given online.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

As much as possible, employ small class size, and scheduled discussion time, in order to promote mutual understanding.

Course Outline

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 15th- July 15th Every Friday 9:30-12:00

Special Lecture As needed (Details will be announced)

Grading System

Grading will be performed by analytic evaluation of attendance, comment, and performance in lecture.

Participation (70%) and discussion and attitude (30%).

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.

Reference Materials

Clinical Periodontology and Implant Dentistry, 2 Volume Set, 6th Edition／Niklaus P. Lang, Jan Lindhe：Wiley-Blackwell, 2015

Newman and Carranza's clinical periodontology／Michael G. Newman, Henry H. Takei, Perry R. Klokkevold ; Fermin A. Carranza, editor emeritus,Carranza, Fermin A.,Newman, Michael G.,Takei, Henry H.,Klokkevold, Perry R,：Elsevier, 2019

Peri-implantitis／Stefan Renvert, Jean-Louis Giovannoli,Renvert, Stefan,Giovannoli, Jean-Louis,：Quintessence International, 2012

歯周病およびインプラント周囲組織の疾患と状態に関する新分類 : アメリカ歯周病学会〈AAP〉/ヨーロッパ歯周病連盟〈EFP〉共催 2017 ワールドワークショップ会議録／Kenneth S.Komman, Maurizio S.Tonetti 共編,村上伸也 監訳,日本歯周病学会, 日本臨床歯周病学会 共訳,Komman, Kenneth S,Tonetti, Maurizio S,村上, 伸也, 1959-,日本歯周病学会,日本臨床歯周病学会,：クインテッセンス出版, 2020

歯周治療の指針 = JSP Clinical Practice Guideline for the Periodontal Treatment／日本歯周病学会：医歯薬出版, 2016

歯周病と全身の健康／日本歯周病学会：医歯薬出版, 2016

歯周病患者における口腔インプラント治療指針およびエビデンス 2018／日本歯周病学会編：医歯薬出版, 2018

歯周病患者における抗菌薬適正使用のガイドライン = JSP Guidelines for the Use of Antimicrobial Agents in Patients with Periodontal Disease／日本歯周病学会：医歯薬出版, 2020

Journal of Periodontology

Journal of Clinical Periodontology

Journal of Periodontal Research

Journal of Dental Research

Periodontology 2000

Nature

Nature Medicine

Science

Important Course Requirements

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.

Note(s) to Students

Check with the teacher in charge of the details of the course schedule and lecture hall.

Lecture No	041148				
Subject title	Practice of Periodontology Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online class: Zoom

In-person class: Neustadt Japan Room at 5th floor of Building No.7

* At the moment, all lectures will be given online.

Course Purpose and Outline

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.

Course Objective(s)

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.
4. To be able to make a comprehensive treatment and prevention plans for periodontal disease, and practicing the treatment.

Lecture Style

Seminar style. We will set a forum for discussion to promote a full understanding of the contents.

Course Outline

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

Grading System

Grading will be performed by the analytic evaluation of attendance/performance in practice.

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline, and the Internet.

Reference Materials

Clinical Periodontology and Implant Dentistry, 2 Volume Set, 6th Edition／Niklaus P. Lang, Jan Lindhe：Wiley-Blackwell, 2015

Newman and Carranza's clinical periodontology／[edited by] Michael G. Newman, Henry H. Takei, Perry R. Klokkevold ; Fermin A. Carranza, editor emeritus,Carranza, Fermin A.,Newman, Michael G.,Takei, Henry H.,Klokkevold, Perry R,：Elsevier, 2019

Peri-implantitis／Stefan Renvert, Jean-Louis Giovannoli,Renvert, Stefan,Giovannoli, Jean-Louis,：Quintessence International, 2012

歯周病およびインプラント周囲組織の疾患と状態に関する新分類 : アメリカ歯周病学会〈AAP〉/ヨーロッパ歯周病連盟〈EFP〉共催 2017 ワールドワークショップ会議録／Kenneth S.Komman, Maurizio S.Tonetti 共編,村上伸也 監訳,日本歯周病学会, 日本臨床歯周病学会 共訳,Komman, Kenneth S,Tonetti, Maurizio S,村上, 伸也, 1959-,日本歯周病学会,日本臨床歯周病学会,：クインテッセンス出版, 2020

歯周治療の指針 = JSP Clinical Practice Guideline for the Periodontal Treatment／日本歯周病学会：医歯薬出版, 2016

歯周病と全身の健康／日本歯周病学会：医歯薬出版, 2016

歯周病患者における口腔インプラント治療指針およびエビデンス 2018／日本歯周病学会：医歯薬出版, 2018

歯周病患者における抗菌薬適正使用のガイドライン = JSP Guidelines for the Use of Antimicrobial Agents in Patients with Periodontal Disease／日本歯周病学会：医歯薬出版, 2020

Journal of Periodontology

Journal of Clinical Periodontology

Journal of Periodontal Research

Journal of Dental Research

Periodontology 2000

Nature

Nature Medicine

Science

Important Course Requirements

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.

Note(s) to Students

To take Lecture is required for participation in Practice and Lab.

Check with the teacher in charge of the details of the course schedule and lecture hall.

Lecture No	041149				
Subject title	Laboratory practice of Periodontology Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Please ask the contact person.

Course Purpose and Outline

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.

Course Objective(s)

To be able to explain and perform the research for periodontal diseases and related fields.

Lecture Style

The lab is organized by some groups to do one-on-one instruction.

Course Outline

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

Grading System

Grading will be performed by analytic evaluation of attendance/performance in lab, as well as analytic evaluation of individual research results.

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline, and the Internet.

Reference Materials

Clinical Periodontology and Implant Dentistry, 6th Edition／Niklaus P. Lang, Jan Lindhe：Wiley-Blackwell, 2015

Newman and Carranza's clinical periodontology／[edited by] Michael G. Newman, Henry H. Takei, Perry R. Klokkevold ; Fermin A. Carranza, editor emeritus,Carranza, Fermin A.,Newman, Michael G.,Takei, Henry H.,Klokkevold, Perry R,：Elsevier, 2019

Peri-implantitis／Stefan Renvert, Jean-Louis Giovannoli,Renvert, Stefan,Giovannoli, Jean-Louis,：Quintessence International, 2012

歯周病およびインプラント周囲組織の疾患と状態に関する新分類 : アメリカ歯周病学会〈AAP〉/ヨーロッパ歯周病連盟〈EFP〉共催 2017 ワールドワークショップ会議録／Kenneth S.Korman, Maurizio S.Tonetti 共編,村上伸也 監訳,日本歯周病学会, 日本臨床歯周病学会 共訳,Korman, Kenneth S,Tonetti, Maurizio S,村上, 伸也, 1959-,日本歯周病学会,日本臨床歯周病学会,：クインテッセンス出版, 2020

Journal of Periodontology

Journal of Clinical Periodontology

Journal of Periodontal Research

Journal of Dental Research

Periodontology 2000

Nature

Nature Medicine

Science

Important Course Requirements

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.

Note(s) to Students

To take Lecture is required for participation in Practice and Lab.

Lecture No	041150				
Subject title	Lecture of Periodontology Ⅱ			Subject ID	
Instructors	青木 章, 竹内 康雄, 水谷 幸嗣, 片桐 さやか, 永井 茂之, 三上 理沙子, 谷口 陽一, 坪川 正樹, 髙木 徹, 川村 利恵, 大杉 勇人, 北中 祐太郎, 横瀬 敏志, 平塚 浩一, 秋本 健, 新見 ひろみ[AOKI AKIRA, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, NAGAI SHIGEYUKI, MIKAMI Risako, TANIGUCHI YOICHI, TSUBOKAWA MASAKI , TAKAGI TOHRU, KAWAMURA RIE, Yujin Ohsugi, KITANAKA Yutaro, YOKOSE Satoshi, HIRATSUKA Koichi, Ken Akimoto, NIIMI Hiromi]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

On-line (Zoom)

Course Purpose and Outline

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 peridontal 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.

Course Objective(s)

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).

Lecture Style

As much as possible, employ small class size, and schedule discussion time, in order to promote mutual understanding.

Course Outline

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～Dec, Friday (From Sep 9th, not every week): 10:00～12:00am or 17:00～19:00 pm

Seminar: Every Friday 16:30～18:30 pm

Grading System

Grading will be performed by analytic evaluation of attendance in lecture.

Participation (70%) and discussion and attitude (30%).

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.

Reference Materials

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, 粟津 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:デンタルダイアモンド社, 2015

Oral laser application／A. Moritz:Quintessence, 2006

Atlas of laser applications in dentistry／Donald Coluzzi, Robert A. Convissar:Quintessence, 2007

Ten lecutures 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, Photodiagnosis and

Photodynamic Therapy, Journal of Periodontology, Journal of Clinical Periodontology, Journal of Periodontal Research, Nature, Nature Medicine, Science
Important Course Requirements 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.
Note(s) to Students None
Email AOKI AKIRA:aoperi@tmd.ac.jp
Instructor's Contact Information AOKI AKIRA:From Monday to Thursday, 17:00–18:00 pm, 7th floor, 10th building, Photoperiodontics Professor's room

Lecture No	041151				
Subject title	Practice of Periodontology Ⅱ			Subject ID	
Instructors	青木 章, 竹内 康雄, 水谷 幸嗣, 片桐 さやか, 三上 理沙子, 大杉 勇人, 新見 ひろみ[AOKI AKIRA, TAKEUCHI YASUO, MIZUTANI KOJI, KATAGIRI SAYAKA, MIKAMI Risako, Yujin Ohsugi, NIIMI Hiromi]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Hozon-Kyosei Demonstration Room on 5th floor of Building No.7

Meeting room of Department of Periodontology on 3rd floor of Building No.10

On-line (Zoom)

Course Purpose and Outline

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 peridontal 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.

Course Objective(s)

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).

Lecture Style

As much as possible, employ small class size, and schedule discussion time, in order to promote mutual understanding.

Course Outline

To collect information, from the literature and Internet, as to current trends in photoperiodontics research. We will also discuss and investigate novel research approaches.

Grading System

Grading will be performed by analytic evaluation of attendance/performance in practice.

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.

Reference Materials

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

Important Course Requirements

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.

Note(s) to Students

None

Email

AOKI AKIRA:aoperi@tmd.ac.jp

Instructor's Contact Information

AOKI AKIRA:From Monday to Thursday, 17:00-18:00 pm, 7th floor, 10th building, Photoperiodontics Professor's room

Lecture No	041152				
Subject title	Laboratory practice of Periodontology Ⅱ			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Teaching will be conducted in English when foreign students registered.					

Lecture place

Please ask contact persons.

Laboratory at Department of Periodontology on 7th floor of Building No.10

Meeting room at Department of Periodontology on 3rd floor of Building No.10

Course Purpose and Outline

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.

Course Objective(s)

To be able to explain and perform the research for photoperiodontics.

Lecture Style

Lab is organized in small group to do one-on-one instruction.

Course Outline

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.

Grading System

Grading will be performed by analytic evaluation of attendance/performance in lab as well as analytic evaluation of individual research results.

Prerequisite Reading

Students will need to collect novel information from the current periodontal research using Pub Med, Medline and the Internet.

Reference Materials

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

Important Course Requirements

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.

Note(s) to Students

None

Lecture No	415057				
Subject title	Lecture of Biosignals and Inheritance			**Subject ID**	
Instructors	楠山 譲二[KUSUYAMA JOJI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Office (Department of Biosignals and Inheritance), 9th floor, Building 3

Course Purpose and Outline

This lecture aims to understand the basic molecular mechanisms for analyzing the process by which physiological and pathological information of the current generation is expressed as phenotypes in the next generation (inheritance of biological information). We welcome graduate students majoring in basic biology and medical engineering, as well as clinicians engaged in medical and dental practice and those interested in social medicine.

Course Objective(s)

The study goal is;

1. To understand and explain methodologies for the inheritance of biological information.

2. To read and evaluate research papers about molecular biology.

Lecture Style

Slide presentation, supporting documents, and discussion

Course Outline

Lectures about the basics and latest findings on the inheritance of biological information.

Grading System

Lecture participation (50%), discussions (50%)

Prerequisite Reading

Guidance will be given at the first lecture and in each class as necessary.

Email

joji.kusuyama.bsin@tmd.ac.jp

Instructor's Contact Information

Please send an email (joji.kusuyama.bsin@tmd.ac.jp) to make an appointment.

Lecture No	415058				
Subject title	Practice of Biosignals and Inheritance			**Subject ID**	
Instructors	楠山 譲二[KUSUYAMA JOJI]				
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Office (Department of Biosignals and Inheritance), 9th floor, Building 3

Course Purpose and Outline

This lecture aims to understand the basic molecular mechanisms for analyzing the process by which physiological and pathological information of the current generation is expressed as phenotypes in the next generation (inheritance of biological information). We welcome graduate students majoring in basic biology and medical engineering, as well as clinicians engaged in medical and dental practice and those interested in social medicine.

Course Objective(s)

The study goal is;

1. To perform experiments for the inheritance of biological information.

2. To evaluate the experimental results of molecular biology.

Lecture Style

Participate in research activities and discussions of our lab.

Course Outline

Experiments about the inheritance of biological information.

Grading System

Seminar participation (50%), discussions (50%)

Prerequisite Reading

Guidance will be given at the first lecture and in each class as necessary.

Email

joji.kusuyama.bsin@tmd.ac.jp

Instructor's Contact Information

Please send an email (joji.kusuyama.bsin@tmd.ac.jp) to make an appointment.

Lecture No	415059				
Subject title	Laboratory of Biosignals and Inheritance			**Subject ID**	
Instructors	楠山 譲二[KUSUYAMA JOJI]				
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Office (Department of Biosignals and Inheritance), 9th floor, Building 3

Course Purpose and Outline

This course aims to provide students with basic knowledge including research ethics, planning a research plan, conducting research, presenting at academic conferences, and writing papers in English for conducting research on the inheritance of biological information. An individualized instruction program will be developed for each student, and careful guidance will be provided to students for step-up progress.

Course Objective(s)

The study goal is;

1. To plan the projects for studying the inheritance of biological information.
2. To perform the experiments and presentation of the original research question.

Lecture Style

Planning and implementing research projects

Course Outline

The students will be individually guided through a series of tasks from planning, conducting, and presenting their research.

Grading System

Practice participation (50%), discussions (50%)

Prerequisite Reading

Guidance will be given at the first lecture and in each class as necessary.

Email

joji.kusuyama.bsin@tmd.ac.jp

Instructor's Contact Information

Please send an email (joji.kusuyama.bsin@tmd.ac.jp) to make an appointment.

Lecture No	041153				
Subject title	Lecture of Inorganic Biomaterials			Subject ID	
Instructors	川下 将一, 横井 太史, 島袋 将弥[KAWASHITA Masakazu, YOKOI Taishi, SHIMABUKURO Masaya]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Department of Inorganic Materials, Institute of Biomaterials and Bioengineering

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

All courses are carried out in a small group in order to learn fundmenatal knowledge and skills about inorganic biomaterials.

Course Outline

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.

Grading System

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.

Prerequisite Reading

It is desirable to review high-school level chemistry and physics.

Reference Materials

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)

Important Course Requirements

None

Note(s) to Students

None

Email

KAWASHITA Masakazu:kawashita.bcr@tmd.ac.jp

Lecture No	041154				
Subject title	Practice of Inorganic Biomaterials			Subject ID	
Instructors	川下 将一, 横井 太史, 島袋 将弥[KAWASHITA Masakazu, YOKOI Taishi, SHIMABUKURO Masaya]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Department of Inorganic Materials, Institute of Biomaterials and Bioengineering

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

All courses are carried out in a small group in order to learn fundmenatal knowledge and skills about inorganic biomaterials.

Course Outline

To search recent resaerch papers on inorganic biomaterials and discuss about the papers in order to develop knowledge on inroganic biomaterials.

Grading System

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.

Prerequisite Reading

It is desirable to review high-school level chemistry and physics.

Reference Materials

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)

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041155				
Subject title	Laboratory practice of Inorganic Biomaterials			Subject ID	
Instructors	川下 将一, 横井 太史, 島袋 将弥[KAWASHITA Masakazu, YOKOI Taishi, SHIMABUKURO Masaya]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Department of Inorganic Materials, Institute of Biomaterials and Bioengineering

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

All courses are carried out in a small group in order to learn fundmenatal knowledge and skills about inorganic biomaterials.

Course Outline

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.

Grading System

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.

Prerequisite Reading

It is desirable to review high-school level chemistry and physics.

Reference Materials

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)

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041156				
Subject title	Lecture of Public Health			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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 indiviual factors (e.g., genetic factor) and environmental factors, especially social detrerminants, their inter actions; make causal inference applying a life-course perspective on diseease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statstics; 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 preogran to prevent diseases in a real life setting.

Course Objective(s)

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 adnvaced analysis (multilevel analysis, propensity score moathcing, 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.

Lecture Style

Lectures, group discussions, and team project. English is used if needed

Course Outline

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

Grading System

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.

Prerequisite Reading

Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.

Reference Materials

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.

Important Course Requirements

Participants are required to have own research question. Instructor's permission are required before course registration

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Havard 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.

Lecture No	041157				
Subject title	Practice of Public Health			Subject ID	
Instructors					
Semester	Year Long 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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 indiviual factors (e.g., genetic factor) and environmental factors, especially social detrerminants, their inter actions; make causal inference applying a life-course perspective on diseease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statstics; 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 preogran to prevent diseases in a real life setting.

Course Objective(s)

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 adnvaced analysis (multilevel analysis, propensity score moathcing, 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.

Lecture Style

Lectures, group discussions, and team project. English is used if needed

Course Outline

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

Grading System

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.

Prerequisite Reading

Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.

Reference Materials

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.

Important Course Requirements

Participants are required to have own research question. Instructor's permission are required before course registration

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Havard 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.

Lecture No	041157				
Subject title	Practice of Public Health			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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 indiviual factors (e.g., genetic factor) and environmental factors, especially social detrerminants, their inter actions; make causal inference applying a life-course perspective on diseease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statstics; 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 preogran to prevent diseases in a real life setting.

Course Objective(s)

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 adnvaced analysis (multilevel analysis, propensity score moathcing, 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.

Lecture Style

Lectures, group discussions, and team project. English is used if needed

Course Outline

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

Grading System

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.

Prerequisite Reading

Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.

Reference Materials

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.

Important Course Requirements

Participants are required to have own research question. Instructor's permission are required before course registration

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Havard 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.

Lecture No	041158				
Subject title	Laboratory practice of Public Health			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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 indiviual factors (e.g., genetic factor) and environmental factors, especially social detrerminants, their inter actions; make causal inference applying a life-course perspective on diseease onset (e.g., long-term effect of fetus or childhood exposure); perform advanced statstics; 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 preogran to prevent diseases in a real life setting.

Course Objective(s)

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 adnvaced analysis (multilevel analysis, propensity score moathcing, 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.

Lecture Style

Lectures, group discussions, and team project. English is used if needed

Course Outline

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

Grading System

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.

Prerequisite Reading

Participants are expected to read materials distributed beforehand. For practice and lab, tasks will be given based on the progress.

Reference Materials

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.

Important Course Requirements

Participants are required to have own research question. Instructor's permission are required before course registration

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Havard 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.

Lecture No	415010				
Subject title	Lecture of Parasitology & Tropical Medicine			Subject ID	
Instructors	石野 智子[ISHINO Tomoko]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Department of Parasitology and Tropical disease (M&D tower 16F)

Course Purpose and Outline

This course introduces and discusses the medical and biological features and social impacts of parasitic diseases as an important global health issue based on evidence. To this end, the biology, clinical symptoms, epidemiology, and control methods of pathogenic parasites will be described. For parasitic diseases that are still a problem in the world, the needed findings/measures will be discussed.

Course Objective(s)

1. To understand the current status and challenges of parasitic diseases in the world. 2. To acquire knowledge about human pathogenic parasites. 3. To understand the latest research in parasitology, including methods, from recently published papers and on-going research in the lab.

Lecture Style

Students should contact with instructor in advance and then subjects are announced.

Course Outline

As exemplified by the spread of new coronavirus (COVID-19) infections throughout the world, it is clear that emerging and re-emerging infectious diseases will continue to occupy an important position in health issues in the 21st century. The combination of several factors, such as global warming, the active international movement and distribution of people and products, and the emergence of drug-resistant strains due to the development of medicine, makes it difficult to find a solution. As for parasitic diseases, the fact that they are closely related to local culture and customs is another factor that makes it difficult to solve. In this course, we will discuss current and future efforts to elucidate parasitic infections from the perspective of host-parasite interactions and to propose new solutions to these problems.

Grading System

Grading will be based on lecture attendance and participation in discussions.

Prerequisite Reading

Students need to read the presented research paper carefully and sort out some questions in advance. Students are expected to make an effort to research the latest relevant literature.

Important Course Requirements

Please contact with instructors in advance.

Email

ISHINO Tomoko:tishino.vip@tmd.ac.jp

Lecture No	415011				
Subject title	Practice of Parasitology & Tropical Medicine			Subject ID	
Instructors	石野 智子, 熊谷 貴, 新澤 直明[ISHINO Tomoko, KUMAGAI TAKASHI, SHINNZAWA Naoaki]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Department of Parasitology and Tropical disease (M&D tower 16F)

Course Purpose and Outline

This course introduces and discusses the medical and biological features and social impacts of parasitic diseases as an important global health issue based on evidence. To this end, the biology, clinical symptoms, epidemiology, and control methods of pathogenic parasites will be described. For parasitic diseases that are still a problem in the world, the needed findings/measures will be discussed. Specifically, the molecular mechanisms of malaria parasite infection will be introduced based on published papers.

Course Objective(s)

1. To understand the current status and challenges of parasitic diseases in the world. 2. To acquire knowledge about human pathogenic parasites. 3. To understand the latest research in parasitology, including methods, from recently published papers and on-going research in the lab.

Lecture Style

Students should contact with instructor in advance and then subjects are announced.

Course Outline

As exemplified by the spread of new coronavirus (COVID-19) infections throughout the world, it is clear that emerging and re-emerging infectious diseases will continue to occupy an important position in health issues in the 21st century. The combination of several factors, such as global warming, the active international movement and distribution of people and products, and the emergence of drug-resistant strains due to the development of medicine, makes it difficult to find a solution. As for parasitic diseases, the fact that they are closely related to local culture and customs is another factor that makes it difficult to solve. In this course, we will discuss current and future efforts to elucidate parasitic infections from the perspective of host-parasite interactions and to propose new solutions to these problems.

Grading System

Grading will be based on lecture attendance and active participation in discussions.

Prerequisite Reading

Students need to read the presented research paper carefully and sort out some questions in advance. Students are expected to make an effort to research the latest relevant literature in order to propose an original research plan.

Reference Materials

Molecular approaches to malaria / edited by Irwin W. Sherman／Sherman, Irwin W,：ASM Press, 2005

Malaria : methods and protocols／edited by Robert Ménard,Ménard, Robert,：Humana Press, 2012

Malaria methods and protocols／edited by Denise L. Doolan,Doolan, Denise L,：Humana, 2002

Important Course Requirements

Please contact with instructors in advance.

Email

ISHINO Tomoko:tishino.vip@tmd.ac.jp

Lecture No	415012				
Subject title	Laboratory practice of Parasitology & Tropical Medicine			Subject ID	
Instructors	石野 智子, 熊谷 貴, 新澤 直明[ISHINO Tomoko, KUMAGAI TAKASHI, SHINNZAWA Naoaki]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Department of Parasitology and Tropical disease (M&D tower 16F)

Course Purpose and Outline

This course introduces and discusses the medical and biological features and social impacts of parasitic diseases as an important global health issue based on evidence. To this end, the biology, clinical symptoms, epidemiology, and control methods of pathogenic parasites will be described. Students will understand the research proposals with methods aimed at elucidating infection mechanisms and developing new vaccines and drugs for parasites such as Plasmodium. Students perform experiments, interpret and discuss the results obtained, and plan the next experiment.

Course Objective(s)

1. To understand the current status and challenges of parasitic diseases in the world. 2. To acquire knowledge about human pathogenic parasites. 3. To attempt to elucidate unsolved problems in parasitology, including methods, by conducting experiments. 4. To learn how to present the research findings in meetings or as research papers.

Lecture Style

Students should contact with instructor in advance and then subjects are announced.

Course Outline

As exemplified by the spread of new coronavirus (COVID-19) infections throughout the world, it is clear that emerging and re-emerging infectious diseases will continue to occupy an important position in health issues in the 21st century. The combination of several factors, such as global warming, the active international movement and distribution of people and products, and the emergence of drug-resistant strains due to the development of medicine, makes it difficult to find a solution. As for parasitic diseases, the fact that they are closely related to local culture and customs is another factor that makes it difficult to solve. In this course, students conduct research in the aim of development of novel control strategies, to elucidate parasitic infections from the perspective of host-parasite interactions.

Grading System

Grading will be based on lecture attendance and active participation in discussions.

Prerequisite Reading

Students need to read the presented research paper carefully and sort out some questions in advance. Students are expected to make an effort to research the latest relevant literature in order to propose an original research plan. In the conduct of research, discussions should be held so that students can plan, select the most suitable methods, and interpret and discuss the results.

Reference Materials

Molecular approaches to malaria / edited by Irwin W. Sherman／Sherman, Irwin W,：ASM Press, 2005

Malaria : methods and protocols／edited by Robert Ménard,Ménard, Robert,：Humana Press, 2012

Malaria methods and protocols／edited by Denise L. Doolan,Doolan, Denise L,：Humana, 2002

Important Course Requirements

Since the experiments involve handling of pathogens and experimental animals, it is necessary to conduct the necessary training on research ethics and animal experiments within the university, obtain approval, and then comply with the regulations.

Email

ISHINO Tomoko:tishino.vip@tmd.ac.jp

Lecture No	041162				
Subject title	Lecture of Forensic Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Make sure of the venue to the instructor before lecture in each program.

Course Purpose and Outline

Understanding of the system for the calrification of cause of death, forensic autopsy, diagnosis of cazuse of dearh, sudden dearh and death from poisoning.

Course Objective(s)

To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.

Lecture Style

A small number of people

Course Outline

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.

Grading System

Participation and struggling in lecture, practice and examination are taken into evaluation.

Prerequisite Reading

Undrstanding and terminology of basic forensic medicine and human anatomy

Understanding of pathophysiology

Reference Materials

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,ﾖｼﾀﾞｹﾝｲﾁ,：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,ｲｼﾂﾞﾋﾃﾞｵ,ﾀｶﾂｱｷﾋﾛ,ｲｹﾀﾞﾉﾘｱｷ,：医学書院, 2013-01-01

Relationship With Other Subjects

none

Important Course Requirements

none

Note(s) to Students

Nothing

Lecture No	041163				
Subject title	Practice of Forensic Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Make sure of the venue to the instructor before lecture in each program.

Course Purpose and Outline

Understanding of the system for the calrification of cause of death, forensic autopsy, diagnosis of cazuse of dearh, sudden dearh and death from poisoning.

Course Objective(s)

To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.

Lecture Style

A small number of people

Course Outline

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.

Grading System

Participation and struggling in lecture, practice and examination are taken into evaluation.

Prerequisite Reading

Undrstanding of basic forensic medicin and, terms

Reference Materials

事例に学ぶ法医学･医事法 第３版／吉田謙一 著,ﾖｼﾀﾞｹﾝｲﾁ,: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,ｲｼﾂﾞﾋﾃﾞｵ,ﾀｶﾂｱｷﾋﾛ,ｲｹﾀﾞﾉﾘｱｷ,:医学書院, 2013-01-01

Knight's forensic pathology／Pekka Saukko, Bernard Knight,Saukko, Pekka J,Knight, Bernard,:CRC Press, 2016

Relationship With Other Subjects

none

Important Course Requirements

none

Note(s) to Students

Nothing

Lecture No	041164				
Subject title	Laboratory practice of Forensic Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Make sure of the venue to the instructor before lecture in each program.

Course Purpose and Outline

Understanding of the system for the calrification of cause of death, forensic autopsy, diagnosis of cazuse of dearh, sudden dearh and death from poisoning.

Course Objective(s)

To obtain the ability of making a basic written statement of an expert opinion on the basis of autopsy findings.

Lecture Style

A small number of people. Sometimes field work at autopsy.

Course Outline

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.

Grading System

Participation and struggling in lecture, practice and examination are taken into evaluation.

Prerequisite Reading

Undrstanding of basic forensic medicin and, terms

TextBook

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,ｲｼﾂﾞﾋﾃﾞｵ,ﾀｶﾂｱｷﾋﾛ,ｲｹﾀﾞﾉﾘｱｷ,：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,ﾖｼﾀﾞｹﾝｲﾁ,：有斐閣, 2010-09-30

Reference Materials

Forensic mdicine, medical law based on forensic autopsy cases. Yuhikaku Boks, Ken-ichi Yoshida (2010/9/25)

Standaerd Textbook Series Forensic Medicine, Igsku-Shoin, Hideo Ishidu, Mituhiro Takatsu (2013/1/1)

Relationship With Other Subjects

none

Important Course Requirements

none

Note(s) to Students

Nothing

Lecture No	041165				
Subject title	Lecture of Health Care Management and Planning			Subject ID	
Instructors	岡田 就将[OKADA Shuushou]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

To introduce the domestic and foreign documents and papers about the latest health and welfare policies. And to analyze, discuss and evaluate these contents.

Course Outline

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.

Grading System

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.

Prerequisite Reading

The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.

Reference Materials

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)

Important Course Requirements

None in particular

Note(s) to Students

Not particular

Email

sokd.hcm@tmd.ac.jp

Instructor's Contact Information

Every Wednesday 13:00-15:00

Lecture No	041166				
Subject title	Practice of Health Care Management and Planning			Subject ID	
Instructors	岡田 就将[OKADA Shuushou]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lecture place

M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

To introduce the domestic and foreign documents and papers about the latest health and welfare policies. And to analyze, discuss and evaluate these contents.

Course Outline

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.

Grading System

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.

Prerequisite Reading

The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.

Reference Materials

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)

Important Course Requirements

None in particular

Note(s) to Students

Not particular

Lecture No	041167				
Subject title	Laboratory practice of Health Care Management and Planning			**Subject ID**	
Instructors	岡田 就将[OKADA Shuushou]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lecture place

M&D Tower 16 F Graduate student lounge of Health Care Management and Planning Division or at the conference room on the same floor.

Prerequisite Reading

The recent situation of medicine and related areas should be investigated through the following books, the internet, etc. including mass media information.

Important Course Requirements

None in particular

Note(s) to Students

Not particular

Lecture No	041168				
Subject title	Lecture of Molecular Epidemiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Conference room of Molecular Epidemiology at 24th Floor of M&D tower

Course Purpose and Outline

Learn how human genome research is applied to basic and clinical medicine.

Course Objective(s)

To understand how human genome information is related to human diseases.

Lecture Style

Lectures will be done in a small group (up to 10 person). Practice and lab will be taught in a one-on-one manner.

Course Outline

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.

Grading System

Grading will be done by the attendance and the presentation at the lab meeting, and by the content of the reporting.

Prerequisite Reading

Read the first chapter of "Human Genome Epidemiology M.Khoury et al (Oxford press)before attending the class.

Reference Materials

Human Genome Epidemiology M.Khoury et al. (Oxford Press)

Personal Genomics and Personalized Medicine H.Bolouri (Imperial College Press)

Lecture No	041169				
Subject title	Practice of Molecular Epidemiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					
Lecture place Conference room of Molecular Epidemiology at 24th Floor of M&D tower					
Course Purpose and Outline Learn how human genome research is applied to basic and clinical medicine.					
Course Objective(s) To understand how human genome information is related to human diseases.					
Lecture Style Lectures will be done in a small group (up to 10 person). Practice and lab will be taught in a one-on-one manner.					
Course Outline Goals/Outline: To learn methods for genomic and statistical analysis by relevant computer software using template and actual data-sets,					
Grading System Grading will be done by the attendance and the presentation at the lab meeting, and by the content of the reporting.					
Prerequisite Reading Read "Personal Genomics and Personalized Medicine H.Bolouri et al(Imperial College Press)" before the lectures					
Reference Materials Human Genome Epidemiology M.Khoury et al. (Oxford Press) Personal Genomics and Personalized Medicine H.Bolouri (Imperial College Press)					
Important Course Requirements None					

Lecture No	041170				
Subject title	Laboratory practice of Molecular Epidemiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					
Lecture place Laboratory room of Molecular Epidemiology at 24th Floor of M&D tower					
Course Purpose and Outline Conduct project research under the guidance of supervisor					
Course Objective(s) Conduct individual research project and write an original paper					
Lecture Style Lab practice and will be taught in a one-on-one manner.					
Course Outline 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.					
Grading System Grading will be done by the research reports, presentation at meetings, and by the content of the original paper.					
Prerequisite Reading Survey papers relevant to the research project					

Lecture No	041174				
Subject title	Lecture of Health Policy and Informatics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Research unit of Health Care Informatics Section

Course Purpose and Outline

To obtain the theory, applications and practical knowledge for handling medical information and database management.

Course Objective(s)

To understamd methodology for analysing case-mix health data and administrative data

Lecture Style

lecture and small group discussion

Course Outline

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.

Grading System

reports, conference presentation, etc.

Prerequisite Reading

Health system of Japan

TextBook

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

Lecture No	041175				
Subject title	Practice of Health Policy and Informatics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
All classes are taught in Japanese.					
Lecture place Research unit of Health Care Informatics Section					
Course Purpose and Outline To obtain the theory, applications and practical knowledge for handling medical information and database management.					
Course Objective(s) To understamd methodology for analysing case-mix health data and administrative data					
Lecture Style lecture and small group discussion					
Course Outline Practices of data analysis for large-scale health care data bases will be available					
Grading System reports, conference presentation, etc.					
Prerequisite Reading Health system of Japan					
TextBook 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					

Lecture No	041176				
Subject title	Laboratory practice of Health Policy and Informatics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Research unit of Health Care Informatics Section

Course Purpose and Outline

To obtain the theory, applications and practical knowledge for handling medical information and database management.

Course Objective(s)

To understamd methodology for analysing case-mix health data and administrative data

Lecture Style

lecture and small group discussion

Course Outline

Data analysis using SQL and OPAP database

Grading System

reports, conference presentation, etc.

Prerequisite Reading

Health system of Japan

TextBook

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

Lecture No	041177				
Subject title	Lecture of Life Sciences and Bioethics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

Schedule of Lectures and seminars will be annonced accordingly

Course Purpose and Outline

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.

Course Objective(s)

Learn how to prepare, submit, and discuss the protcol of clinical studies for I RB and REC

Lecture Style

Our course will be consisted from no more than 5-6 students. It is highly recommended to actively participate in the debate and discussion.

Course Outline

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.

Grading System

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%).

Prerequisite Reading

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Reference Materials

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Important Course Requirements

Bioethics and CITI class on April 27 (FRI) are mandatory

Note(s) to Students

Not in particular.

Lecture No	041178				
Subject title	Practice of Life Sciences and Bioethics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

Schedule of Lectures and seminars will be annonced accordingly

Course Purpose and Outline

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.

Course Objective(s)

Learn how to prepare, submit, and discuss the protcol of clinical studies for I RB and REC

Lecture Style

Our course will be consisted from no more than 5–6 students. It is highly recommended to actively participate in the debate and discussion.

Course Outline

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.

Grading System

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%).

Prerequisite Reading

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Reference Materials

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Important Course Requirements

Bioethics and CITI class on April 27 (FRI) are mandatory

Note(s) to Students

Not in particular.

Lecture No	041179				
Subject title	Laboratory practice of Life Sciences and Bioethics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

Schedule of Lectures and seminars will be annonced accordingly

Course Purpose and Outline

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.

Course Objective(s)

Learn how to prepare, submit, and discuss the protcol of clinical studies for I RB and REC

Lecture Style

Our course will be consisted from no more than 5–6 students. It is highly recommended to actively participate in the debate and discussion.

Course Outline

Goals/Outline:

It is necessary to directly conduct such a medical study with either basic or clinical research theme.

Grading System

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%).

Prerequisite Reading

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Reference Materials

In taking courses in this field, it is mandatory to attend a lecture on research ethics at the initial training for graduate course.

Important Course Requirements

Bioethics and CITI class on April 27 (FRI) are mandatory

Note(s) to Students

Not in particular.

Lecture No	041180				
Subject title	Lecture of Forensic Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Dentistry Office (M&D Tower 8F)

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

This course is small-group format. Students learn through a lecture and a case report.

Course Outline

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.

Grading System

Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.

Prerequisite Reading

Since an instructor gives you some instructions as necessary, please contact to him beforehand.

Reference Materials

Forensic Dental Science (2st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hirosi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)

Important Course Requirements

Please note a leak of the personal information such as photographs to treat with a lecture document.

Note(s) to Students

None

Lecture No	041181				
Subject title	Practice of Forensic Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Forensic Dentistry Office (M&D Tower 8F)

Course Purpose and Outline

The purpose of this class is to understand the usefulness of personal identification by dental findings through dental charting using case samples.

Course Objective(s)

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.

Lecture Style

This course is small-group format. Students learn through a lecture and a case report.

Course Outline

This is a practical course for individual identification based on dental findings, including dental charting.

Grading System

Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.

Prerequisite Reading

Since an instructor gives you some instructions as necessary, please contact to him beforehand.

Reference Materials

Forensic Dental Science (2st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hirosi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)

Important Course Requirements

Please note a leak of the personal information such as photographs to treat with a lecture document.

Note(s) to Students

None

Lecture No	041182				
Subject title	Laboratory practice of Forensic Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Forensic Dentistry Lab. (M&D Tower 8F)

Course Purpose and Outline

Students will develop the ability to plan their own research project through a given research theme related to personal identification.

Course Objective(s)

Students will be able to complete a given research theme, and get the ability to draw up their own research theme.

Lecture Style

This course is small-group format. Students learn through experiments.

Course Outline

None this year.

Grading System

Grading is comprehensively performed based on participation situation, the learning attitude to programs, and submitted report contents.

Prerequisite Reading

Since an instructor gives you some instructions as necessary, please contact to him beforehand.

Reference Materials

Forensic Dental Science (2st ed., Masanori Takahasi, Koichi Sakurada et al., Nagasuesyoten), The New Textbook for Forensic Death Investigations and Autopsies (1st et., Hirosi Ikegaya and Koichi Sakurada, Kinpodo), New Essentials of Forensic Medicine (5th ed., Takehiko Takatori, Ishiyaku Publishers Inc.)

Important Course Requirements

Please note a leak of the personal information such as photographs to treat with a lecture document.

Note(s) to Students

None

Lecture No	041183				
Subject title	Lecture of Health Care Economics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Office of Health Care Economics

Course Purpose and Outline

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.

Course Objective(s)

To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE

Lecture Style

Study of the following through lectures and research on specific case

・Research plan (Framework, Literature review, Strategies)

・Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)

・Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)

・Logistic thinking

・Others

Course Outline

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

Grading System

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

Prerequisite Reading

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

Reference Materials

・ 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)

・ J.W. Creswell "Research design: Qualitative, quantitative, and mixed method approaches" 2nd ed., Sage, 2003. (Translation in Japanese also available)

・ Tuyoshi Kawasaki "Shakaikagakukei 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.

・ S. Folland, A.C. Goodman, M. Stano "The Economics of Health and Health Care" Prentice Hall.

・ J.M. Wooldridge "Introductory Econometrics; A Modern Approach" South-Western Pub.

Important Course Requirements
None
Note(s) to Students
Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.

Lecture No	041184				
Subject title	Practice of Health Care Economics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Office of Health Care Economics

Course Purpose and Outline

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.

Course Objective(s)

To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE

Lecture Style

Study of the following through lectures and research on specific case

・Research plan (Framework, Literature review, Strategies)

・Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)

・Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)

・Logistic thinking

・Others

Course Outline

Designing and refining of each research plan through presentation and interactive discussion

Grading System

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

Prerequisite Reading

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

Reference Materials

・ 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)

・ J.W. Creswell "Research design: Qualitative, quantitative, and mixed method approaches" 2nd ed., Sage, 2003. (Translation in Japanese also available)

・ Tuyoshi Kawasaki "Shakaikagakukei 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.

・ S. Folland, A.C. Goodman, M. Stano "The Economics of Health and Health Care" Prentice Hall.

・ J.M. Wooldridge "Introductory Econometrics; A Modern Approach" South-Western Pub.

Important Course Requirements

None

Note(s) to Students

Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.

Lecture No	041185				
Subject title	Laboratory practice of Health Care Economics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Office of Health Care Economics

Course Purpose and Outline

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.

Course Objective(s)

To learn the framework of healthcare economics, and possibly achieve certain level in the Economics Record Examination by Japan Association of ERE

Lecture Style

Study of the following through lectures and research on specific case

・Research plan (Framework, Literature review, Strategies)

・Research design (Introduction, Purpose, Research questions and hypotheses, Use of theory, Terms and definitions, Research limitations and significance, Quantitative research)

・Paper structure (Title, Abstract, Introduction, Methods, Results, Discussion, References)

・Logistic thinking

・Others

Course Outline

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

Grading System

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

Prerequisite Reading

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

Reference Materials

・ 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)

・ J.W. Creswell "Research design: Qualitative, quantitative, and mixed method approaches" 2nd ed., Sage, 2003. (Translation in Japanese also available)

・ Tuyoshi Kawasaki "Shakaikagakukei 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.

・ S. Folland, A.C. Goodman, M. Stano "The Economics of Health and Health Care" Prentice Hall.

・ J.M. Wooldridge "Introductory Econometrics; A Modern Approach" South-Western Pub.

Important Course Requirements

None
Note(s) to Students Plans to schedule intensive lectures by part-time lectures on basic statistics, microeconomics, and health care economics as applied microeconomics. Audits are welcomed.

Lecture No	041189				
Subject title	Lecture of Oral Health Promotion			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

If you would like to attend, please contact us at the email address below.

secretary.ohp@tmd.ac.jp Ito

Lecture place

OHP Library （There is a possibility to be chnaged depending on the programs and instructors

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format

Course Outline

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.

Grading System

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.

Grading Rule

A minimum of 60% overall is considered acceptable.

Prerequisite Reading

The following textbooks are recommended for the study of preventive dentistry and oral hygiene.

TextBook

Oral Epidemiology:A Textbook on Oral Health Conditions, Research Topics and Methods／Marco A. peres, Jose Leopoldo Ferreira Antunesn, Richard G. Watt, editors,Peres, Marco A,Antunes, José Leopoldo Ferreira,Watt, Richard G,：Springer，2021

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041190				
Subject title	Practice of Oral Health Promotion			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

If you would like to attend, please contact us at the email address below.

secretary.ohp@tmd.ac.jp Ito

Lecture place

OHP Library （There is a possibility to be chnaged depending on the programs and instructors

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format

Course Outline

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.

Grading System

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.

Prerequisite Reading

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.

TextBook

Oral Epidemiology:A Textbook on Oral Health Conditions, Research Topics and Methods／Marco A. peres, Jose Leopoldo Ferreira Antunesn, Richard G. Watt, editors,Peres, Marco A,Antunes, José Leopoldo Ferreira,Watt, Richard G,: Springer, 2021

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

Lecture No	041191				
Subject title	Laboratory practice of Oral Health Promotion			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

If you would like to attend, please contact us at the email address below.

secretary.ohp@tmd.ac.jp Ito

Lecture place

OHP Library （There is a possibility to be chnaged depending on the programs and instructors

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format

Course Outline

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.

Grading System

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.

Prerequisite Reading

The following textbooks are recommended for the study of preventive dentistry and oral hygiene.

TextBook

Oral Epidemiology:A Textbook on Oral Health Conditions, Research Topics and Methods／Marco A. peres, Jose Leopoldo Ferreira Antunesn, Richard G. Watt, editors,Peres, Marco A,Antunes, José Leopoldo Ferreira,Watt, Richard G,：Springer, 2021

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041195				
Subject title	Lecture of Educational System in Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

・留学生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.

Lecture place

Advanced Theories and Exercises: Online and in-person decisions will be made according to university activity restrictions.

Practical training: Will be conducted mainly in the laboratory of the field concerned. (Please check with your instructor for details.)

Course Purpose and Outline

In dental education, which is directly related to dental licensure and specialist certification, it is important to appropriately evaluate the abilities acquired by students through the educational programs offered and to demonstrate that the quality of education is at a certain level. The purpose of this course is to acquire the basic knowledge necessary for research activities related to pre- and post-graduate dental education, and to acquire knowledge about the special characteristics of dental education, the state of international standards in dental education, and the evaluation of dental education programs based on new developments.

Course Objective(s)

Individual behavioral objectives include the following

1) To be able to explain basic issues in dental education (e.g., curriculum planning).

(2) To be able to explain the role of evaluation in dental education.

3) To be able to explain the background of dental education in society.

4) To be able to explain international trends in dental education.

5) To be able to explain new developments in dental education.

Lecture Style

Lecture (discussion with instructor) and self-study

Course Outline

Basic knowledge, necessary for research activities related to pre- and post-graduate dental education

Advanced: Basic issues related to dental education (pre- and post-graduate education)

Quality assurance of dental education programs

New developments in dental education

International Standards in Dental Education

Grading System

Evaluation will be based on participation in discussions, exercises, and research training, as well as presentations. In addition, an overall evaluation will be made based on research content, the degree of involvement in various studies and research conferences, and the number of conference presentations.

Examples of evaluation activities

(1) Evaluation based on the content of reports on assignments presented in class.

Each report will be graded on a 5-point scale.

(2) Evaluation of presentations on the assignments presented in class.

Evaluation will be based on the structure of the presentation, the quality of the presentation, and the question-and-answer session.

Prerequisite Reading

Be sure to actively collect information on university education provided by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Japan University Accreditation Association (JUAA), and other organizations, including the latest information, on a regular basis, and to interpret the information in line with social trends on a daily basis.

Important Course Requirements

In order to advance not only the acquisition of knowledge but also the interpretation and application of knowledge based on the students' ideas, it is necessary to have discussions with the lecturer in charge of the course, and participation in all lectures is basically required. If for some unavoidable reason a student is unable to attend a class, an alternative method of attendance will be discussed and arranged on a case-by-case basis.

Note(s) to Students

In some classes, the course may be conducted in English as appropriate.
Assignments must be submitted by the due date.

The class schedule is as follows
Advanced Theory: 6 credits
6 credits: 90 45-minute classes

October to December of the first year: Every Monday and Thursday from 13:00 to 17:00 (10 lessons per week for 9 weeks).
If a substitution is necessary, other substitution dates will be offered in advance.

Lecture No	041196				
Subject title	Practice of Educational System in Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

・留学生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.

Lecture place

Advanced Theories and Exercises: Online and in-person decisions will be made according to university activity restrictions.
Practical training: Will be conducted mainly in the laboratory of the field concerned. (Please check with your instructor for details.)

Course Purpose and Outline

In dental education, which is directly related to dental licensure and specialist certification, it is important to appropriately evaluate the abilities acquired by students through the educational programs offered and to demonstrate that the quality of education is at a certain level. The purpose of this course is to acquire the basic knowledge necessary for research activities related to pre- and post-graduate dental education, and to acquire knowledge about the special characteristics of dental education, the state of international standards in dental education, and the evaluation of dental education programs based on new developments.

Course Objective(s)

Exercises
Individual behavioral objectives include the following
1) To be able to explain the relationship between educational objectives, strategies, and evaluation through the dental education program production exercise.
(2) To be able to explain the role and importance of educational evaluation systems through the practice of evaluation of dental education programs.

Course Outline

Basic knowledge required for research activities related to pre- and post-graduate dental education

Exercise: Basic issues related to dental education (pre- and post-graduate education)
Quality assurance of dental education programs
New developments in dental education
International Standards in Dental Education

Grading System

Evaluation will be based on participation in discussions, exercises, and research training, as well as presentations. In addition, an overall evaluation will be made based on research content, the degree of involvement in various studies and research conferences, and the number of conference presentations.
Examples of evaluation activities
(1) Evaluation based on the content of reports on assignments presented in class.
Each report will be graded on a 5-point scale.
(2) Evaluation of presentations on the assignments presented in class.
Evaluation will be based on the structure of the presentation, the quality of the presentation, and the question-and-answer session.

Prerequisite Reading

Be sure to actively collect information on university education provided by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Japan University Accreditation Association (JUAA), and other organizations, including the latest information, on a regular basis, and to interpret the information in line with social trends on a daily basis.

Important Course Requirements
In order to advance not only the acquisition of knowledge but also the interpretation and application of knowledge based on the students' ideas, it is necessary to have discussions with the lecturer in charge of the course, and participation in all lectures is basically required. If for some unavoidable reason a student is unable to attend a class, an alternative method of attendance will be discussed and arranged on a case-by-case basis.
Note(s) to Students
In some classes, the course may be conducted in English as appropriate. Assignments must be submitted by the due date. The class schedule is as follows Seminar 4 credits: 45-minute classes, 60 periods January and February of the first year, May and June of the second year: Every Monday: 13:00-17:00 (5 lessons per week for 12 weeks) If a substitution is necessary, other substitution dates will be offered in advance.

Lecture No	041197				
Subject title	Laboratory practice of Educational System in Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

・留学生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.

Lecture place

Advanced Theories and Exercises: If the university activity limit level is 0.5 or higher, they will be held online.

Practical training: To be held mainly in the laboratory of the field concerned. (For details, please check with the faculty member in charge.)

Course Purpose and Outline

In dental education, which is directly related to dental licensure and specialist certification, it is important to appropriately evaluate the abilities acquired by students through the educational programs offered and to demonstrate that the quality of education is at a certain level. The purpose of this course is to acquire the basic knowledge necessary for research activities related to pre- and post-graduate dental education, and to acquire knowledge about the special characteristics of dental education, the state of international standards in dental education, and the evaluation of dental education programs based on new developments.

Course Objective(s)

Research Practice

Individual behavioral objectives include the following

1) To develop a research plan regarding practice, evaluation, and improvement activities in dental education.

(2) Conduct research on practice, evaluation, and improvement activities in dental education.

Lecture Style

Lecture (discussion with the instructor in charge), practical training, and self-study

Practical training will be conducted mainly through self-study by students.

Course Outline

Practice of research activities based on the basic knowledge required for research activities related to pre- and post-graduate dental education.

Grading System

(1) Evaluation based on the contents of reports on the assignments presented in class.

Each report will be graded on a 5-point scale.

(2) Evaluation of presentations on the assignments presented in class.

Evaluation will be based on the structure of the presentation, the quality of the presentation, and the question-and-answer session.

Overall evaluation will be made by combining (1), (2), and other noteworthy activities.

Prerequisite Reading

Be sure to actively collect information on university education provided by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Japan University Accreditation Association (JUAA), and other organizations, including the latest information, on a regular basis, and to interpret the information in line with social trends on a daily basis.

Reference Materials

For details, please contact your instructor.

Important Course Requirements

In research training, students are expected to act independently, voluntarily, and responsibly.

Note(s) to Students

In some classes, the course may be conducted in English as appropriate.

Assignments must be submitted by the due date.

The class schedule is as follows

Research Practicum (1 credit: 30 periods)

8 credits: 45-minute classes, 240 periods

2nd year July-September, October-December, 3rd year April-June 3rd year

Every Tuesday and Thursday: 13:00-17:00 (10 lessons per week for 24 weeks)

If a substitution is necessary, other substitution dates will be offered in advance.

Lecture No	041198				
Subject title	Lecture of Educational Media Development			Subject ID	
Instructors	木下 淳博, 須永 昌代[KINOSHITA ATSUHIRO, SUNAGA MASAYO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online class via Zoom, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format.

Course Outline

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.

Grading System

Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.

Prerequisite Reading

Student should read documents on the WebClass course, and follow as instructed.

Reference Materials

TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.

Important Course Requirements

Nothing in particular

Note(s) to Students

none.

Email

KINOSHITA ATSUHIRO:kinoshita-emdv@tmd.ac.jp

Instructor's Contact Information

KINOSHITA ATSUHIRO:16-17 pm, Building #3 5th floor, Department of Educational Media Development

Lecture No	041199				
Subject title	Practice of Educational Media Development			Subject ID	
Instructors	木下 淳博, 須永 昌代[KINOSHITA ATSUHIRO, SUNAGA MASAYO]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online class via Zoom, Information Retrieval Room in University Library, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format.

Course Outline

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.

Grading System

Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.

Prerequisite Reading

Student should read documents on the WebClass course, and follow as instructed.

Reference Materials

TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.

Important Course Requirements

Nothing in particular

Note(s) to Students

none.

Email

KINOSHITA ATSUHIRO:kinoshita-emdv@tmd.ac.jp

Instructor's Contact Information

KINOSHITA ATSUHIRO:16-17 pm, Building #3 5th floor, Department of Educational Media Development

Lecture No	041200				
Subject title	Laboratory practice of Educational Media Development			Subject ID	
Instructors	木下 淳博, 須永 昌代[KINOSHITA ATSUHIRO, SUNAGA MASAYO]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Online class via Zoom, Information Retrieval Room in University Library, Faculty Room of Department of Educational Media Development, or Demonstration Room on 5th floor in Building 7.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group format.

Course Outline

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.

Grading System

Comprehensive evaluation based on the original teaching materials, research activities, and academic presentations.

Prerequisite Reading

Student should read documents on the WebClass course, and follow as instructed.

Reference Materials

TMDU Clinical Training Series – for ESL Dentists –, Kinoshita A, et al., Developer: Tokyo Medical and Dental University (TMDU), Publisher: University of Tokyo Press, 2012.

Important Course Requirements

Nothing in particular

Note(s) to Students

none.

Email

KINOSHITA ATSUHIRO:kinoshita-emdv@tmd.ac.jp

Instructor's Contact Information

KINOSHITA ATSUHIRO:16-17 pm, Building #3 5th floor, Department of Educational Media Development

Lecture No	041201				
Subject title	Lecture of Insured Medical Care Management			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

To be announced

Course Purpose and Outline

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 manegement.

Course Objective(s)

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.

Lecture Style

Lecture and small group discussion

Course Outline

Goals/outline:

To learn the structure and the implementation details of the social insurance system for medical care in Japan.

Grading System

Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Paticipation 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.

Prerequisite Reading

Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.

Reference Materials

No reference materials written in English. There are some reference materials in Japanese.

Important Course Requirements

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.

Note(s) to Students

Not in particular.

Lecture No	041202				
Subject title	Practice of Insured Medical Care Management			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

To be announced

Course Purpose and Outline

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 manegement.

Course Objective(s)

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.

Lecture Style

Lecture and small group discussion

Course Outline

Goals/outline:

To investigate and discuss on the problems on the health insurance system.

Grading System

Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Paticipation 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.

Prerequisite Reading

Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.

Reference Materials

No reference materials written in English. There are some reference materials in Japanese.

Important Course Requirements

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.

Note(s) to Students

Not in particular.

Lecture No	041203				
Subject title	Laboratory practice of Insured Medical Care Management			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

To be announced

Course Purpose and Outline

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 manegement.

Course Objective(s)

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.

Lecture Style

Lecture and small group discussion

Course Outline

Goals/outline:

To plan and conduct a research project on social insurance system, including data collection and analyses.

Grading System

Will be considered based on the participation and its outcome to Lecture, Practices, and Lab works. Paticipation 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.

Prerequisite Reading

Being familiar with the medical terminology. A working experience as a medical staff or medical system office personnel is necessary.

Reference Materials

No reference materials written in English. There are some reference materials in Japanese.

Important Course Requirements

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.

Note(s) to Students

Not in particular.

Lecture No	041204				
Subject title	Lecture of Global Health Entrepreneurship			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

Lectures are held in lecture rooms (Graduate Lecture Room 2, M&D Tower, 13th FL; other room; or online using Zoom. Venue for practices and labs should be confirmed with instructors.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Lectures, group discussions, and team project. English is used in principle.

Course Outline

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.

Grading System

Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.

Prerequisite Reading

Participants are expected to read materials distributed beforehand.

Reference Materials

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 Birn, 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.

Lecture No	041205				
Subject title	Practice of Global Health Entrepreneurship			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

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.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Lectures, group discussions, and team project. English is used in principle.

Course Outline

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.

Grading System

Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.

Prerequisite Reading

Participants are expected to read materials distributed beforehand.

Reference Materials

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 Birn, 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.

Lecture No	041206				
Subject title	Laboratory practice of Global Health Entrepreneurship			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

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.

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

Lectures, group discussions, and team project. English is used in principle.

Course Outline

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.

Grading System

Grades are based on participation at lectures, practices, and field studies; performances in the projects; and levels of attitude, skills and knowledge.

Prerequisite Reading

Participants are expected to read materials distributed beforehand.

Reference Materials

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 Birn, 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.

Lecture No	415007				
Subject title	Lecture of Clinical Biostatistics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Building 8 North

Course Purpose and Outline

In medical research, it is necessary to appropriately estimate the therapeutic effects from the observed data and to interpret the results appropriately. Clinical biostatistics is the study of trial design and statistical analysis methods for the appropriate and efficient evaluation of therapeutic effects.

In this lecture, participants will learn the basic concepts of clinical trial methodology and regulatory science in clinical development, and also will be able to (1) use advanced trial design and statistical analysis methods properly, and (2) discuss regulatory science issues in the fields of drug development and clinical biostatistics. In addition, in order to develop a new trial design and statistical methodology, mathematical approach for formulating an observed data based on mathematical models, computer simulation methods for evaluating the performance of statistical methodologies, and writing skills for a submission of manuscript to clinical biostatistics journals. Furthermore, to realize a healthy society, information and data that contribute to people's behavior change are appropriately collected and analyzed. It is necessary to disseminate the results of data analysis so that they can be understood by various stakeholders. The goal of this lecture is also to acquire the perspectives of medical data science by discussing our ongoing projects.

Course Objective(s)

The participants will be able to:

1. apply basic clinical trial designs and statistical analysis methods.
2. explain the issues of regulatory science from the perspectives of drug/medical device developments and clinical biostatistics.
3. understand and explain the mathematical background of literature on statistical methodologies.
4. conduct computer simulation experiments to evaluate the performance of statistical methods using SAS and/or R software.
5. write a paper on statistical methodologies.
6. explain the results of statistical analysis to stakeholders with various expertise.

Lecture Style

Group discussion in seminar style.

Course Outline

Discussion on the topics of clinical biostatistics and regulatory sciences using methodological papers and books in clinical biostatistics.

Grading System

Participation, discussion, and practicum.

Prerequisite Reading

Participants are expected to read papers and books.

Important Course Requirements

Instructor' s permission is required before course registration. The bases of clinical trial methodology, mathematical statistics, matrix algebra, and differential and integral calculus are required in the group discussion of this course.

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Lecture No	415008				
Subject title	Practice of Clinical Biostatistics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Building 8 North

Course Purpose and Outline

In medical research, it is necessary to appropriately estimate the therapeutic effects from the observed data and to interpret the results appropriately. Clinical biostatistics is the study of trial design and statistical analysis methods for the appropriate and efficient evaluation of therapeutic effects.

In this lecture, participants will learn the basic concepts of clinical trial methodology and regulatory science in clinical development, and also will be able to (1) use advanced trial design and statistical analysis methods properly, and (2) discuss regulatory science issues in the fields of drug development and clinical biostatistics. In addition, in order to develop a new trial design and statistical methodology, mathematical approach for formulating an observed data based on mathematical models, computer simulation methods for evaluating the performance of statistical methodologies, and writing skills for a submission of manuscript to clinical biostatistics journals. Furthermore, to realize a healthy society, information and data that contribute to people's behavior change are appropriately collected and analyzed. It is necessary to disseminate the results of data analysis so that they can be understood by various stakeholders. The goal of this lecture is also to acquire the perspectives of medical data science by discussing our ongoing projects.

Course Objective(s)

The participants will be able to:

1. apply basic clinical trial designs and statistical analysis methods.
2. explain the issues of regulatory science from the perspectives of drug/medical device developments and clinical biostatistics.
3. understand and explain the mathematical background of literature on statistical methodologies.
4. conduct computer simulation experiments to evaluate the performance of statistical methods using SAS and/or R software.
5. write a paper on statistical methodologies.
6. explain the results of statistical analysis to stakeholders with various expertise.

Lecture Style

Group discussion in seminar style.

Course Outline

Discussion on the topics of clinical biostatistics and regulatory sciences using methodological papers and books in clinical biostatistics.

Grading System

Participation, discussion, and practicum.

Prerequisite Reading

Tasks will be given according to the study progress.

Important Course Requirements

Instructor's permission is required before course registration. The bases of clinical trial methodology, mathematical statistics, matrix algebra, and differential and integral calculus are required in the group discussion of this course.

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Lecture No	415009				
Subject title	Laboratory practice of Clinical Biostatistics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Building 8 North

Course Purpose and Outline

In medical research, it is necessary to appropriately estimate the therapeutic effects from the observed data and to interpret the results appropriately. Clinical biostatistics is the study of trial design and statistical analysis methods for the appropriate and efficient evaluation of therapeutic effects.

In this lecture, participants will learn the basic concepts of clinical trial methodology and regulatory science in clinical development, and also will be able to (1) use advanced trial design and statistical analysis methods properly, and (2) discuss regulatory science issues in the fields of drug development and clinical biostatistics. In addition, in order to develop a new trial design and statistical methodology, mathematical approach for formulating an observed data based on mathematical models, computer simulation methods for evaluating the performance of statistical methodologies, and writing skills for a submission of manuscript to clinical biostatistics journals. Furthermore, to realize a healthy society, information and data that contribute to people's behavior change are appropriately collected and analyzed. It is necessary to disseminate the results of data analysis so that they can be understood by various stakeholders. The goal of this lecture is also to acquire the perspectives of medical data science by discussing our ongoing projects.

Course Objective(s)

The participants will be able to:

1. apply basic clinical trial designs and statistical analysis methods.
2. explain the issues of regulatory science from the perspectives of drug/medical device developments and clinical biostatistics.
3. understand and explain the mathematical background of literature on statistical methodologies.
4. conduct computer simulation experiments to evaluate the performance of statistical methods using SAS and/or R software.
5. write a paper on statistical methodologies.
6. explain the results of statistical analysis to stakeholders with various expertise.

Lecture Style

Group discussion in seminar style.

Course Outline

Discussion on the topics of clinical biostatistics and regulatory sciences using methodological papers and books in clinical biostatistics.

Grading System

Participation, discussion, and practicum.

Prerequisite Reading

Tasks will be given according to the study progress.

Important Course Requirements

Instructor's permission is required before course registration. The bases of clinical trial methodology, mathematical statistics, matrix algebra, and differential and integral calculus are required in the group discussion of this course.

Note(s) to Students

This course will offer options depending upon the need of each individual situation, such as working during daytime on weekdays.

Lecture No	415060				
Subject title	Lecture of Infectious Disease Emergency Preparedness			**Subject ID**	
Instructors	矢沢 知子[YAZAWA TOMOKO]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

remote learning

Course Purpose and Outline

The purpose of this course is to analyze domestic and international infectious disease crisis management responses and to present measures for medical institutions, facilities, and government agencies to prepare themselves for the next threat.

Course Objective(s)

Interpret the legal basis and legislation for the operation of infection prevention and control.

Lecture Style

To introduce domestic and international documents and articles on infectious disease crisis management.

To analyze, discuses, and evaluate these contents.

Course Outline

Data collection, research and validation

1, National and local government guidelines for infectious disease control

2、COVID-19 measures by the government, health centers, medical institutions, etc.

Consider preparedness planning for outbreaks, epidemics, and pandemics of infectious diseases based on lessons learned from recent pandemics.

Grading System

Motivation to study and oral examination.

Prerequisite Reading

Learn about the Infectious Diseases Act, national and local guidelines, etc.

Learn the role of relevant agencies responsible for monitoring infectious diseases regionally, nationally and internationally (e.g., CDC, WHO).

Email

t-yazawa.idep@tmd.ac.jp

Lecture No	415061				
Subject title	Practice of Infectious Disease Emergency Preparedness			Subject ID	
Instructors	矢沢 知子[YAZAWA TOMOKO]				
Semester	YearLong 2023	Level	2nd year	Units	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

remote learning

Course Purpose and Outline

The purpose of this course is to analyze domestic and international infectious disease crisis management responses and to present measures for medical institutions, facilities, and government agencies to prepare themselves for the next threat.

Course Objective(s)

Estimate the impact of infectious disease spread and severity in order to propose strategies to reduce it.

Write a scientific article for publication in a peer-reviewed scientific journal.

Lecture Style

To introduce domestic and international documents and articles on infectious disease crisis management.

To analyze, discuses, and evaluate these contents.

Course Outline

Data collection, research and validation

1, National and local government guidelines for infectious disease control

2、COVID-19 measures by the government, health centers, medical institutions, etc.

Consider preparedness planning for outbreaks, epidemics, and pandemics of infectious diseases based on lessons learned from recent pandemics.

Grading System

Motivation to study, paper content and oral examination

Prerequisite Reading

Learn about the Infectious Disease Control Law, national and local guidelines, etc.

Learn the role of relevant agencies responsible for monitoring infectious diseases regionally, nationally and internationally (e.g. CDC, WHO).

Email

t-yazawa.idep@tmd.ac.jp

Lecture No	415062				
Subject title	Laboratory of Infectious Disease Emergency Preparedness			**Subject ID**	
Instructors	矢沢 知子[YAZAWA TOMOKO]				
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

remote learning

Course Purpose and Outline

The purpose of this course is to analyze domestic and international infectious disease crisis management responses and to present measures for medical institutions, facilities, and government agencies to prepare themselves for the next threat.

Course Objective(s)

Interpret the legal basis and legislation for the operation of infection prevention and control.

Estimate the impact of infectious disease spread and severity in order to propose strategies to reduce it.

Write a scientific article for publication in a peer-reviewed scientific journal.

Lecture Style

To introduce domestic and international documents and articles on infectious disease crisis management.
To analyze, discuses, and evaluate these contents.

Course Outline

Data collection, research and validation
1, National and local government guidelines for infectious disease control
2、COVID-19 measures by the government, health centers, medical institutions, etc.

Consider preparedness planning for outbreaks, epidemics, and pandemics of infectious diseases based on lessons learned from recent pandemics.

To improve leadership and communication skills through periodic progress reports based on each student's research plan, interviews with the field, and discussion of policy models.

Grading System

学習意欲、論文内容及び口頭試問

Prerequisite Reading

Learn the role of relevant agencies responsible for monitoring infectious diseases regionally, nationally and internationally (e.g., CDC, WHO).
Be familiar with the applicable legal and statutory obligations in relation to the monitoring and notification of infectious diseases, including the country-specific notifiable diseases.

Email

t-yazawa.idep@tmd.ac.jp

Lecture No	041207				
Subject title	Lecture of Rehabilitation Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Rehabilitation training room

Course Purpose and Outline

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.

Course Objective(s)

To understand the contents of rehabilitation for disabilities due to cerebrovascular, musculoskeletal, and other diseases, and to find the tasks to be solved.

Lecture Style

Small classes

Course Outline

Analysis of disabilities using International Classification of Functioning, Disability and Health.

Rehabilitation medicine including physical, occupational, and speech therapy.

The method of 3-dimentional motion analysis in activities of daily living.

Grading System

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

Prerequisite Reading

Basis knowledge of physical, occupational, and speeche therapy should be aquired.

Reference Materials

Randall L. Braddom. Physical Medicine & Rehabilitaion. Elsevier, 2011.

Abo M et al. Saishin Rehabilitation Medicine. 3rd ed. Ishiyakushuppan, 2016.

Reviews related to the research subjects.

Important Course Requirements

N/A

Lecture No	041208				
Subject title	Practice of Rehabilitation Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Rehabilitation training room

Course Purpose and Outline

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.

Course Objective(s)

To understand the contents of rehabilitation for disabilities due to cerebrovascular, musculoskeletal, and other diseases, and to find the tasks to be solved.

Lecture Style

Small classes

Course Outline

To understand the evaluation methods of disabilities and activities of daily living, and to use them for the clinical practice.

Grading System

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

Prerequisite Reading

Basis knowledge of physical, occupational, and speeche therapy should be aquired.

Reference Materials

Randall L. Braddom. Physical Medicine & Rehabilitaion. Elsevier, 2011.

Abo M et al. Saishin Rehabilitation Medicine. 3rd ed. Ishiyakushuppan, 2016.

Reviews related to the research subjects.

Important Course Requirements

N/A

Lecture No	041209				
Subject title	Laboratory practice of Rehabilitation Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)

Course Purpose and Outline

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.

Course Objective(s)

To build the ablity to dicover new quetsions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.

Lecture Style

We sentence you to small number of people education of independent participation type of a graduate student.

Course Outline

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.

Grading System

Attendance rate at each program (50%)

Progress of the research, research presentation at research meetings, research publication (50%)

Prerequisite Reading

Students should attend the journal clubs three times a week and review the papers read in the journal clubs.

TextBook

標準整形外科学 第 15 版／井樋 栄二 監修,津村 弘 監修,田中 栄 編集,高木 理彰 編集,松田 秀一 編集,井樋 栄二,津村 弘,田中 栄,高木 理彰,松田 秀一,:医学書院, 2023-02-06

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

Reference Materials

Students should read publications retrieved in accordance with their research themes.

Important Course Requirements

Not applicable

Note(s) to Students

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.

Lecture No	041210				
Subject title	Lecture of Gerodontology and Oral Rehabilitation			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Differs depending on program; check with instructor before attending.

Course Purpose and Outline

Basic targets of study of this field are prevention and recovery of the oral function(mastication and phonetic function) declining with aging.

Course Objective(s)

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.

Lecture Style

Small class size designated.

Course Outline

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.

Grading System

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.

Prerequisite Reading

None

Reference Materials

Boucher's Prosthetic treatment for edentulous patients Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,

Important Course Requirements

None

Note(s) to Students

In principle, class size is not limited.

Lecture No	041211				
Subject title	Practice of Gerodontology and Oral Rehabilitation			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Differs depending on program; check with instructor before attending.

Course Purpose and Outline

Basic targets of study of this field are prevention and recovery of the oral function(mastication, swallowing and phonetic function) declining with aging.

Course Objective(s)

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.

Lecture Style

Small class size designated.

Course Outline

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.

Grading System

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.

Prerequisite Reading

None

Reference Materials

Boucher's Prosthetic treatment for edentulous patients Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,

Important Course Requirements

None

Note(s) to Students

In principle, class size is not limited.

Lecture No	041212				
Subject title	Laboratory practice of Gerodontology and Oral Rehabilitation			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Differs depending on program; check with instructor before attending.

Course Purpose and Outline

Basic targets of study of this field are prevention and recovery of the oral function(mastication, swallowing and phonetic function) declining with aging.

Course Objective(s)

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.

Lecture Style

Small class size designated.

Course Outline

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.

Grading System

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.

Prerequisite Reading

None

Reference Materials

Boucher's Prosthetic treatment for edentulous patients Groher M E Dysphagia Diagnosis and Management Peter E. Dawson :Dawson Functional Occlusion,

Important Course Requirements

None

Note(s) to Students

In principle, class size is not limited.

Lecture No	041213				
Subject title	Lecture of Dysphagia Rehabilitation			**Subject ID**	
Instructors	戸原　玄, 山口　浩平, 中川　量晴[TOHARA HARUKA, YAMAGUCHI Kouhei, NAKAGAWA Kazuharu]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Office of Dysphagia Rehabilitation, 5th floor, 10th building otherwise web (zoom)

Course Purpose and Outline

Learn the basics of dysphagia

Course Objective(s)

Learn the basic terminologies and how to evaluate patient, and think of research ideas

Lecture Style

lecture

Course Outline

Introducing the terminology of dysphagia and how to evaluate patient, and then introducing our recent researches

Conference every Thursday from around 17:30

Grading System

Report

Prerequisite Reading

read textbook about dysphagia rehabilitation prior to lecture.

TextBook

訪問診療での歯科臨床：在宅歯科医療をさらに高める Clinical Questions と Questions & Answers／戸原玄, 中川量晴 編集,日本老年歯科医学会 監修,戸原, 玄,中川, 量晴,日本老年歯科医学会,:医歯薬出版, 2020

Reference Materials

摂食・嚥下障害検査のための内視鏡の使い方 DVD &ブックレット／戸原玄, 武原格, 野原幹司 編,:医歯薬出版, 2010

摂食・嚥下と誤嚥のメカニズム／里田隆博, 戸原玄監修,里田, 隆博,戸原, 玄,:医歯薬出版, 2013

摂食・嚥下と誤嚥のメカニズム／里田隆博, 戸原玄監修,里田, 隆博,戸原, 玄,:医歯薬出版, 2013

器官の異常と誤嚥・摂食嚥下のメカニズム／里田隆博, 戸原玄監修,里田, 隆博,戸原, 玄,:医歯薬出版, 2014

摂食・嚥下障害の VF 実践ガイド：一歩進んだ診断・評価のポイント／千葉由美, 山脇正永, 戸原玄編集,植松, 宏,千葉, 由美,山脇, 正永,戸原, 玄,:南江堂, 2006

Relationship With Other Subjects

Requires knowledge of other related departments such as neurosurgery, neurology, rehabilitation, otolaryngology, and oral surgery

Reference URL

https://www.swallowing.link/

Email

TOHARA HARUKA:h.tohara.swal@tmd.ac.jp

Instructor's Contact Information

TOHARA HARUKA:At any time (but be sure to contact me in advance) Professor Tobara's room on the 5th floor of Building 10

Lecture No	041214				
Subject title	Practice of Dysphagia Rehabilitation			**Subject ID**	
Instructors	戸原　玄, 山口　浩平, 中川　量晴[TOHARA HARUKA, YAMAGUCHI Kouhei, NAKAGAWA Kazuharu]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Office of Dysphagia Rehabilitation, 5th floor, 10th building otherwise web (zoom)

Course Purpose and Outline

Learn the basic evaluation for dysphagia

Course Objective(s)

learning screening test and diagnostic evaluations

Lecture Style

lecture

Course Outline

Showing the evaluation of dysphagia

Conference every Thursday from around 17:30

Grading System

report

Prerequisite Reading

Instruction is given if nesessary

TextBook

訪問診療での歯科臨床 : 在宅歯科医療をさらに高める Clinical Questions と Questions & Answers／戸原玄, 中川量晴 編集,日本老年歯科医学会 監修,戸原, 玄,中川, 量晴,日本老年歯科医学会,:医歯薬出版, 2020

Reference Materials

摂食・嚥下障害検査のための内視鏡の使い方 DVD &ブックレット／戸原玄, 武原格, 野原幹司 編,:医歯薬出版, 2010

摂食・嚥下と誤嚥のメカニズム／里田隆博, 戸原玄監修,里田, 隆博,戸原, 玄,:医歯薬出版, 2013

器官の異常と誤嚥・摂食嚥下のメカニズム／里田隆博, 戸原玄監修,里田, 隆博,戸原, 玄,:医歯薬出版, 2014

摂食・嚥下障害の VF 実践ガイド : 一歩進んだ診断・評価のポイント／千葉由美, 山脇正永, 戸原玄編集,植松, 宏,千葉, 由美,山脇, 正永,戸原, 玄,:南江堂, 2006

Relationship With Other Subjects

equires knowledge of other related departments such as neurosurgery, neurology, rehabilitation, otolaryngology, and oral surgery

Reference URL

https://www.swallowing.link/

Email

TOHARA HARUKA:h.tohara.swal@tmd.ac.jp

Instructor's Contact Information

TOHARA HARUKA:At any time (but be sure to contact me in advance) Professor Tobara's room on the 5th floor of Building 10

Lecture No	041215				
Subject title	Laboratory practice of Dysphagia Rehabilitation			**Subject ID**	
Instructors	戸原　玄, 山口　浩平, 中川　量晴, 吉見　佳那子[TOHARA HARUKA, YAMAGUCHI Kouhei, NAKAGAWA Kazuharu, YOSHIMI KANAKO]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Introducing our researches about dysphaiga

Lecture place

Office of Dysphagia Rehabilitation, 5th floor, 10th building otherwise web (zoom)

Course Purpose and Outline

Introducing the details of our researches

Course Objective(s)

Learning how to design research

Lecture Style

Lecture and practice

Course Outline

Introducing the details of our researches

Conference every Thursday from around 17:30

Grading System

report

Prerequisite Reading

Instruction is given if nesessarry

TextBook

訪問診療での歯科臨床 : 在宅歯科医療をさらに高める Clinical Questions と Questions & Answers／戸原玄, 中川量晴 編集,日本老年歯科医学会 監修,戸原, 玄,中川, 量晴,日本老年歯科医学会,:医歯薬出版, 2020

Reference Materials

摂食・嚥下障害検査のための内視鏡の使い方 DVD &ブックレット／戸原玄, 武原格, 野原幹司 編,:医歯薬出版, 2010

Relationship With Other Subjects

Requires knowledge of other related departments such as neurosurgery, neurology, rehabilitation, otolaryngology, and oral surgery

Reference URL

https://www.swallowing.link/

Email

TOHARA HARUKA:h.tohara.swal@tmd.ac.jp

Instructor's Contact Information

TOHARA HARUKA:At any time (but be sure to contact me in advance) Professor Tobara's room on the 5th floor of Building 10

Lecture No	041216				
Subject title	Lecture of Laboratory Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Lecture and practice: Laboratory (M&D tower, 10th floor, south)

Tuesday 10:00–11:00

Course Purpose and Outline

To develop the ability of clinical reasoning based on laboratory data.

To understand the development of novel laboratory tests.

Course Objective(s)

To understand the significance of laboratory tests in medicine.

Lecture Style

A small group tutorial

Course Outline

Application of laboratory medicine for clinical medicine will be lectured.

Grading System

Participation and performance are evaluated. Interview or reports will be also used for grading.

Prerequisite Reading

Read the textbooks in advance.

Reference Materials

1) Williams Hematology, 10th edition, 2021

2) Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.

Important Course Requirements

None

Note(s) to Students

Ask the contact person if you have questions.

Lecture No	041217				
Subject title	Practice of Laboratory Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Lecture and practice: Laboratory (M&D tower, 10th floor, south)

Tuesday 11:00–12:00

Course Purpose and Outline

To develop the ability of clinical reasoning based on laboratory data.

To understand the development of novel laboratory tests.

Course Objective(s)

To understand the significance of laboratory tests in medicine.

Lecture Style

A small group tutorial

Course Outline

Significance of novel cellular and molecular laboratory tests will be discussed.

Grading System

Participation and performance are evaluated. Interview or reports will be also used for grading.

Prerequisite Reading

Read the textbook and/or paper designated.

Reference Materials

1) Williams Hematology, 10th edition, 2021

2) Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.

3) Molecular cloning. A laboratory manual

Important Course Requirements

None

Note(s) to Students

Ask the contact person if you have questions.

Lecture No	041218				
Subject title	Laboratory practice of Laboratory Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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 (Dec. – Feb.)

Course Purpose and Outline

To observe blood and bone marrow smears from patients with hematological diseases.

Course Objective(s)

To interpret the morphological findings of cells on blood and bone marrow smears.

Lecture Style

A small group practice

Course Outline

Practice of hematological analysis based on morphological findings of blood smears and bone marrow smears will be held.

Grading System

Participation and performance are evaluated. Interview or reports will be also used for grading.

Prerequisite Reading

Read the textbook below.

Reference Materials

Williams Hematology, 10th edition, 2021

Wintrobe's Atlas of Clinical Hematology, Lippincott Williams & Wilkins Inc.

Important Course Requirements

None

Note(s) to Students

Ask the contact person if you have questions.

Lecture No	041901				
Subject title	Lecture of Intensive Care Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please ask Prof. Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.

Course Purpose and Outline

Supporting therapy has been progressed in the intensive care unit (ICU) and improved the mortality rate of critically ill patients. However, any specific treatments for "common ICU diseases" such as sepsis and acute respiratory distress syndrome have not yet been established for the last 50 years since the disease concepts were first proposed, and the mortality rate remains high at around 30% in all these cases. In recent years, the secondary use of medical data obtained in the ICU has attracted much attention, and a variety of methods have been tried to analyse the comprehensive and abundant big data and apply them not only to diagnosis and treatment but also to the development of services and products.

The aim of this course is to elucidate the pathogenesis of diseases in the ICU area using retrospective big data analysis and prospective translational research methods. In the first half of the course, students will learn about the history and future potential of big data in intensive care, which will help to develop data scientists in the ICU.

The role of cytokines, as well as nanometer-sized extracellular vesicles in the pathogenesis of multiple organ failure, has been increasingly understood in recent years. The latter half of the course will focus on the pathogenesis of multi-organ failure in intensive care and the recent advances in the study of injurious mediators.

Course Objective(s)

1) To learn the basic and clinical practice regarding the stress response in critically ill patients.

2) To understand the role of injurious mediators in the development of multiple organ failure.

(3) To understand the role of extracellular vesicles in organ injury.

(4) To understand the concept of precision medicine.

(5) To understand the types of Big Data and the specific databases that can be used.

(6) To understand the steps required to become a data scientist.

(7) Learn about the efforts needed to promote research internationally.

Lecture Style

Small groups. Discussions will be encouraged as much as possible to enhance interaction.

Course Outline

To achieve the above objectives, lectures will be given in a seminar format.

Grading System

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%

Prerequisite Reading

Please read the below articles before the course starts.

1. Prescott HC, Calfee CS, Thompson BT, Angus DC, Liu VX: Toward Smarter Lumping and Smarter Splitting: Rethinking Strategies for Sepsis and Acute Respiratory Distress Syndrome Clinical Trial Design. Am J Respir Crit Care Med 2016, 194(2):147-155.

2. Seymour CW, Gomez H, Chang CH, Clermont G, Kellum JA, Kennedy J, Yende S, Angus DC: Precision medicine for all? Challenges and opportunities for a precision medicine approach to critical illness. Crit Care 2017, 21(1):257.

3. Sanchez-Pinto LN, Luo Y, Churpek MM: Big Data and Data Science in Critical Care. Chest 2018, 154(5):1239-1248.

4. John CM: Inflammation, coagulopathy, and the pathogenesis of multiple organ dysfunction syndrome. Crit Care Med 2001, 29 (7): S99-S106

5. Matthay MA, Zemans RL, Zimmerman GA, Arabi YM, Beitler JR, Mercat A, Herridge M, Randolph AG, Calfee CS: Acute respiratory distress syndrome. Nat Rev Dis Primers 2019, 5: 18

6. Shar R, Patel T, Freedman JE: Circulating extracellular vesicles in human disease: N Engl J Med 2018, 379 (10): 958–966

TextBook

ビッグデータとICU におけるプレシジョン・メディシン：医学図書出版, 2019

INTENSIVIST：メディカルサイエンスインターナショナル, 2020

Important Course Requirements

N/A

Note(s) to Students

We accept up to 10 students for JC and research seminar, because of limited space and capacity.

Lecture No	041902				
Subject title	Practice of Intensive Care Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please ask Prof. Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.

Course Purpose and Outline

At the beginning of this course, we will read several landmark clinical research papers in the ICU field, and learn the basic theories and tips necessary as a data scientist. In addition, students will learn how to use analysis software, how to access data, and research ethics, which are necessary to become data scientists in the ICU.

The latter half of the course will focus on the study of extracellular vesicles (EVs), which have attracted much attention in recent years. Although soluble cytokines were classically thought to be the main means of intercellular communication, it has recently been reported that EVs, traditionally thought of as "cellular debris", play an important role. The significance of endogenous EVs as biomarkers in lung diseases and systemic inflammatory diseases is rapidly gaining attention in intensive care. In addition, there have been many attempts to infuse exogenous EVs, such as mesenchymal stem cell-derived EVs, as therapeutic tools, and EV research is expanding in many directions. The literature on EV research has been growing over the past few years alone, and it is likely to flourish further in the future, becoming a knowledge that intensivists should be aware of.

Course Objective(s)

1) To be able to read and critically review several landmark RCT papers.
2) To be able to critically review the latest observational papers in critical care.
3) To be able to read and critically review the most recent papers on predictive models
4) To be able to read and critically review the most recent articles on diagnostic methods
5) To be able to read leading meta-analysis papers and critically review the latest diagnostic papers
6) To be able to read and critically appraise the latest descriptive research papers
7) To be able to critically review research articles and write a letter to the journal.
8) To learn about injurious mediators and types of EVs.
9) To learn about the basic methods of EV research: purification, extraction and detection.
10) To learn about the significance and pitfalls of measuring clinical samples in EV.
11) To discuss and understand future directions in the use of EVs in clinical practice.

Lecture Style

Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.

Course Outline

In order to achieve the above objectives, the seminar-based lecture format is supplemented by an opportunity to observe the actual measurement process.

Grading System

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%

Prerequisite Reading

The following materials are available;

1. Survival Analysis https://www.youtube.com/watch?v=tiCyQp29nwA
2. Thery C, Witwer KW et al: Minimal information for studies of extracellular vesicles 2018 MISEV2018. J Extracell Vesicles 2018; 7(1):1535750
3. McVey MJ, Maishan M, Blokland KEC, Bartlett N, Kuebler WM: Extracellular vesicles in lung health, disease, and therapy. Am J Physiol Lung Cell Mol Physiol 2019; 316(6):L977-L989

TextBook

僕らはまだ、臨床研究論文の本当の読み方を知らない。 : 論文をどう読んでどう考えるか／後藤匡啓著,後藤, 匡啓,長谷川, 耕平,:羊土社, 2021

臨床研究の道標 : 7 つのステップで学ぶ研究デザイン／福原俊一 著,福原, 俊一,:健康医療評価研究機構, 2017

臨床研究の道標 : 7 つのステップで学ぶ研究デザイン／福原俊一 著,福原, 俊一,:健康医療評価研究機構, 2017

Important Course Requirements

N/A

Note(s) to Students

We accept up to 10 students for JC and research seminar, because of limited space and capacity.

Lecture No	041903				
Subject title	Laboratory practice of Intensive Care Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please ask Prof. Wakabayashi for classes: most lectures/experiments shall be done at the 15th floor, MD tower.

Course Purpose and Outline

At the beginning of the course, you will participate in a research project that you have designed or that is currently being conducted in your laboratory using big data related to intensive care, and you will learn the methods necessary for data collection and analysis.

In the latter half of the course, we will recap the basic background knowledge related to EVs, introduce the recent literature on EVs in the field of intensive care and the research results related to EVs in our laboratory, and aim to have the students learn how to conduct translational research in the field of intensive care through the acquisition of techniques for EV measurement, mainly FACS, in addition to the creation of some disease models in critical care.

Course Objective(s)

1) To become familiar with the use of various analysis software and to learn the strengths and weaknesses of each software.

2) Plan and carry out a research project based on your own theme.

3) To complete and report the results of your research as a paper.

4) Learn approaches of EV research such as detection and bioactivity measurement.

5) Learn about the types and characteristics of disease models for lung disease and sepsis.

6) Learn research techniques for the detection and bioactivity measurement of EV in experimental models.

Lecture Style

Small group discussion. Using our recent results, we aim to interact with students to deepen scientific understandings.

Course Outline

At the beginning of this course, you will be accessing, cleaning and analysing data based on your research plan. If possible, the results will be used to develop new diagnostics, treatments and products in the real world.

In the latter half of the course, we aim to extract EVs from disease models, and students will learn about the characteristics of disease models as well as the techniques used to extract EVs, and then design their own experiments. Based on this plan, students will be able to perform quantitative and qualitative measurements of EVs.

Grading System

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%

Prerequisite Reading

In this course, we will use R and Python for statistical analysis and implementation of machine learning algorithms. Therefore, students are required to establish a working environment for R or Python on their own PC, using the following reference books. If you cannot do this by yourself, please contact the secretary of the Department of Intensive Care Medicine (icusec.icu@tmd.ac.jp).

In addition, the following references should be read;

1. O'Dea KP, Tan YY, Sha S, Patel BV, Tatham KC, Wilson MR, Soni S, M Takata: Monocytes mediate homing of circulating microvesicles to the pulmonary vasculature during low-grade systemic inflammation; J Extracell Vesicles 2020; 9(1) 1706708

2. Soni S, Wilson MR, O'Dea KP, Yoshida M, Katbeh U, Woods SJ, Takata M: Alveolar macrophage-derived microvesicles mediate acute lung injury; Thorax 2016; 71(11);1020-1029

TextBook

Python で学ぶあたらしい統計学の教科書／馬場真哉 著,馬場, 真哉, 1990-,:翔泳社, 2018

R をはじめよう生命科学のための RStudio 入門／Andrew P.Beckerman, Dylan Z.Childs, Owen L.Petchey 著,富永大介 訳,Beckerman,

Andrew P,Childs, Dylan Z,Petchey, Owen L,富永, 大介, 1970-, : 羊土社, 2019
Important Course Requirements N/A
Note(s) to Students We accept up to 10 students for JC and research seminar, because of limited space and capacity.

Lecture No	041228				
Subject title	Lecture of Pharmacokinetics and Pharmacodynamics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

To be asked to the instructor before registration.

Course Purpose and Outline

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.

Course Objective(s)

To predict the kinetics of drug action and to evaluate the drug–drug interactions, based on the mechanisms of drug abosorption, distribution, metabolism and excretion

Lecture Style

The course is a small class and will have a discussion chance with registrants.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041229				
Subject title	Practice of Pharmacokinetics and Pharmacodynamics			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

To be asked to the instructor before registration.

Course Purpose and Outline

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.

Course Objective(s)

To predict the kinetics of drug action and to evaluate the drug–drug interactions, based on the mechanisms of drug abosorption, distribution, metabolism and excretion

Lecture Style

The course is a small class and will have a discussion chance with registrants.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041230				
Subject title	Laboratory practice of Pharmacokinetics and Pharmacodynamics			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

To be asked to the instructor before registration.

Course Purpose and Outline

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.

Course Objective(s)

To predict the kinetics of drug action and to evaluate the drug–drug interactions, based on the mechanisms of drug abosorption, distribution, metabolism and excretion

Lecture Style

The course is a small class and will have a discussion chance with registrants.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Proficiency in basic pharmacokinetics, such as moment analysis and compartment model.

Reference Materials

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

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041231				
Subject title	Lecture of Medical Education Research and Development			**Subject ID**	
Instructors	山脇　正永[YAMAWAKI Masanaga]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Prerequisite Reading					
Email YAMAWAKI Masanaga:myamawaki.merd@tmd.ac.jp					

Lecture No	041232				
Subject title	Practice of Medical Education Research and Development			**Subject ID**	
Instructors	山脇　正永[YAMAWAKI Masanaga]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Prerequisite Reading					
Email YAMAWAKI Masanaga:myamawaki.merd@tmd.ac.jp					

Lecture No	041233				
Subject title	Laboratory practice of Medical Education Research and Development			**Subject ID**	
Instructors	山脇　正永[YAMAWAKI Masanaga]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Prerequisite Reading					
Email YAMAWAKI Masanaga:myamawaki.merd@tmd.ac.jp					

Lecture No	041234				
Subject title	Lecture of Acute Critical Care and Disaster Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Lectures are performed at hospital word on the first basement.

Animal testing is held at 11th floor on the M&D tower.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures are performed individually.

Course Outline

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.

Grading System

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%

Prerequisite Reading

no need for it

Reference Materials

Texts are prepared individually.

Important Course Requirements

Not especially

Lecture No	041235				
Subject title	Practice of Acute Critical Care and Disaster Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Lectures are performed at hospital word on the first basement.

Animal testing is held at 11th floor on the M&D tower.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures are performed individually.

Course Outline

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.

Grading System

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%

Prerequisite Reading

no need for it

Reference Materials

Texts are prepared individually.

Important Course Requirements

Not especially

Lecture No	041236				
Subject title	Laboratory practice of Acute Critical Care and Disaster Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Lectures are performed at hospital word on the first basement.

Animal testing is held at 11th floor on the M&D tower.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lectures are performed individually.

Course Outline

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.

Grading System

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%

Prerequisite Reading

no need for it

Reference Materials

Texts are prepared individually.

Important Course Requirements

Not especially

Lecture No	041237				
Subject title	Lecture of Clinical Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

To be announced.

Course Purpose and Outline

To overview the field of clinical oncology and aquire the systematic knowledge for palliative medicine and medical oncolgy.

Course Objective(s)

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.

Lecture Style

Class sizes are kept small to facilitate discussion and communication.

Course Outline

Goals/outline:

① To understand comprehensive oncology.

② To have an up-to-date knowledge of palliative medicine and cancer chemotherapy.

Grading System

Grades are dependent on attendance, research work, presentation at academic meeting and publications.

Prerequisite Reading

To be announced.

Reference Materials

Oxford Textbook of Palliative Medicine

Important Course Requirements

To be announced.

Note(s) to Students

Not in particular.

Lecture No	041238				
Subject title	Practice of Clinical Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

To be announced.

Course Purpose and Outline

To overview the field of clinical oncology and aquire the systematic knowledge for palliative medicine and medical oncolgy.

Course Objective(s)

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.

Lecture Style

Class sizes are kept small to facilitate discussion and communication.

Course Outline

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.

Grading System

Grades are dependent on attendance, research work, presentation at academic meeting and publications.

Prerequisite Reading

To be announced.

Reference Materials

Oxford Textbook of Palliative Medicine

Important Course Requirements

To be announced.

Note(s) to Students

Not in particular.

Lecture No	041239				
Subject title	Laboratory practice of Clinical Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced.

Course Purpose and Outline

To overview the field of clinical oncology and aquire the systematic knowledge for palliative medicine and medical oncolgy.

Course Objective(s)

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.

Lecture Style

Class sizes are kept small to facilitate discussion and communication.

Course Outline

Goals/outline:

To have an knowledge of scientific findings and practice specialized research techniques for this area.

Grading System

Grades are dependent on attendance, research work, presentation at academic meeting and publications.

Prerequisite Reading

To be announced.

Reference Materials

Oxford Textbook of Palliative Medicine

Important Course Requirements

To be announced.

Note(s) to Students

Not in particular.

Lecture No	041243				
Subject title	Lecture of General Dentistry			Subject ID	
Instructors	新田 浩, 礪波 健一, 梅森 幸, 則武 加奈子, 西山 暁[NITTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO, NISHIYAMA AKIRA]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Seminar room of Dept. Oral Diagnosis and General Dentistry (3rd floor, Building 10)

Depending on the content and situation, it may be done remotely or elsewhere.

Course Purpose and Outline

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.

Course Objective(s)

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.

Explain the main points of differential diagnosis at the first visit

Explain clinical reasoning.

Explain effective medical interview methodologies.

Explain the main behavioral science theories (motivational interviewing, bias, frame effect, nudge, etc.).

Explain the dental education system in Japan.

Explain the basic knowledge necessary for curriculum development and evaluation of dental education.

Lecture plan

No	Date	Time	Room	Lecture theme	Lecture content	Staff	Learning objectives・Learning methods・Instructions
1	5/29	17:30-19:00	各研究室	Behavioral Science Theory (Medical Communication)	Behavioral Science Theory (Medical Communication)	TONAMI KENICHI	Lectures
2	6/5	17:30-19:00	各研究室	Behavioral Science Theory (Motivational Interviewing)	Behavioral Science Theory (Motivational Interviewing)	NITTA HIROSHI	Lecture
3	6/12	17:30-19:00	各研究室	Behavioral science theory (cognitive traits)	Behavioral science theory (cognitive traits)	TONAMI KENICHI	Lecture/Presentation
4	6/19	17:30-19:00	各研究室	Behavioral science theory (nudge, etc.)	Behavioral science theory (nudge, etc.)	UMEMORI SACHI	Lecture
5	6/26	17:30-19:00	各研究室	Behavioral science theory (nudge, etc.)	Behavioral science theory (nudge, etc.)	UMEMORI SACHI	Lecture/Presentation
6	7/3	17:30-19:00	各研究室	Curriculum development and evaluation of dental education	Curriculum development and evaluation of dental education	NORITAKE KANAKO	Lecture
7	7/10	17:30-19:00	各研究室	Curriculum development	Curriculum development and	NORITAKE	Lecture/Presenta

				and evaluation of dental education	evaluation of dental education	KANAKO	tion
8	7/18	17:30-19:00	各研究室	Clinical reasoning	Clinical reasoning	NISHIYAMA AKIRA	Lecture

Lecture Style

In principle, the number of participants will be small.

Course Outline

Students will learn the knowledge and skills necessary to practice desirable holistic medicine, as well as knowledge about the application of behavioral science in medicine, the Japanese dental education system and curriculum development.

Graduate Lecture: May 31st-July 19th (every Monday 17:00-19: 00). We will contact you if there are any changes.
Graduate School Special Lecture (Planned or recommended by this field)

Grading System

Comprehensive evaluation based on lectures, exercises, participation in research training, and research content.
Evaluate based on research reports or conference presentations.

Prerequisite Reading

Instruct at the first lecture if nesessary.
Prepare for the specified chapters and items in the following reference books.

Reference Materials

PMI ペリオドンタルモチベーショナルインタビューイング : 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,斎田寛之 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,斎田寛之,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
見逃しケースのなぜを解く！ 歯科診断スキルアップ実践ガイド : 落とし穴を回避して主訴の解決に導く手順とポイント／礪波健一 著・文・その他,礪波健一 編集,則武加奈子 著・文・その他,則武加奈子 編集,梅森 幸 著・文・その他,梅森 幸 編集,新田 浩 著・文・その他,新田 浩 編集,小田 茂 著・文・その他,小田 茂 編集,荒木孝二 著・文・その他,荒木孝二 編集,礪波健一,則武加奈子,梅森 幸,新田 浩,小田 茂,荒木孝二,:クインテッセンス出版, 2021-02-10
医療現場の行動経済学 : すれ違う医者と患者／大竹文雄, 平井啓編著,大竹, 文雄,平井, 啓,:東洋経済新報社, 2018
臨床倫理学 : 臨床医学における倫理的決定のための実践的なアプローチ／Albert R. Jonsen, Mark Siegler, William J. Winslade 著 ;[白浜雅司ほか訳],Jonsen, Albert R.,Siegler, Mark,Winslade, William J.,白浜, 雅司,赤林, 朗,蔵田, 伸雄,児玉, 聡,:新興医学出版社, 2006
ファスト&スロー : あなたの意思はどのように決まるか?／ダニエル・カーネマン 著,村井章子 訳,Kahneman, Daniel, 1934-,村井, 章子,:早川書房, 2014
医学教育を学び始める人のために／Ronald M. Harden, Jennifer M. Laidlaw 著 ; 大西弘高監訳,Harden, Ronald M,Laidlaw, Jennifer M,大西, 弘高,:篠原出版新社, 2013
やさしい診査・診断学 : 痛みの特徴から主訴を解決する／宮下裕志著,宮下, 裕志,:クインテッセンス出版, 2014
Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell

Important Course Requirements

The date and time of each program may change, so be sure to check before attending.

Note(s) to Students

Contact information: Oral Daignosis and General Dentistry Hiroshi Nitta
E-mail: nitta.behd@tmd.ac.jp

Lecture No	041244				
Subject title	Practice of General Dentistry			Subject ID	
Instructors	新田 浩, 礪波 健一, 梅森 幸, 則武 加奈子, 西山 暁[NITTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO, NISHIYAMA AKIRA]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Seminar room of Dept. Oral Diagnosis and General Dentistry (3rd floor, Building 10)

Depending on the content and situation, it may be done remotely or elsewhere.

Course Purpose and Outline

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.

Course Objective(s)

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.

Explain the main points of differential diagnosis at the first visit

Explain clinical reasoning.

Explain effective medical interview methodologies.

Explain the main behavioral science theories (motivational interviewing, bias, frame effect, nudge, etc.).

Explain the dental education system in Japan.

Explain the basic knowledge necessary for curriculum development and evaluation of dental education.

Lecture Style

In principle, the number of participants will be small.

Course Outline

Students will learn the knowledge and skills necessary to practice desirable holistic medicine, as well as knowledge about the application of behavioral science in medicine, the Japanese dental education system and curriculum development.

Graduate Lecture

Graduate School Special Lecture (Planned or recommended by this field)

Grading System

Comprehensive evaluation based on lectures, exercises, participation in research training, and research content.

Evaluate based on research reports or conference presentations.

Prerequisite Reading

Instruct at the first lecturte if nesessary.

Prepare for the specified chapters and items in the following reference books.

Reference Materials

PMI ペリオドンタルモチベーショナルインタビューイング : 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,斎田寛之 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,斎田寛之,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

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文・その他,礪波健一 編集,則武加奈子 著・文・その他,則武加奈子 編集,梅森 幸 著・文・その他,梅森 幸 編集,新田 浩 著・文・その他,新田 浩 編集,小田 茂 著・文・その他,小田 茂 編集,荒木孝二 著・文・その他,荒木孝二 編集,礪波健一,則武加奈子,梅森 幸,新田 浩,小田 茂,荒木孝二,:クインテッセンス出版, 2021-02-10

医療現場の行動経済学 : すれ違う医者と患者／大竹文雄, 平井啓編著,大竹, 文雄,平井, 啓,:東洋経済新報社, 2018

臨床倫理学 : 臨床医学における倫理的決定のための実践的なアプローチ／Albert R. Jonsen, Mark Siegler, William J. Winslade 著 ; [白浜雅司ほか訳],Jonsen, Albert R.,Siegler, Mark,Winslade, William J.,白浜, 雅司,赤林, 朗,蔵田, 伸雄,児玉, 聡,:新興医学出版社, 2006

ファスト&スロー : あなたの意思はどのように決まるか?／ダニエル・カーネマン 著,村井章子 訳,Kahneman, Daniel, 1934-,村井, 章子,:早川書房, 2014

医学教育を学び始める人のために／Ronald M. Harden, Jennifer M. Laidlaw 著 ; 大西弘高監訳,Harden, Ronald M,Laidlaw, Jennifer M,大西, 弘高,:篠原出版新社, 2013

やさしい診査・診断学 : 痛みの特徴から主訴を解決する／宮下裕志著,宮下, 裕志,:クインテッセンス出版, 2014

Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell

Important Course Requirements

The date and time of each program may change, so be sure to check before attending.

Note(s) to Students

Contact information: Oral Daignosis and General Dentistry Hiroshi Nitta

E-mail: nitta.behd@tmd.ac.jp

Lecture No	041245				
Subject title	Laboratory practice of General Dentistry			Subject ID	
Instructors	新田 浩, 礪波 健一, 梅森 幸, 則武 加奈子, 西山 暁[NITTA HIROSHI, TONAMI KENICHI, UMEMORI SACHI, NORITAKE KANAKO, NISHIYAMA AKIRA]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Seminar room of Dept. Oral Diagnosis and General Dentistry (3rd floor, Building 10)

Depending on the content and situation, it may be done remotely or elsewhere.

Course Purpose and Outline

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.

Course Objective(s)

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.

Explain the main points of differential diagnosis at the first visit

Explain clinical reasoning.

Explain effective medical interview methodologies.

Explain the main behavioral science theories (motivational interviewing, bias, frame effect, nudge, etc.).

Explain the dental education system in Japan.

Explain the basic knowledge necessary for curriculum development and evaluation of dental education.

Lecture Style

In principle, the number of participants will be small.

Course Outline

Students will learn the knowledge and skills necessary to practice desirable holistic medicine, as well as knowledge about the application of behavioral science in medicine, the Japanese dental education system and curriculum development.

Graduate Lecture:

Graduate School Special Lecture (Planned or recommended by this field)

Grading System

Comprehensive evaluation based on lectures, exercises, participation in research training, and research content.

Evaluate based on research reports or conference presentations.

Prerequisite Reading

Instruct at the first lecture if nesessary.

Prepare for the specified chapters and items in the following reference books.

Reference Materials

PMI ペリオドンタルモチベーショナルインタビューイング : 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,斎田寛之 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,斎田寛之,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

見逃しケースのなぜを解く！ 歯科診断スキルアップ実践ガイド : 落とし穴を回避して主訴の解決に導く手順とポイント／礪波健一 著・

文・その他,礪波健一 編集,則武加奈子 著・文・その他,則武加奈子 編集,梅森 幸 著・文・その他,梅森 幸 編集,新田 浩 著・文・その他,新田 浩 編集,小田 茂 著・文・その他,小田 茂 編集,荒木孝二 著・文・その他,荒木孝二 編集,礪波健一,則武加奈子,梅森 幸,新田 浩,小田 茂,荒木孝二,:クインテッセンス出版, 2021-02-10

医療現場の行動経済学 : すれ違う医者と患者／大竹文雄, 平井啓編著,大竹, 文雄,平井, 啓,:東洋経済新報社, 2018

臨床倫理学 : 臨床医学における倫理的決定のための実践的なアプローチ／Albert R. Jonsen, Mark Siegler, William J. Winslade 著 ; [白浜雅司ほか訳],Jonsen, Albert R.,Siegler, Mark,Winslade, William J.,白浜, 雅司,赤林, 朗,蔵田, 伸雄,児玉, 聡,:新興医学出版社, 2006

ファスト&スロー : あなたの意思はどのように決まるか?／ダニエル・カーネマン 著,村井章子 訳,Kahneman, Daniel, 1934-,村井, 章子,:早川書房, 2014

医学教育を学び始める人のために／Ronald M. Harden, Jennifer M. Laidlaw 著 ; 大西弘高監訳,Harden, Ronald M,Laidlaw, Jennifer M,大西, 弘高,:篠原出版新社, 2013

やさしい診査・診断学 : 痛みの特徴から主訴を解決する／宮下裕志著,宮下, 裕志,:クインテッセンス出版, 2014

Behavioral Dentistry(2nd Edition) David I. Mostofsky, Farida Fortune November 2013, ©2014, Wiley-blackwell

Important Course Requirements

The date and time of each program may change, so be sure to check before attending.

Note(s) to Students

Contact information: Oral Daignosis and General Dentistry Hiroshi Nitta

E-mail: nitta.behd@tmd.ac.jp

Lecture No	041246				
Subject title	Lecture of Psychosomatic Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact to the teachers before lecture

Course Purpose and Outline

This course introduces "from brain to dentistry" based on clinical researches and brain science researches to deepen understanding of the pathophysiology of Medically Unexplained Oral Symptoms (MUOS). It also enhances psychosomatic skills which really useful in real clinical situations.

Course Objective(s)

The goals of this course are to

A: Understand Medically Unexplained Oral Symptoms

B: Identify differential diagnosis (eg. psychiatric disorders, some neurological diseases.)

C: Develop skills to deal with the patients with MUOS

Lecture Style

Lectures including small group discussions

Course Outline

1.Clinical characteristics and pathophysiolosy of the patients with MUOS

(based on psychopharmacology, brain imaging,etc.)

2.Compounded process in dentist-patient relationship

3.How to manage "difficult patients"

4.Developing new therapeutic strategies for MUOS

Grading System

Assessment based on participation in lectures, learning levels of clinical skills

Prerequisite Reading

Make good preparations before lectures to confirm the baseline knowledge (We will show some literatures as homework)

Reference Materials

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

歯科心身医学／日本歯科心身医学会編,日本歯科心身医学会,:日本歯科心身医学会, 2003

Note(s) to Students

Akira Toyofuku toyoompm(@)tmd.ac.jp

Motoko Watanabe totoompm(@)tmd.ac.jp

*Please replace the part (@) with @.

Reference URL

https://atoyofpsd2.wixsite.com/home

http://www.tmd.ac.jp/grad/ompm/ompm-J.htm

Lecture No	041247				
Subject title	Practice of Psychosomatic Dentistry			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact the teachers before lectures

Course Purpose and Outline

This course introduces "from brain to dentistry" based on clinical researches and brain science researches to deepen understanding of the pathophysiology of Medically Unexplained Oral Symptoms (MUOS). It also enhances psychosomatic skills which really useful in real clinical situations.

Course Objective(s)

The goals of this course are to

A: Understand Medically Unexplained Oral Symptoms

B: Identify differential diagnosis (eg. psychiatric disorders, some neurological diseases.)

C: Develop skills to deal with the patients with MUOS

Lecture Style

Lectures including small group discussions

Course Outline

1.Clinical characteristics and pathophysiolosy of the patients with MUOS

(based on psychopharmacology, brain imaging, etc.)

2.Compounded process in dentist-patient relationship

3.How to manage "difficult patients"

4.Developing new therapeutic strategies for MUOS

Grading System

Assessment based on participation in lectures, learning levels of clinical skills

Prerequisite Reading

Make good preparations before lectures to confirm the baseline knowledge(We will show some literature as homework)

TextBook

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

歯科心身医学／日本歯科心身医学会編,日本歯科心身医学会,:日本歯科心身医学会, 2003

Note(s) to Students

Akira Toyofuku toyoompm(@)tmd.ac.jp

Motoko Watanabe totoompm(@)tmd.ac.jp

*Please replace the part (@) with @.

Reference URL

https://atoyofpsd2.wixsite.com/home

http://www.tmd.ac.jp/grad/ompm/ompm-J.htm

Lecture No	041248				
Subject title	Laboratory practice of Psychosomatic Dentistry			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English

Lecture place

Contact the teachers before lectures

Course Purpose and Outline

This course introduces "from brain to dentistry" based on clinical researches and brain science researches to deepen understanding of the pathophysiology of Medically Unexplained Oral Symptoms (MUOS). It also enhances psychosomatic skills which really useful in real clinical situations.

Course Objective(s)

The goals of this course are to

A: Explain Medically Unexplained Oral Symptoms

B: Explain differential diagnosis (eg. psychiatric disorders, some neurological diseases.)

C: Develop skills to manage the treatment for the patients with MUOS

Lecture Style

Lectures including small group discussions

Course Outline

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 pathophysiolosy of MUOS(based on psychopharmacology, brain imaging,etc.)

5.Developing new therapeutic strategies for MUOS

Grading System

Assessment based on participation in lectures, learning levels of clinical skills(total 30%), conference presentation, publication of research papers etc.(total70%)

Prerequisite Reading

Make good preparations before lectures to confirm the baseline knowledge(We will show some literature as homework)

Reference Materials

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

歯科心身医学／日本歯科心身医学会編,日本歯科心身医学会,:日本歯科心身医学会, 2003

Note(s) to Students

Akira Toyofuku toyoompm(@)tmd.ac.jp

Motoko Watanabe totoompm(@)tmd.ac.jp

*Please replace the part (@) with @.

Reference URL

https://atoyofpsd2.wixsite.com/home

http://www.tmd.ac.jp/grad/ompm/ompm-J.htm

Lecture No	041252				
Subject title	Lecture of Professional Development in Health Sciences			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West

Course Purpose and Outline

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.

Course Objective(s)

At the end of the course, students will be able to:

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

2) Describe systems, accreditation, and quality control measures for health professional development in Japan and other countries

3) Describe key educational theories and learning methodologies which draw on those theories

4) Describe a process-based approach and an outcome logic model in planning and running curriculum

Lecture Style

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.

Course Outline

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.

Grading System

Students will be graded based on their active participation to class and submitted report.

Prerequisite Reading

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.

Reference Materials

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.

Lecture No	041253				
Subject title	Practice of Professional Development in Health Sciences			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West

Course Purpose and Outline

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.

Course Objective(s)

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

Lecture Style

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.

Course Outline

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.

Grading System

Students will be graded based on their active participation to class and submitted report.

Prerequisite Reading

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.

Reference Materials

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.

Lecture No	041254				
Subject title	Laboratory practice of Professional Development in Health Sciences			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

All lectures are conducted in English.

Lecture place

All sessions will be held at the meeting room of the Institute of Education, Room 513, 5th floor, Building 1 West

Course Purpose and Outline

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.

Course Objective(s)

At the end of the course, students will be able to:

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

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.

Lecture Style

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.

Course Outline

Goals/outline:

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.

Grading System

Students will be graded based on their research, and academic activities (participation to and presentation at domestic and international research conference).

Prerequisite Reading

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.

Reference Materials

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.

Lecture No	041255				
Subject title	Lecture of Family Medicine			**Subject ID**	
Instructors	橋本 正良, 別府 正志[HASHIMOTO MASAYOSHI, BETSUPU MASASHI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English as needed. If you are an international student, please feel free to contact us. I will explain our study in detail.

Lecture place

Lectures or discussion will be provided at the Department of Family Medicine (M&D tower, 14F South) or by ZOOM.

Course Purpose and Outline

In this department, we want students to learn how to resolve problems in the real community via research. Our research should not be mere finding or exploring the facts, but contribute towards people in communities. Research is only one of the tools for resolving problems in communities, improving clinical practices, and contributing to patients and people in community. Therefore, we should keep in our mind to implement the research findings into the real world.

Lecture Style

To enable students to fulfill our aims above mentioned, we provide didactic lectures about general medicine/family medicine, biostatistics, clinical epidemiology, qualitative research, how to build questionnaire and so on. However, attending these lectures for students is not enough to resolve problems in communities and they should: approach the target community or field; get familiar with the people living there; feel known or unknown needs from the people living there; and suggest some resolution for their needs or problems. These processes require students not only technical and academic skills, but also communication or social skills. As well, these processes train students to learn by their own mistakes. Therefore, we provide students safe environments to think their own interests for themselves.

Course Outline

The TMUDGM/FM-N conducts research several themes in general medicine/family medicine, communication, community medicine, and medical education. We especially focus on the behavioral aspects of patients and medical professionals, as well as collaborations between specialties or healthcare professionals. We use both quantitative and qualitative approaches.

The examples of ongoing research are as follows:

1. Research on the relationship between the characteristic of physicians and patients' medical seeking behavior or their health status
2. Research on non-verbal communication using artificial intelligence (AI)
3. reliability and validity of apparatus used in primary care setting (ultrasound, etc.)
4. Cost-effectiveness of the home care
5. Collaboration between primary care physicians and occupational physicians
6. To establish the method to build better team in medical setting
7. Relationship between the basis of the family medicine and health outcomes
8. Inter-professional education for students in medical school
9. Home visiting care for elderly in community
10. Other researches of family medicine/general medicine

Prerequisite Reading

Exam eligibility

Interview with the teacher is required. (The date and time of the interview is arranged by secretary. secretary2.fmed@tmd.ac.jp)

Reference URL

http://www.tmd.ac.jp/grad/fmed/

Lecture No	041256				
Subject title	Practice of Family Medicine			**Subject ID**	
Instructors	橋本 正良, 別府 正志[HASHIMOTO MASAYOSHI, BETSUPU MASASHI]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English as needed. If you are an international student, please feel free to contact us. I will explain our study in detail.

Lecture place

Lectures or discussion will be provided at the Department of Family Medicine (M&D tower, 14F South) or by ZOOM.

Course Purpose and Outline

In this department, we want students to learn how to resolve problems in the real community via research. Our research should not be mere finding or exploring the facts, but contribute towards people in communities. Research is only one of the tools for resolving problems in communities, improving clinical practices, and contributing to patients and people in community. Therefore, we should keep in our mind to implement the research findings into the real world.

Lecture Style

To enable students to fulfill our aims above mentioned, we provide didactic lectures about general medicine/family medicine, biostatistics, clinical epidemiology, qualitative research, how to build questionnaire and so on. However, attending these lectures for students is not enough to resolve problems in communities and they should: approach the target community or field; get familiar with the people living there; feel known or unknown needs from the people living there; and suggest some resolution for their needs or problems. These processes require students not only technical and academic skills, but also communication or social skills. As well, these processes train students to learn by their own mistakes. Therefore, we provide students safe environments to think their own interests for themselves.

Course Outline

The TMUDGM/FM-N conducts research several themes in general medicine/family medicine, communication, community medicine, and medical education. We especially focus on the behavioral aspects of patients and medical professionals, as well as collaborations between specialties or healthcare professionals. We use both quantitative and qualitative approaches.

The examples of ongoing research are as follows:

1. Research on the relationship between the characteristic of physicians and patients' medical seeking behavior or their health status
2. Research on non-verbal communication using artificial intelligence (AI)
3. reliability and validity of apparatus used in primary care setting (ultrasound, etc.)
4. Cost-effectiveness of the home care
5. Collaboration between primary care physicians and occupational physicians
6. To establish the method to build better team in medical setting
7. Relationship between the basis of the family medicine and health outcomes
8. Inter-professional education for students in medical school
9. Home visiting care for elderly in community
10. Other researches of family medicine/general medicine

Prerequisite Reading

Exam eligibility

Interview with the teacher is required. (The date and time of the interview is arranged by secretary. secretary2.fmed@tmd.ac.jp)

Reference URL

http://www.tmd.ac.jp/grad/fmed/

Lecture No	041257				
Subject title	Laboratory practice of Family Medicine			**Subject ID**	
Instructors	橋本 正良, 別府 正志[HASHIMOTO MASAYOSHI, BETSUPU MASASHI]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English as needed. If you are an international student, please feel free to contact us. I will explain our study in detail.

Lecture place

Lectures or discussion will be provided at the Department of Family Medicine (M&D tower, 14F South) or by ZOOM.

Course Purpose and Outline

In this department, we want students to learn how to resolve problems in the real community via research. Our research should not be mere finding or exploring the facts, but contribute towards people in communities. Research is only one of the tools for resolving problems in communities, improving clinical practices, and contributing to patients and people in community. Therefore, we should keep in our mind to implement the research findings into the real world.

Lecture Style

To enable students to fulfill our aims above mentioned, we provide didactic lectures about general medicine/family medicine, biostatistics, clinical epidemiology, qualitative research, how to build questionnaire and so on. However, attending these lectures for students is not enough to resolve problems in communities and they should: approach the target community or field; get familiar with the people living there; feel known or unknown needs from the people living there; and suggest some resolution for their needs or problems. These processes require students not only technical and academic skills, but also communication or social skills. As well, these processes train students to learn by their own mistakes. Therefore, we provide students safe environments to think their own interests for themselves.

Course Outline

The TMUDGM/FM-N conducts research several themes in general medicine/family medicine, communication, community medicine, and medical education. We especially focus on the behavioral aspects of patients and medical professionals, as well as collaborations between specialties or healthcare professionals. We use both quantitative and qualitative approaches.

The examples of ongoing research are as follows:

1. Research on the relationship between the characteristic of physicians and patients' medical seeking behavior or their health status
2. Research on non-verbal communication using artificial intelligence (AI)
3. reliability and validity of apparatus used in primary care setting (ultrasound, etc.)
4. Cost-effectiveness of the home care
5. Collaboration between primary care physicians and occupational physicians
6. To establish the method to build better team in medical setting
7. Relationship between the basis of the family medicine and health outcomes
8. Inter-professional education for students in medical school
9. Home visiting care for elderly in community
10. Other researches of family medicine/general medicine

Prerequisite Reading

Exam eligibility

Interview with the teacher is required. (The date and time of the interview is arranged by secretary. secretary2.fmed@tmd.ac.jp)

Reference URL

http://www.tmd.ac.jp/grad/fmed/

Lecture No	415032				
Subject title	Lecture of Infectious Disease			Subject ID	
Instructors	具 芳明[GU Yoshiaki]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Depending on the program, check with the instructor before taking the course.

Course Purpose and Outline

Developing basic skills to understand the pathogenesis of infectious diseases and their control-related issues from a scientific perspective.

Course Objective(s)

To understand unresolved issues in infectious disease treatment and research, and to develop an appropriate research plan to resolve them.

Lecture Style

The content will include broad reviews and current topics related to infectious diseases. The class size will be small, and discussion will be encouraged.

Course Outline

Infectious diseases are highly diverse in terms of patient background, infected organs, and pathogenic microorganisms, and the patterns of transmission and epidemics vary widely. This course aims to deepen our understanding of diseases and microorganisms and their epidemiology, and to build research on the pathogenesis and control of infectious diseases.

Grading System

Since the class is small, the level of understanding at the time of the class will be the basic evaluation. Participation in discussions, debates, exercises, and research practices, as well as presentations and remarks, will also be evaluated. In addition, a comprehensive evaluation will be made based on the content of the research, the degree of involvement in various studies and research conferences, and the number of presentations at academic conferences.

Prerequisite Reading

Basic clinical knowledge of infectious diseases should be acquired. Other instructions will be given as necessary.

Reference Materials

Mandell, Douglas, and Bennett's principles and practice of infectious diseases／[edited by] John E. Bennett, Raphael Dolin, Martin J. Blaser,Bennett, John E. (John Eugene),Dolin, Raphael,Blaser, Martin J.,：Elsevier, 2020

Kucers' the use of antibiotics : a clinical review of antibacterial, antifungal, antiparasitic and antiviral drugs／editor in chief, M. Lindsay Grayson ; Section editors, Sara E. Cosgrove ... [et al.],Kucers, A.,Grayson, M. Lindsay,Cosgrove, Sara E.,Crowe, Suzanne,Hope, William,McCarthy, James S.,Mills, John,Mouton, Johan W.,Paterson, David L.,：Hodder Arnold, 2018

Plotkin's vaccines／[edited by] Stanley A. Plotkin, Walter A. Orenstein, Paul A. Offit, Kathryn M. Edwards,Offit, Paul A., 1951-,Plotkin, Stanley A., 1932-,Orenstein, Walter A,Edwards, Kathryn M,：Elsevier, 2018

Important Course Requirements

None

Note(s) to Students

None

Email

yogu.cid@tmd.ac.jp

Instructor's Contact Information

Every Monday PM.2:00-4:00, Friday PM.2:00-4:00 M&D tower 17th floor

Lecture No	415033				
Subject title	Practice of Infectious Disease			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

Depending on the program, check with the instructor before taking the course.

Course Purpose and Outline

Developing basic skills to understand the pathogenesis of infectious diseases and their control-related issues from a scientific perspective.

Course Objective(s)

To understand unresolved issues in infectious disease treatment and research, and to develop an appropriate research plan to resolve them.

Lecture Style

The content will include broad reviews and current topics related to infectious diseases. The class size will be small, and discussion will be encouraged.

Course Outline

Infectious diseases are highly diverse in terms of patient background, infected organs, and pathogenic microorganisms, and the patterns of transmission and epidemics vary widely. This course aims to deepen our understanding of diseases and microorganisms and their epidemiology, and to build research on the pathogenesis and control of infectious diseases.

Grading System

Since the class is small, the level of understanding at the time of the class will be the basic evaluation. Participation in discussions, debates, exercises, and research practices, as well as presentations and remarks, will also be evaluated. In addition, a comprehensive evaluation will be made based on the content of the research, the degree of involvement in various studies and research conferences, and the number of presentations at academic conferences.

Prerequisite Reading

Basic clinical knowledge of infectious diseases should be acquired. Other instructions will be given as necessary.

Reference Materials

Mandell, Douglas, and Bennett's principles and practice of infectious diseases／[edited by] John E. Bennett, Raphael Dolin, Martin J. Blaser,Bennett, John E. (John Eugene),Dolin, Raphael,Blaser, Martin J.,：Elsevier, 2020

Kucers' the use of antibiotics : a clinical review of antibacterial, antifungal, antiparasitic and antiviral drugs／editor in chief, M. Lindsay Grayson ; Section editors, Sara E. Cosgrove ... [et al.],Kucers, A.,Grayson, M. Lindsay,Cosgrove, Sara E.,Crowe, Suzanne,Hope, William,McCarthy, James S.,Mills, John,Mouton, Johan W.,Paterson, David L.,：Hodder Arnold, 2018

Plotkin's vaccines／[edited by] Stanley A. Plotkin, Walter A. Orenstein, Paul A. Offit, Kathryn M. Edwards,Offit, Paul A., 1951-,Plotkin, Stanley A., 1932-,Orenstein, Walter A,Edwards, Kathryn M,：Elsevier, 2018

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415034				
Subject title	Laboratory practice of Infectious Disease			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Depending on the program, check with the instructor before taking the course.

Course Purpose and Outline

Developing basic skills to understand the pathogenesis of infectious diseases and their control-related issues from a scientific perspective.

Course Objective(s)

To understand unresolved issues in infectious disease treatment and research, and to develop an appropriate research plan to resolve them.

Lecture Style

The content will include broad reviews and current topics related to infectious diseases. The class size will be small, and discussion will be encouraged.

Course Outline

Infectious diseases are highly diverse in terms of patient background, infected organs, and pathogenic microorganisms, and the patterns of transmission and epidemics vary widely. This course is designed to develop an understanding of diseases and microorganisms and their epidemiology, and to design and conduct research on the pathogenesis and control of infectious diseases.

Grading System

Since the class is small, the level of understanding at the time of the class will be the basic evaluation. Participation in discussions, debates, exercises, and research practices, as well as presentations and remarks, will also be evaluated. In addition, a comprehensive evaluation will be made based on the content of the research, the degree of involvement in various studies and research conferences, and the number of presentations at academic conferences.

Prerequisite Reading

Basic clinical knowledge of infectious diseases should be acquired. Other instructions will be given as necessary.

Reference Materials

Mandell, Douglas, and Bennett's principles and practice of infectious diseases／[edited by] John E. Bennett, Raphael Dolin, Martin J. Blaser,Bennett, John E. (John Eugene),Dolin, Raphael,Blaser, Martin J.,：Elsevier, 2020

Kucers' the use of antibiotics : a clinical review of antibacterial, antifungal, antiparasitic and antiviral drugs／editor in chief, M. Lindsay Grayson ; Section editors, Sara E. Cosgrove ... [et al.],Kucers, A.,Grayson, M. Lindsay,Cosgrove, Sara E.,Crowe, Suzanne,Hope, William,McCarthy, James S.,Mills, John,Mouton, Johan W.,Paterson, David L.,：Hodder Arnold, 2018

Plotkin's vaccines／[edited by] Stanley A. Plotkin, Walter A. Orenstein, Paul A. Offit, Kathryn M. Edwards,Offit, Paul A., 1951-,Plotkin, Stanley A., 1932-,Orenstein, Walter A,Edwards, Kathryn M,：Elsevier, 2018

Important Course Requirements

None

Note(s) to Students

None

Lecture No	041258				
Subject title	Lecture of Neuroanatomy and Cellular Neurobiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

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.

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

Special Lectures are open to every student interested in attending. Limited to 5-6 students in other programs.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Prerequisite: Basic undergraduate-level knowledge on biomedical sciences

Reference Materials

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).

Important Course Requirements

Consult your academic advisor in advance on schedule before taking the course.

Note(s) to Students

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).

Lecture No	041259				
Subject title	Practice of Neuroanatomy and Cellular Neurobiology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

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)

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

Special Lectures are open to every student interested in attending. Limited to 5–6 students in other programs.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Prerequisite: Basic undergraduate-level knowledge on biomedical sciences

Reference Materials

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).

Important Course Requirements

Consult your academic advisor in advance on schedule before taking the course.

Note(s) to Students

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).

Lecture No	041260				
Subject title	Laboratory practice of Neuroanatomy and Cellular Neurobiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All lectures are conducted in Japanese.

Lecture place

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 (Bulding 8 South, 3rd floor)

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

Special Lectures are open to every student interested in attending. Limited to 5-6 students in other programs.

Course Outline

Goals/Outline:

Lectures and laboratory treating the central nervous system from the ultramicroscopic points of view are arranged.

Grading System

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.

Prerequisite Reading

Prerequisite: Basic undergraduate-level knowledge on biomedical sciences

Reference Materials

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).

Important Course Requirements

Consult your academic advisor in advance on schedule before taking the course.

Note(s) to Students

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).

Lecture No	041261				
Subject title	Lecture of Systems Neurophysiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Dr. Sugihara's office (14th floor, Building 3)

or on-line class through Zoom

Course Purpose and Outline

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.

Course Objective(s)

We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.

Lecture Style

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.

Date and time: From 4:00 p.m. every week.

Course Outline

(Check with the teacher in charge for the program which is not specifically scheduled.)

Lecture

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 (Information about other classes for reference)

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 (Information about other classes for reference)

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 utilyze 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 approch to basic and clinical problems in the nervous system.

Grading System

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).

Prerequisite Reading

Participants have to prepare their presentation in the lecture. They have to read through the article for the Jornal Club. They are supposed to arrange other things with the instructor (professor).

TextBook

PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.

Reference Materials

Cerebellum as a CNS hub／Hidehiro Mizusawa, Shinji Kakei, editors,水澤, 英洋, 1952-,Kakei, Shinji [筧慎治],:Springer, 2021

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

Important Course Requirements

N/A

Note(s) to Students

http://www.tmd.ac.jp/med/eng/eng/phy1-E.html

Lecture No	041262				
Subject title	Practice of Systems Neurophysiology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Dr. Sugihara's office (14th floor, Building 3)

or on-line class through Zoom

Course Purpose and Outline

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.

Course Objective(s)

We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.

Lecture Style

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.

Date and time: from 5:00 p.m. every week.

Course Outline

(Check with the teacher in charge for the program which is not specifically scheduled.)

(information for reference)

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 (information for reference)

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 utilyze 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 approch to basic and clinical problems in the nervous system.

Grading System

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).

Prerequisite Reading

Participants have to prepare their presentation in the lecture. They have to read through the article for the Jornal Club. They are supposed to arrange other things with the instructor (professor).

TextBook

PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.

Reference Materials

Cerebellum as a CNS hub／Hidehiro Mizusawa, Shinji Kakei, editors,水澤, 英洋, 1952–,Kakei, Shinji [筧慎治],：Springer, 2021

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

Important Course Requirements

N/A

Note(s) to Students

http://www.tmd.ac.jp/med/eng/eng/phy1-E.html

Lecture No	041263				
Subject title	Laboratory practice of Systems Neurophysiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in English.

Lecture place

Dr. Sugihara's office (14th floor, Building 3)

or on-line lecture through Zoom

Course Purpose and Outline

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.

Course Objective(s)

We hope each participants can obtain capability of planning, conducting and evaluating neuroscience research.

Lecture Style

Laboratory Practice is designed for individual students. All the courses can be in English.

Date and time: The schedule and time will be decided after consultation.

Course Outline

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 utilyze 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 approch to basic and clinical problems in the nervous system.

Grading System

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).

Prerequisite Reading

Participants have to prepare their presentation in the lecture. They have to read through the article for the Jornal Club. They are supposed to arrange other things with the instructor (professor).

TextBook

PurvwaD, et al. (Ed), Neuroscience, 6th Edition. 2018, New York, Oxford University Press.

Reference Materials

Cerebellum as a CNS hub／Hidehiro Mizusawa, Shinji Kakei, editors,水澤, 英洋, 1952-,Kakei, Shinji [筧慎治],:Springer, 2021

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

Important Course Requirements

N/A

Note(s) to Students
http://www.tmd.ac.jp/med/eng/eng/phy1-E.html

Lecture No	041267				
Subject title	Lecture of Molecular Neuroscience			Subject ID	
Instructors	田中　光一[TANAKA KOICHI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Please confirm venue with instructors

Course Purpose and Outline

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.

Course Objective(s)

Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates

Lecture Style

All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.

Course Outline

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.

Grading System

Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.

Prerequisite Reading

It is recommended that students prepare for the class by reading the reference books listed in the next section.

Reference Materials

・「Neuroscience-Exploring the brain」(Lippincott Williams & Wilkins)

・「From Neuron to Brain」(Sinauer)

Important Course Requirements

N/A

Note(s) to Students

In principle, progress report and journal club are hold with less than ten participants.

Email

tanaka.aud@mri.tmd.ac.jp

Instructor's Contact Information

Questions on lectures are welcomed as needed.

Lecture No	041268				
Subject title	Practice of Molecular Neuroscience			**Subject ID**	
Instructors	田中　光一[TANAKA KOICHI]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please confirm venue with instructors

Course Purpose and Outline

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.

Course Objective(s)

Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates

Lecture Style

All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.

Course Outline

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.

Grading System

Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.

Prerequisite Reading

It is recommended that students prepare for the class by reading the reference books listed in the next section.

Reference Materials

・「Neuroscience-Exploring the brain」(Lippincott Williams & Wilkins)

・「From Neuron to Brain」(Sinauer)

Important Course Requirements

N/A

Note(s) to Students

In principle, progress report and journal club are hold with less than ten participants.

Lecture No	041269				
Subject title	Laboratory practice of Molecular Neuroscience			Subject ID	
Instructors	田中 光一[TANAKA KOICHI]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please confirm venue with instructors

Course Purpose and Outline

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.

Course Objective(s)

Connecting neural mechanisms of behavior to their underlying molecular and genetic substrates

Lecture Style

All programs will be held with small-group. We will provide opportunities for discussions as much as possible to improve communication with students.

Course Outline

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.

Grading System

Students are evaluated for their participation in course, research reports, presentations at academic meetings and publications.

Prerequisite Reading

It is recommended that students prepare for the class by reading the reference books listed in the next section.

Reference Materials

・「Neuroscience-Exploring the brain」(Lippincott Williams & Wilkins)

・「From Neuron to Brain」(Sinauer)

Important Course Requirements

N/A

Note(s) to Students

In principle, progress report and journal club are hold with less than ten participants.

Lecture No	041270				
Subject title	Lecture of Neuropathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Need to check with professor in advance; classes are different in each program.

Course Purpose and Outline

Understnading of the outline of research on neurodegenrative diseases and developmental disorders

Course Objective(s)

Obtaining the ability to design and perform original research

Lecture Style

The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.

Course Outline

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.

Grading System

Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.

Prerequisite Reading

Related papers would be suggested in each occasion.

Reference Materials

Suggestions will be provided in each project.

Important Course Requirements

n.a.

Note(s) to Students

Number of participants for journal club and research meeting in the lab should be around 10 people.

Lecture No	041271				
Subject title	Practice of Neuropathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Need to check with professor in advance; classes are different in each program.

Course Purpose and Outline

Understnading of the outline of research on neurodegenrative diseases and developmental disorders

Course Objective(s)

Obtaining the ability to design and perform original research

Lecture Style

The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.

Course Outline

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.

Grading System

Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.

Prerequisite Reading

Related papers would be suggested in each occasion.

Reference Materials

Suggestions will be provided in each project.

Important Course Requirements

n.a.

Note(s) to Students

Number of participants for journal club and research meeting in the lab should be around 10 people.

Lecture No	041272				
Subject title	Laboratory practice of Neuropathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Need to check with professor in advance; classes are different in each program.

Course Purpose and Outline

Understnading of the outline of research on neurodegenrative diseases and developmental disorders

Course Objective(s)

Obtaining the ability to design and perform original research

Lecture Style

The size of the class should be small. In order to stimulate interaction with participants, the class will be discussion-oriented.

Course Outline

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.

Grading System

Students will be evaluated based on quality of research reports, presentations in conferences, and /or scientific papers.

Prerequisite Reading

Related papers would be suggested in each occasion.

Reference Materials

Suggestions will be provided in each project.

Important Course Requirements

n.a.

Note(s) to Students

Number of participants for journal club and research meeting in the lab should be around 10 people.

Lecture No	041273				
Subject title	Lecture of Ophthalmology and Visual Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.Research Progress meeting will be conducted in English.					

Lecture place

Ask the instructor for details

Course Purpose and Outline

Basic and advanced learning of ophthalmology

Course Objective(s)

To learn the knoledges and skills required in ophthalmic research

Lecture Style

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

Course Outline

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

Grading System

Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attidude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.

Prerequisite Reading

Reading texbooks of ophthalmology or basic research in this field.

Reference Materials

The Eye :Basic Science in Practice(SAUNDERS) etc

Important Course Requirements

Nothing particularly

Note(s) to Students

We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.

Lecture No	041274				
Subject title	Practice of Ophthalmology and Visual Science			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.Research Progress meeting will be conducted in English.					

Lecture place

Ask the instructor for details

Course Purpose and Outline

Basic and advanced learning of ophthalmology

Course Objective(s)

To learn the knoledges and skills required in ophthalmic research

Lecture Style

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

Course Outline

Goals/Outline:

To realize the diagnostic procedures and treatment strategies against various ocular disorders

Grading System

Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attidude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.

Prerequisite Reading

Reading texbooks of ophthalmology or basic research in this field.

Reference Materials

The Eye :Basic Science in Practice(SAUNDERS) etc

Important Course Requirements

Nothing particularly

Note(s) to Students

We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.

Lecture No	041275				
Subject title	Laboratory practice of Ophthalmology and Visual Science			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.Research Progress meeting will be conducted in English.					

Lecture place

Ask the instructor for details

Course Purpose and Outline

Basic and advanced learning of ophthalmology

Course Objective(s)

To learn the knoledges and skills required in ophthalmic research

Lecture Style

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

Course Outline

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

Grading System

Grade evaluation is comprehensively performed according to the attendance at conference, lecture and practice, the attidude shown by the presentation and making comments during the discussion, the research content, and the number of conference presentation as the first author.

Prerequisite Reading

Reading texbooks of ophthalmology or basic research in this field.

Reference Materials

The Eye :Basic Science in Practice(SAUNDERS) etc

Important Course Requirements

Nothing particularly

Note(s) to Students

We would like to recruit the students who are highly motivated and interested in visual science and ophthalmology.

Lecture No	041276				
Subject title	Lecture of Otorhinolaryngology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Please contact the leaders prior to lecture.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Please consulrt to lecturer.

Reference Materials

Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo

Important Course Requirements

None

Note(s) to Students

No limitation for applicant. Presenter in the journal group will be limited to 10 persons.

Lecture No	041277				
Subject title	Practice of Otorhinolaryngology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Please contact the leaders prior to lecture.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.

Course Outline

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. Equillibrium tests including standard tests, electronystagmography, gravicorder and three dimensional occulography. 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.

Grading System

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.

Prerequisite Reading

Please consulrt to lecturer.

Reference Materials

Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo

Important Course Requirements

None

Note(s) to Students

No limitation for applicant. Presenter in the journal group will be limited to 10 persons.

Lecture No	041278				
Subject title	Laboratory practice of Otorhinolaryngology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Please contact the leaders prior to lecture.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group teaching is principle. Through mini-conference and one-minute lecture, thorough discussion with lecturer, is planned.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Please consulrt to lecturer.

Reference Materials

Modern Oto-Rhino-Laryngology, Yasuya Nomura, Kimitaka Kaga(Editors), 2013 Nanzando, Tokyo

Important Course Requirements

None

Note(s) to Students

No limitation for applicant. Presenter in the journal group will be limited to 10 persons.

Lecture No	041279				
Subject title	Lecture of Neurology and Neurological Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Contact by e-mail for locations of lectures: Conference Room (B11F, medical hospital), Neurology and Neurological Science Laboratories (12F, 15F Building Ⅲ), etc.

Special Lecture (e.g. ONSA seminar): twice a year

Ochanomizu Brain Science Seminar : twice a year

Basic Research Journal Club (BRJC) :every Tuesday, 17:00 – 18:00

Clinical Pharmacology Seminar: Tuesday(occasionally), 14:30 – 14:45

Neurology Seminar: every Tuesday, 14:30 – 14:45

Course Purpose and Outline

Students have to understand characteristics of neurological diseases as a research object, through getting lecutures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvemet of diagnostic proceedures or evaluation of the diseases.

Course Objective(s)

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 improvemet of diagnostic proceedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.

Lecture Style

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.

Course Outline

Goals/Outline:

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.

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.

Grading System

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.

Prerequisite Reading

Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are requrired to read those textbooks and well prepare for the lecutrs and practical trainings.

Reference Materials

Students should ask their teachers (primary investigators) because textbooks are different accoding to their projects.

Important Course Requirements

Not particularly.

Note(s) to Students

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.

Lecture No	041280				
Subject title	Practice of Neurology and Neurological Science			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Contact by e-mail 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

Course Purpose and Outline

Students have to understand characteristics of neurological diseases as a research object, through getting lecutures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvemet of diagnostic proceedures or evaluation of the diseases.

Course Objective(s)

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 improvemet of diagnostic proceedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.

Lecture Style

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.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are requrired to read those textbooks and well prepare for the lecutrs and practical trainings.

Reference Materials

Students should ask their teachers (primary investigators) because textbooks are different accoding to their projects.

Important Course Requirements

Not particularly.

Note(s) to Students

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.

Lecture No	041281				
Subject title	Laboratory practice of Neurology and Neurological Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Contact by e-mail for locations of lectures: Conference Room (B11F, medical hospital), Neurology and Neurological Science Laboratories (12F, 15F Building Ⅲ), etc.

Molecular biology experiment:　Everyday, available any time

Neuroimaging experiment: Everyday, available any time

Biochemistry experiment: Everyday, available any time

Morphology experiment: Everyday, available any time

Immunology experiment: Everyday, available any time

Molecular genetics experiment: Everyday, available any time

Course Purpose and Outline

Students have to understand characteristics of neurological diseases as a research object, through getting lecutures and practical trainings for a proceeding of elucidating the pathogenic mechanisms, and development and improvemet of diagnostic proceedures or evaluation of the diseases.

Course Objective(s)

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 improvemet of diagnostic proceedures, evaluation or treatment of the diseases. Students will perform their projects and get a results using the methods.

Lecture Style

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.

Course Outline

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, pathogeneses, 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.

Grading System

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.

Prerequisite Reading

Students should make a contact with their teachers (primary investigators) to check textbooks and reference literatures. They are requrired to read those textbooks and well prepare for the lecutrs and practical trainings.

Reference Materials

Students should ask their teachers (primary investigators) because textbooks are different accoding to their projects.

Important Course Requirements

Not particularly.

Note(s) to Students

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.

Lecture No	041282				
Subject title	Lecture of Psychiatry and Behavioral Sciences Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.

Course Purpose and Outline

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 stadies in the research field of forensic psychiatry. Fundamental knowledge of mental disoders, which is cruciall to develop novel treatment and prophylaxis for them, will be provided during the course.

Course Objective(s)

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 mechanim 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.

Lecture Style

Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.

Course Outline

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.

Grading System

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.

Prerequisite Reading

1) Required to read through the text and the handout-pirnting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.

Reference Materials

1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electoronic edition) 2009

2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electoronic edition) 2007

3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015

Important Course Requirements

None

Lecture No	041283				
Subject title	Practice of Psychiatry and Behavioral Sciences Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.

Course Purpose and Outline

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 stadies in the research field of forensic psychiatry. Fundamental knowledge of mental disoders, which is cruciall to develop novel treatment and prophylaxis for them, will be provided during the course.

Course Objective(s)

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 mechanim 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.

Lecture Style

Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.

Course Outline

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 illegall 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.

Grading System

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.

Prerequisite Reading

1) Required to read through the text and the handout-pirnting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.

Reference Materials

1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electoronic edition) 2009

2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electoronic edition) 2007

3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015

Important Course Requirements

None

Lecture No	041284				
Subject title	Laboratory practice of Psychiatry and Behavioral Sciences Ⅰ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Office of the Professor, outpatient station conference room at the University Hospital, and other seminar rooms.

Course Purpose and Outline

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 stadies in the research field of forensic psychiatry. Fundamental knowledge of mental disoders, which is cruciall to develop novel treatment and prophylaxis for them, will be provided during the course.

Course Objective(s)

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 mechanim 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.

Lecture Style

Small group tutorial style by mentors, including research progress meeting, at-the-bench discussion, and journal seminars.

Course Outline

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.

Grading System

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.

Prerequisite Reading

1) Required to read through the text and the handout-pirnting materials beforehand provided, 2) Prerequisite additional preparation will be in advance informed.

Reference Materials

1) Kaplan & Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Benjamin J. Sadock & Birginia A. Sadock (eds). Lippincott Williams & Wilkins. (electoronic edition) 2009

2) Lewis's Child and Adolescent Psychiatry: A Comprehensive Textbook, 4th ed. André Martin & Fred R.Volkmar (eds). Lippincott Williams & Wilkins. (electoronic edition) 2007

3) Molecular Neuropharmacology, 3rd ed. Eric J. Nestler, Steven E. Hyman, and Robert C. Malenka (eds). Mc Graw Hill Medical 2015

Important Course Requirements

None

Lecture No	041285				
Subject title	Lecture of Psychiatry and Behavioral Sciences Ⅱ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Mental Health Laboratory on 25th floor of M&D Tower

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

The lecture will be held in small-group basis.

Course Outline

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.

Grading System

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.

Prerequisite Reading

(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.

TextBook

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

Lecture No	041286				
Subject title	Practice of Psychiatry and Behavioral Sciences Ⅱ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Mental Health Laboratory on 25th floor of M&D Tower

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

The lecture will be held in small-group basis.

Course Outline

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.

Grading System

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.

Prerequisite Reading

(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.

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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

Reference URL
http://www.tmd.ac.jp/fpsy/index.html

Lecture No	041287				
Subject title	Laboratory practice of Psychiatry and Behavioral Sciences Ⅱ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Mental Health Laboratory on 25th floor of M&D Tower

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

The lecture will be held in small-group basis.

Course Outline

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.

Grading System

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.

Prerequisite Reading

TextBook

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

Reference URL
http://www.tmd.ac.jp/fpsy/index.html

Lecture No	041904				
Subject title	Lecture of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

The lectures would cover the broad area of consultation-liaison psychiatry including,

・Psychological problems and psychiatric symptoms in the general medical settings

・Palliative care for patients with cancer

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳,Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

Psychosomatic Medicine (edited by Kurt D. Ackerman and Andrea F Dimartini) Oxford University Press, New york, 2015.

Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

N/A

Email

TAKEUCHI TAKASHI:okaspsyc@tmd.ac.jp
Instructor's Contact Information
TAKEUCHI TAKASHI:Every Tuesday 6:00 PM – 7:00 PM MD Tower 18th Floor Laboratory

Lecture No	041905				
Subject title	Practice of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

・Develop new methods for diagnosis, treatment and prevention of psychosomatic problem through case discussions

・Learn and practice skills to develop assessments and design appropriate treatment plans for patients with various psychiatric disorders

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

Psychosomatic Medicine (edited by Kurt D. Ackerman and Andrea F Dimartini) Oxford University Press, New york, 2015.

Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041906				
Subject title	Laboratory practice of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

Our research projects are;

・Intervention study on physically ill patients with psychiatric problem

・Clinical-physiological research on psychiatric patients

・Acquire up-to-date knowledge of scientific findings and practice specialized research techniques for these area

・Apply these knowledge and techniques for further deplopment of current research

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

Psychosomatic Medicine (edited by Kurt D. Ackerman and Andrea F Dimartini) Oxford University Press, New york, 2015.

Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

Lecture No	041286				
Subject title	Practice of Psychiatry and Behavioral Sciences Ⅱ			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Mental Health Laboratory on 25th floor of M&D Tower

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

The lecture will be held in small-group basis.

Course Outline

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.

Grading System

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.

Prerequisite Reading

(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.

TextBook

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Reference URL http://www.tmd.ac.jp/fpsy/index.html

Lecture No	041287				
Subject title	Laboratory practice of Psychiatry and Behavioral Sciences Ⅱ			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Forensic Mental Health Laboratory on 25th floor of M&D Tower

Course Purpose and Outline

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.

Course Objective(s)

(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.

Lecture Style

The lecture will be held in small-group basis.

Course Outline

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.

Grading System

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.

Prerequisite Reading

TextBook

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

Lecture No	041904				
Subject title	Lecture of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

The lectures would cover the broad area of consultation-liaison psychiatry including,

・Psychological problems and psychiatric symptoms in the general medical settings

・Palliative care for patients with cancer

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳,Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

Psychosomatic Medicine (edited by Kurt D. Ackerman and Andrea F Dimartini) Oxford University Press, New york, 2015.

Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

N/A

Email

TAKEUCHI TAKASHI:okaspsyc@tmd.ac.jp
Instructor's Contact Information TAKEUCHI TAKASHI:Every Tuesday 6:00 PM – 7:00 PM MD Tower 18th Floor Laboratory

Lecture No	041905				
Subject title	Practice of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

・Develop new methods for diagnosis, treatment and prevention of psychosomatic problem through case discussions

・Learn and practice skills to develop assessments and design appropriate treatment plans for patients with various psychiatric disorders

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

Psychosomatic Medicine (edited by Kurt D. Ackerman and Andrea F Dimartini) Oxford University Press, New york, 2015.

Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041906				
Subject title	Laboratory practice of Psychiatry and Behavioral Sciences Ⅲ			Subject ID	
Instructors	竹内 崇[TAKEUCHI TAKASHI]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Contact us for information.

Course Purpose and Outline

Understand the psychosocial issues in the general medical setting from a viewpoint comprehensive medicine.

Course Objective(s)

Develop skills to provide a comprehensive diagnosis, treatment and prevention of psychosomatic problems in physical illness.

Lecture Style

Class sizes are kept small to facilitate student-teacher interaction and class discussion. These will be conducted online as appropriate.

Course Outline

Goals/Outlines:

Our research projects are;

・Intervention study on physically ill patients with psychiatric problem

・Clinical-physiological research on psychiatric patients

・Acquire up-to-date knowledge of scientific findings and practice specialized research techniques for these area

・Apply these knowledge and techniques for further deplopment of current research

These will be conducted online as appropriate.

Grading System

Grades will be based on participation, reseach work, presentation at academic conference and research paper publication.

Prerequisite Reading

Students are expected to preview the books on the required reading list.

TextBook

ピッツバーグ総合病院精神医学マニュアル : コンサルテーション・リエゾン精神医学／edited by Kurt D. Ackerman, Andrea F. DiMartini ; 村井俊哉, 林晶子編訳 ; 勢島奏子 [ほか] 訳Ackerman, Kurt D.,DiMartini, Andrea F.,村井, 俊哉,林, 晶子,勢島, 奏子,:丸善出版, 2020

精神腫瘍学／内富庸介, 小川朝生編集,内富, 庸介,小川, 朝生,:医学書院, 2011

専門医のための精神科臨床リュミエール 24 サイコオンコロジー／大西秀樹 責任編集,オオニシヒデキ,:中山書店, 2010-09-30

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Psycho-Oncology 4th edition (edited by William S. Breitbart et al), Oxford University Press, New York, 2021.

Reference Materials

臨床精神医学講座 第17巻／松下正明,浅井昌弘,牛島定信 ほか編,マツシタ マサアキ,アサイ マサヒロ,ウシジマ サダノブ,:中山書店, 1998-10-30

リエゾン精神医学とその治療学／山脇成人担当編集,山脇, 成人,:中山書店, 2009

精神腫瘍学クリニカルエッセンス／小川朝生, 内富庸介編集,内富, 庸介,小川, 朝生,日本総合病院精神医学会,:創造出版, 2012

がん患者心理療法ハンドブック／Maggie Watson, David Kissane [編] ; 内富庸介, 大西秀樹, 藤澤大介監訳,Watson, M.,Kissane, David William, 内富, 庸介,大西, 秀樹,藤澤, 大介,:医学書院, 2013

緩和医療における精神医学ハンドブック／Harvey M. Chochinov, William Breitbart 編,Chochinov, Harvey Max,Breitbart, William,内富, 庸介,:星和書店, 2001

Relationship With Other Subjects

N/A

Important Course Requirements

N/A

Note(s) to Students

Lecture No	041288				
Subject title	Lecture of Neurosurgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Ask the instructors before the class start.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group is favorable. Talk & discussion style is scheduled.

Remote sessions are prepared according to the situation of COVID-19.

Course Outline

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.

Grading System

By students' attendance rate, oral presentation.

Prerequisite Reading

Ask the instructors before the class start.

TextBook

Ask the instructors before the class start.

Reference Materials

Ask the instructors before the class start.

Relationship With Other Subjects

Collaborate with other basic and clinical courses depending on the disease and research subject.

Important Course Requirements

none.

Note(s) to Students

Journal club is conducted on a remote system.

In-facility training is expected to be suspended in consideration of COVID-19 infection.

Lecture No	041289				
Subject title	Practice of Neurosurgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Ask the instructors before the class start.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group is favorable. Talk & discussion style is scheduled.

Remote sessions are prepared according to the situation of COVID-19.

Course Outline

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.

Grading System

By students' attendance rate, oral presentation.

Prerequisite Reading

Ask the instructors before the class start.

TextBook

Ask the instructors before the class start.

Reference Materials

Ask the instructors before the class start.

Relationship With Other Subjects

Collaborate with other basic and clinical courses depending on the disease and research subject.

Important Course Requirements

none.

Note(s) to Students

Journal club is conducted on a remote system.

In-facility training is expected to be suspended in consideration of COVID-19 infection.

Lecture No	041290				
Subject title	Laboratory practice of Neurosurgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Ask the instructors before the class start.

Lecture place

Ask the instructors before the class start.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group is favorable. Talk & discussion style is scheduled.

Remote sessions are prepared according to the situation of COVID-19.

Course Outline

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.

Grading System

By students' attendance rate, oral presentation.

Prerequisite Reading

Ask the instructors before the class start.

TextBook

Ask the instructors before the class start.

Reference Materials

Ask the instructors before the class start.

Relationship With Other Subjects

Collaborate with other basic and clinical courses depending on the disease and research subject.

Important Course Requirements

none.

Note(s) to Students

Journal club is conducted on a remote system.

In-facility training is expected to be suspended in consideration of COVID-19 infection.

Lecture No	041291				
Subject title	Lecture of Endovascular Surgery			Subject ID	
Instructors	壽美田 一貴[SUMITA KAZUTAKA]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Conference room at 20F of MD tower

Course Purpose and Outline

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.

Course Objective(s)

Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery.

Lecture Style

Few members each group.

Course 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.

Grading System

Attending the lecture and practice and oral exam.

Prerequisite Reading

Student should learned basic knowledge of brain anatomy and neurology.

Reference Materials

Surgical Neuroangiography 1-3 (Springer)

Important Course Requirements

Nothing in particular.

Email

SUMITA KAZUTAKA:ikyoku.evs@tmd.ac.jp

Instructor's Contact Information

SUMITA KAZUTAKA:Mon, Tue, Thu, Fri AM.10:00-PM.4:00 M&D tower 20F, Department of Endovascular Surgery

Lecture No	041292				
Subject title	Practice of Endovascular Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Conference room at 20F of MD tower

Course Purpose and Outline

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.

Course Objective(s)

Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery.

Lecture Style

Few members each group.

Course 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.

Grading System

Attending the lecture and practice and oral exam.

Prerequisite Reading

Student should learned basic knowledge of brain anatomy and neurology.

Reference Materials

Surgical Neuroangiography 1-3 (Springer)

Important Course Requirements

Nothing in particular.

Note(s) to Students

Due to clinical services for patients, members are limited.

Lecture No	041293				
Subject title	Laboratory practice of Endovascular Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Conference room at 20F of MD tower

Course Objective(s)

Course objects of Endovascular Surgery in the graduate course is to acquire the proper technique as well as the basic knowledge of neuroendovascular surgery. In addition, conduct research on new problems.

Lecture Style

Few members each group.

Course Outline

Hemodynamic influence caused by endovascular devices are studied using computerized 3 dimension analysis of fluid hemodynamics.

To obtain catheterization and endovascular technique, virtual simulator training are used.

Grading System

Attending the lecture and practice and oral exam.

Prerequisite Reading

Student should learned basic knowledge of brain anatomy and neurology.

Reference Materials

Surgical Neuroangiography 1-3 (Springer)

Important Course Requirements

Nothing in particular.

Note(s) to Students

Due to clinical services for patients, members are limited.

Lecture No	041294				
Subject title	Lecture of NCNP Brain Physiology and Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

NCNP

Course Purpose and Outline

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).

Course Objective(s)

To know the basic structure and the developmental machinery of the nervous system of mammals including humans.To understand the pathology of some neuropsyichiatric diseases.

Lecture Style

Lecture with Power Point Slides.

Course Outline

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

Grading System

We evaluate students generally based on progress reports on their studies　in addition to attendance at lectures.

Prerequisite Reading

Lecture No	041295				
Subject title	Practice of NCNP Brain Physiology and Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

NCNP

Course Purpose and Outline

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).

Course Objective(s)

To know the basic structure and the developmental machinery of the nervous system of mammals including humans.To understand the pathology of some neuropsyichiatric diseases.

Lecture Style

The size of the class is small.　A few students are supervised by a senior scientist.

Course Outline

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.

Grading System

We evaluate students generally based on presentations at meetings in addition to attendance at practices.

Prerequisite Reading

Lecture No	041296				
Subject title	Laboratory practice of NCNP Brain Physiology and Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

NCNP

Course Purpose and Outline

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.

Course Objective(s)

Presentation at conferences. Acceptance of papers.

Lecture Style

Each student is supervised by a senior scientist.

Course Outline

Design the project, experiments, analysis of results, preparation of papers.

Grading System

We evaluate students generally based on progress reports on their studies and presentations at meetings in addition to accepted papers.

Prerequisite Reading

Exam eligibility

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).

Lecture No	041300				
Subject title	Lecture of Molecular Virology			Subject ID	
Instructors	武内 寛明[TAKEUCHI HIROAKI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

On the 17th floor of M&D Tower

Course Purpose and Outline

To learn general knowledge of virology and experimental techniques.

Course Objective(s)

To understand the virological research and analyze the experimental results for reaching the conclusion.

Lecture Style

No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.

Reference Materials

Fields Virology, Medical Microbiology and Infection at a Glance

Important Course Requirements

Nothing particular

Note(s) to Students

The number of students joining the programs will be limited to 10.

Email

TAKEUCHI HIROAKI:htake.molv@tmd.ac.jp

Instructor's Contact Information

TAKEUCHI HIROAKI:Every Friday AM. 11:00–PM. 2:00

17th floors of MD tower, Department of Molecular Virology

e-mail: htake.molv@tmd.ac.jp

Lecture No	041301				
Subject title	Practice of Molecular Virology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

On the 17th floor of M&D Tower

Course Purpose and Outline

To learn general knowledge of virology and experimental techniques.

Course Objective(s)

To understand the virological research and analyze the experimental results for reaching the conclusion.

Lecture Style

No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.

Course Outline

Goals/Outline:

Understand experimental procedures for virology, bacteriology, immunology and molecular cell biology to prepare research article.

Grading System

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.

Prerequisite Reading

Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.

Reference Materials

Fields Virology, Medical Microbiology and Infection at a Glance

Important Course Requirements

Nothing particular

Note(s) to Students

The number of students joining the programs will be limited to 10.

Lecture No	041302				
Subject title	Laboratory practice of Molecular Virology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

On the 17th floor of M&D Tower

Course Purpose and Outline

To learn general knowledge of virology and experimental techniques.

Course Objective(s)

To understand the virological research and analyze the experimental results for reaching the conclusion.

Lecture Style

No more than 10 students will be allowed to join the lectures so that students are encouraged to join discussion.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Reading the Journal Club paper in advance, acquiring the safe and accurate procedures before starting infection experiments.

Reference Materials

Fields Virology, Medical Microbiology and Infection at a Glance

Important Course Requirements

Nothing particular

Note(s) to Students

The number of students joining the programs will be limited to 10.

Lecture No	415081				
Subject title	Lecture of Immunology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

In a small group, with extensive discussion and bench works.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Start reading any chapter of your interest in the textbooks listed below.

Reference Materials

1. Immunobiology 9th Edition (2016),Garland Science
2. Cellular and Molecular Immunology 9th Edition (2017), Elsevier

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415082				
Subject title	Practice of Immunology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

In a small group, with extensive discussion and bench works.

Course Outline

Goals/Outline:

Access to and analysis of the database related to immunology, including DNA and protein sequences, and their 3D-structure.

Grading System

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.

Prerequisite Reading

Start reading any chapter of your interest in the textbooks listed below.

Reference Materials

1. Immunobiology 9th Edition (2016),Garland Science
2. Cellular and Molecular Immunology 9th Edition (2017), Elsevier

Important Course Requirements

None

Note(s) to Students

None

Lecture No	415083				
Subject title	Laboratory practice of Immunology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Office and laboratory at the M & D tower 17 th floor.

Course Purpose and Outline

Our research area is immunology based on molecular biology. Abnormalities of immune system cause various pathological conditions such as tumors, autoimmune diseases, and immunodeficiency. 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 development of disorder and develop immunological therapeutics.

Course Objective(s)

The goal of our research is the understanding disease mechanisms and the development of therapeutic strategies. In order to conduct experiments of this area, students will be trained for tissue culture, immunological methods, molecular biological methods, and handling materials.

Lecture Style

Personal instruction by the supervisor, and total discussion at a seminar.

Course Outline

From the perspective of innate immune cell diversity, we elucidate the relationship between immunity and pathology and develop treatments.

research content

1. Basic and applied research on innate immunity
2. Research on diversity of immune cells including macrophages and research on their roles
3. Search for genes involved in the onset and exacerbation of diseases, and drug discovery research by regulating their expression
4. Elucidation of crosstalk between immune system and non immune system.

Grading System

Evaluation will be made based on the attendance and performance at the seminar and practice.

Prerequisite Reading

Basic immunological knowledge is required.

Important Course Requirements

The students make presentation on their study periodically in seminars.

Lecture No	041309				
Subject title	Lecture of Biodefense Research			Subject ID	
Instructors	樗木 俊聡, 佐藤 卓, 金山 剛士[OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced upon inquiry.

Course Purpose and Outline

The aim of this course is to understandthe 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.

Course Objective(s)

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.

Lecture Style

Small group or individual training/lesson will be given.

Course Outline

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.

Grading System

Evaluating based on attendance, research reports, and discussion status at the course.

Prerequisite Reading

Basic understanding of immunology and stem cell biology is required before attending this course.

Reference Materials

Janeway's Immunobiology 8th edition

Important Course Requirements

None

Note(s) to Students

None

Email

OTEKI TOSHIAKI:ohteki.bre@mri.tmd.ac.jp

Instructor's Contact Information

OTEKI TOSHIAKI:After each class, please consult with the person in charge of each subject individually or by email with the person in charge of the subject.

Lecture No	041310				
Subject title	Practice of Biodefense Research			Subject ID	
Instructors	樗木 俊聡, 佐藤 卓, 金山 剛士[OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced upon inquiry.

Course Purpose and Outline

The aim of this course is to understandthe 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.

Course Objective(s)

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.

Lecture Style

Small group or individual training/lesson will be given.

Course Outline

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.

Grading System

Evaluating based on attendance, research reports, and discussion status at the course.

Prerequisite Reading

Basic understanding of immunology and stem cell biology is required before attending this course.

Reference Materials

Janeway's Immunobiology 8th edition

Important Course Requirements

None

Note(s) to Students

None

Email

OTEKI TOSHIAKI:ohteki.bre@mri.tmd.ac.jp

Instructor's Contact Information

OTEKI TOSHIAKI:After each class, please consult with the person in charge of each subject individually or by email with the person in charge of the subject.

Lecture No	041311				
Subject title	Laboratory practice of Biodefense Research			**Subject ID**	
Instructors	樗木 俊聡, 佐藤 卓, 金山 剛士[OTEKI TOSHIAKI, SATOU Taku, KANAYAMA Masashi]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

To be announced upon inquiry.

Course Purpose and Outline

The aim of this course is to understandthe 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.

Course Objective(s)

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.

Lecture Style

Small group or individual training/lesson will be given.

Course Outline

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.

Grading System

Evaluating based on attendance, research reports, and discussion status at the course.

Prerequisite Reading

Basic understanding of immunology and stem cell biology is required before attending this course.

Reference Materials

Janeway's Immunobiology 8th edition

Important Course Requirements

None

Note(s) to Students

None

Email

OTEKI TOSHIAKI:ohteki.bre@mri.tmd.ac.jp

Instructor's Contact Information

OTEKI TOSHIAKI:After each class, please consult with the person in charge of each subject individually or by email with the person in charge of the subject.

Lecture No	041312				
Subject title	Lecture of Pathological Cell Biology			**Subject ID**	
Instructors	清水 重臣, 清水 則夫, 本田 真也[SHIMIZU SHIGEOMI, SHIMIZU NORIO, HONDA SHINYA]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Venue is changed depending on the program.　Please ask Instructors.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lecture is done by individual guidance or seminar for a few students.　Lab is done by individual guidance.

Course Outline

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.

Grading System

We evaluate the percentage of attendance at class. In some case, we set a report.

Prerequisite Reading

Students do not have to prepare for the class

TextBook

Molecular Biology of the Cell

Reference Materials

Molecular Biology of the Cell, Medical Virology

Important Course Requirements

nothing

Note(s) to Students

nothing

Email

SHIMIZU SHIGEOMI:shimizu.pcb@mri.tmd.ac.jp

Instructor's Contact Information

SHIMIZU SHIGEOMI:Wednesday 16:00–18：00 MD tower22floor Pathological Cell Biology Professor room

Lecture No	041313				
Subject title	Practice of Pathological Cell Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Venue is changed depending on the program.　Please ask Instructors.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lecture is done by individual guidance or seminar for a few students.　Lab is done by individual guidance.

Course Outline

Goals/outline:

The practice examines research papers about physiological and pathlogical 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.

Grading System

We evaluate the percentage of attendance at class. In some case, we set a report.

Prerequisite Reading

Students do not have to prepare for the class

TextBook

Molecular Biology of the Cell

Reference Materials

Molecular Biology of the Cell, Medical Virology

Important Course Requirements

nothing

Note(s) to Students

nothing

Lecture No	041314				
Subject title	Laboratory practice of Pathological Cell Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Venue is changed depending on the program.　Please ask Instructors.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Lecture is done by individual guidance or seminar for a few students.　Lab is done by individual guidance.

Course Outline

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.

Grading System

We evaluate the percentage of attendance at class. In some case, we set a report.

Prerequisite Reading

Students do not have to prepare for the class

TextBook

Molecular Biology of the Cell

Reference Materials

Molecular Biology of the Cell, Medical Virology

Important Course Requirements

nothing

Note(s) to Students

nothing

Lecture No	041315				
Subject title	Lecture of Lipid Biology			Subject ID	
Instructors	佐々木 雄彦, 佐々木 純子, 長谷川 純矢[SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English.

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D Tower 19F South, Department of Biochemical Pathophysiology/Lipid Biology

Course Purpose and Outline

This course will focus on the pathophysiological conditions emanate from dysregulation of cellular lipid metabolism.

Course Objective(s)

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.

Lecture Style

Lecture and small group discussion.

Course Outline

Goals/outline:

Upon completion of this course, students are expected to effectively:

1. Describe the chemical nature of the various classes of lipids and cellular membranes;
2. Discuss the synthesis/degradation/modification of fatty acids and complex lipids;
3. Describe the relationship between lipid metabolism and various diseases;
4. Understand the basic strategies for lipid biology (cell biological, biochemical, mass spectrometric analyses)

Grading System

A comprehensive evaluation: participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

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.

TextBook

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,斉藤, 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

Reference Materials

ガイトン生理学／ガイトン [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.

Important Course Requirements

Capable of communicating with lab members in English or Japanese language.

Reference URL

https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home

Email
SASAKI Takehiko:tsaspip@tmd.ac.jp
Instructor's Contact Information
SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959

Lecture No	041316				
Subject title	Practice of Lipid Biology			Subject ID	
Instructors	佐々木 雄彦, 佐々木 純子, 長谷川 純矢[SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English.

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D Tower 19F South, Department of Biochemical Pathophysiology/Lipid Biology

Course Purpose and Outline

This course will focus on the pathophysiological conditions emanate from dysregulation of cellular lipid metabolism.

Course Objective(s)

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.

Lecture Style

Lecture and small group discussion.

Course Outline

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.

Grading System

A comprehensive evaluation: participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

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.

TextBook

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,斉藤, 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

Reference Materials

ガイトン生理学／ガイトン [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.

Important Course Requirements

Capable of communicating with lab members in English or Japanese language.

Reference URL

https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home

Email

SASAKI Takehiko:tsaspip@tmd.ac.jp

Instructor's Contact Information

SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959

Lecture No	041317				
Subject title	Laboratory practice of Lipid Biology			**Subject ID**	
Instructors	佐々木 雄彦, 佐々木 純子, 長谷川 純矢[SASAKI Takehiko, SASAKI Junnko, HASEGAWA Junnya]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

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.

Course Purpose and Outline

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.

Course Objective(s)

Publishing an original scientific paper.

Course Outline

Experimental and research practice at the lab.

Grading System

A comprehensive evaluation.

Prerequisite Reading

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.

TextBook

Molecular Biology of the CELL (Garland Science)

Original research papers and review articles that we have published.

Reference URL

https://sites.google.com/view/sasaki-lab-mri-tmdu-english/home

Email

SASAKI Takehiko:tsaspip@tmd.ac.jp

Instructor's Contact Information

SASAKI Takehiko:Every Monday AM.10:00-PM.2:00 M&D tower 19F Room1959

Lecture No	041318				
Subject title	Lecture of Pediatrics and Developmental Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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.

Course Objective(s)

Learning ontogeny and development of human.

Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.

Lecture Style

Format: Small grouped seminar

Each student will be given an assignment.

The given assignments can be shared with 2-3 students.

Course Outline

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 congenital endocrinological diseases.

Pediatric Cardiology: Pulmonary hypertension

Neonatology: Pathological backgrounds of preterm and/or low birth weight newborns.

Nephrology: Pediatric Chronic Kidney diseases

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

Grading System

Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.

Prerequisite Reading

Basic approaches to pediatric medicine and molecular cellular biology.

TextBook

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

Important Course Requirements

None

Note(s) to Students

Guidance and instruction can be done in English.

Lecture No	041319				
Subject title	Practice of Pediatrics and Developmental Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

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.

Course Purpose and Outline

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.

Course Objective(s)

Learning ontogeny and development of human.

Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.

Lecture Style

Format: Small grouped seminar

Each student will be given an assignment.

The given assignments can be shared with 2-3 students.

Course Outline

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

(Due to pandemic of the coronavirus, the lectures will be held on web, and the format of the lecture will be notified timely.)

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 Thrusday, 7:30-9:00PM)

Grading System

Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.

Prerequisite Reading

Basic approaches to practice of pediatrics and molecular cellular biology.

TextBook

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

Important Course Requirements

None

Note(s) to Students

Guidance and instruction can be done in English.

Lecture No	041320				
Subject title	Laboratory practice of Pediatrics and Developmental Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Research meeting and small discussions with PI are held in postgraduate seminar room in Level 9 of M&D tower.

The room of the lab meetings and other seminars are not fixed and will be timely announced.

Course Purpose and Outline

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.

Course Objective(s)

Learning ontogeny and development of human.

Understanding the etiology of diseases from the aspects of molecular, cellular, biological, and genetic approach.

Lecture Style

Format: Small grouped seminar

Each student will be given an assignment.

The given assignments can be shared with 2–3 students.

Course Outline

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.

Grading System

Students will be assessed by performances on research work, presentations skills at the lab meeting and attendance for seminars.

Prerequisite Reading

Basic approaches to practice of pediatrics and molecular cellular biology.

TextBook

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

Important Course Requirements

None

Note(s) to Students

Guidance and instruction can be done in English.

Lecture No	041321				
Subject title	Lecture of Rheumatology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Please contact the instructor in charge before attending the class.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group meeting

Course Outline

Goals/outline:

Understanding molecular and cellular pathology and treatment of rheumatic diseases

Grading System

Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.

Prerequisite Reading

It is preferable for students to acquire the general knowledge of rheumatic diseases.

Reference Materials

Standard medical textbooks

Important Course Requirements

None

Note(s) to Students

10 students at maximum

Lecture No	041322				
Subject title	Practice of Rheumatology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Please contact the instructor in charge before attending the class.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group meeting

Course Outline

Goals/Outline:

Familiarizing how pathology of rheumatic diseases is investigated for development of new treatments.

Grading System

Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.

Prerequisite Reading

It is preferable for students to acquire the general knowledge of rheumatic diseases.

Reference Materials

Standard medical textbooks

Important Course Requirements

None

Note(s) to Students

10 students at maximum

Lecture No	041323				
Subject title	Laboratory practice of Rheumatology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Please contact the instructor in charge before attending the class.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group meeting

Course Outline

Goals/Outline:

Familiarizing how pathology of rheumatic diseases is investigated for development of new treatments.

Grading System

Comprehensive grading based on the participation in the research program and discussion, study progress, and conference presentation.

Prerequisite Reading

It is preferable for students to acquire the general knowledge of rheumatic diseases.

Reference Materials

Standard medical textbooks

Important Course Requirements

None

Note(s) to Students

10 students at maximum

Lecture No	041324				
Subject title	Lecture of Dermatology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

N/A

Course Purpose and Outline

To study the pathology, Imuunolodermatology, Physiology of the skin,　To study the mechanism of skin diseases

Course Objective(s)

To understand the pathogenesis of skin diseases

Lecture Style

Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.

Course Outline

Goals/outline:

To understand a structure, function, imuunological roles, biological roles of the skin

To understand the pathophysiological mechanism of skin diseases

Grading System

Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.

Prerequisite Reading

To understand the immunnology and pathology

Reference Materials

Lever's Histopathology of the skin, David E Elder, 2005.　Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003

Important Course Requirements

Nothing

Lecture No	041325				
Subject title	Practice of Dermatology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

N/A

Course Purpose and Outline

To study the pathology, Imuunolodermatology, Physiology of the skin, To study the mechanism of skin diseases

Course Objective(s)

To understand the pathogenesis of skin diseases

Lecture Style

Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.

Course Outline

Goals/Outline:

To practice how to make a diagnosis of skin diseases by clinical and pathological examination.

Grading System

Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.

Prerequisite Reading

To understand the immunnology and pathology

Reference Materials

Lever's Histopathology of the skin, David E Elder, 2005. Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003

Important Course Requirements

Nothing

Lecture No	041326				
Subject title	Laboratory practice of Dermatology			**Subject ID**	
Instructors	沖山 奈緒子[OKIYAMA NAOKO]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

N/A

Course Purpose and Outline

To study the pathology, Imuunolodermatology, Physiology of the skin, To study the mechanism of skin diseases

Course Objective(s)

To understand the pathogenesis of skin diseases

Lecture Style

Conducting research as a member of the laboratory. A small group meeting will be held periodically to have discussions with instructors.

Course Outline

Goals/Outline:

General:

Etiological and immunological mechanisms of cutaneous allergic responses.

Establishment of a potent therapeutic approach for treatment-resistant allergic skin diseases.

Research projects:

1. Biological significance of prostaglandin D2 and its receptors in skin inflammation.
2. Mechanisms of eosinophil and basophil infiltration to the skin.
3. Biosynthesis of prostanoids in basophils and contribution to skin diseases.
4. Therapeutic approach for atopic dermatitis with STAT6 siRNA.
5. Stable form of galectin-9 as a novel therapeutic tool for psoriasis.
6. Analysis of scratching behavior in mouse model of skin inflammation.
7. Development of potent therapeutic tools for a mouse model of angiosarcoma
8. Analysis of skin diseases by using iPS cells induced epidermal sheets

Grading System

Total grading score is to be assessed based on one's enthusiasm for science, experimental skills, and scientific quality of manuscript submitted for publication.

Prerequisite Reading

To understand the immunnology and pathology

Reference Materials

Lever's Histopathology of the skin, David E Elder, 2005. Fitzpatrick's Dermatology in general Medicine, IM Freedberg et al, 2003

Important Course Requirements

Nothing

Lecture No	041327				
Subject title	Lecture of NCCHD Child Health and Development			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)

Course Purpose and Outline

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.

Course Objective(s)

To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through gametic differentiation.

Lecture Style

Lectures are setting in small group discussion style

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Reference Materials

Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Important Course Requirements

Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.

Note(s) to Students

The documents such as English general remarks are distributed as needed.

Lecture No	041328				
Subject title	Practice of NCCHD Child Health and Development			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)

Course Purpose and Outline

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.

Course Objective(s)

To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through gametic differentiation.

Lecture Style

Lectures are setting in small group discussion style

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Reference Materials

Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Important Course Requirements

Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.

Note(s) to Students

The documents such as English general remarks are distributed as needed.

Lecture No	041329				
Subject title	Laboratory practice of NCCHD Child Health and Development			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

National Center for Child Health and Development, seminar rooms (2nd, 4th, 5th, 7th, 8th, 9th floors)

Course Purpose and Outline

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.

Course Objective(s)

To acquire practical knowledge based on the scientific and medical viewpoints encompassing human developmental biology through gametic differentiation.

Lecture Style

Lectures are setting in small group discussion style

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is recommended that you read through Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Reference Materials

Developmental Biology, Scott F. Gilbert. Sinauer Associates Inc.

Important Course Requirements

Lectures, seminars and meetings are carried out in Japanese, however discussion with English speakers is performed in English.

Note(s) to Students

The documents such as English general remarks are distributed as needed.

Lecture No	041330				
Subject title	Lecture of Human Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the human pathological methodology and research policy

Course Objective(s)

To explain the human pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学演習・人体病理学実習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Lecture No	041331				
Subject title	Practice of Human Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the pathological methodology and research policy

Course Objective(s)

To explain the human pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学特論・人体病理学実習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Lecture No	041332				
Subject title	Laboratory practice of Human Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the pathological methodology and research policy

Course Objective(s)

To explain the pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学特論・人体病理学演習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Lecture No	041333				
Subject title	Lecture of Physiology and Cell Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Department of Physiology and Cell Biology, M&D Tower, 17F or online

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group discussion

Course Outline

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.

Grading System

You will be evaluated based on your attendance rate for the lecture, practice, lab (80%) , and academic meetings and publications (20%), and also your attitude for scientific research.

Prerequisite Reading

You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on, if needed by reading "Principles of Neural Sciences" (Kandel), etc.

Reference Materials

カンデル神経科学／Eric R. Kandel [ほか] 編 ; Sarah Mack アート・エディター,Kandel, Eric R.,Schwartz, James H. (James Harris),Jessell, Thomas M.,Siegelbaum, Steven,Hudspeth, A. James,Mack, Sarah,金澤, 一郎,宮下, 保司,岡野, 栄之,和田, 圭司,加藤, 総夫(医学),入來, 篤史, 藤田, 一郎,伊佐, 正,定藤, 規弘,大隅, 典子,笠井, 清登,:メディカル・サイエンス・インターナショナル, 2014

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

カラー版 ベアー コノーズ パラディーソ 神経科学 脳の探求 改訂版／マーク・F・ベアー 著・文・その他,バリー・W・コノーズ 著・文・その他,マイケル・A・パラディーソ 著・文・その他,藤井 聡 監修,藤井 聡 翻訳,マーク・F・ベアー,バリー・W・コノーズ,マイケル・A・パラディーソ,藤井 聡,:西村書店, 2021-01-15

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041334				
Subject title	Practice of Physiology and Cell Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Physiology and Cell Biology, M&D Tower, 17F or online

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group discussion

Course Outline

Participants will laern 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.

Grading System

You will be evaluated based on your attendance rate for the lecture, practice, lab, and academic meetings, and your attitude for scientific research.

Prerequisite Reading

You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on.

Reference Materials

カンデル神経科学／Eric R. Kandel [ほか] 編 ; Sarah Mack アート・エディター,Kandel, Eric R.,Schwartz, James H. (James Harris),Jessell, Thomas M.,Siegelbaum, Steven,Hudspeth, A. James,Mack, Sarah,金澤, 一郎,宮下, 保司,岡野, 栄之,和田, 圭司,加藤, 総夫(医学),入來, 篤史, 藤田, 一郎,伊佐, 正,定藤, 規弘,大隅, 典子,笠井, 清登,:メディカル・サイエンス・インターナショナル, 2014

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

カラー版 ベアー コノーズ パラディーソ 神経科学 脳の探求 改訂版／マーク・F・ベアー 著・文・その他,バリー・W・コノーズ 著・文・その他,マイケル・A・パラディーソ 著・文・その他,藤井 聡 監修,藤井 聡 翻訳,マーク・F・ベアー,バリー・W・コノーズ,マイケル・A・パラディーソ,藤井 聡,:西村書店, 2021-01-15

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041335				
Subject title	Laboratory practice of Physiology and Cell Biology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Physiology and Cell Biology, M&D Tower, 17F or online

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group discussion

Course Outline

You can join our research team and learn various experimental techniques including neurophysiology, animal psychology, computational neuroscience and so on.

Grading System

You will be evaluated based on your attendance rate for the lecture, practice, lab, and academic meetings, and your attitude for scientific research.

Prerequisite Reading

You are recommended to improve your knowledge about neurophysiology, neuroscience, molecular biology and so on.

Reference Materials

カンデル神経科学／Eric R. Kandel [ほか] 編 ; Sarah Mack アート・エディター,Kandel, Eric R.,Schwartz, James H. (James Harris),Jessell, Thomas M.,Siegelbaum, Steven,Hudspeth, A. James,Mack, Sarah,金澤, 一郎,宮下, 保司,岡野, 栄之,和田, 圭司,加藤, 総夫(医学),入來, 篤史, 藤田, 一郎,伊佐, 正,定藤, 規弘,大隅, 典子,笠井, 清登,:メディカル・サイエンス・インターナショナル, 2014

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

カラー版 ベアー コノーズ パラディーソ 神経科学 脳の探求 改訂版／マーク・F・ベアー 著・文・その他,バリー・W・コノーズ 著・文・その他,マイケル・A・パラディーソ 著・文・その他,藤井 聡 監修,藤井 聡 翻訳,マーク・F・ベアー,バリー・W・コノーズ,マイケル・A・パラディーソ,藤井 聡,:西村書店, 2021-01-15

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041336				
Subject title	Lecture of Molecular Cellular Cardiology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

It will be held in seminar room in M&D tower, which will be announced in time.

Course Purpose and Outline

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.

Course Objective(s)

The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.

Lecture Style

In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.

Course Outline

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.

Grading System

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 asssessing grades.)

Prerequisite Reading

The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.

Reference Materials

N/A

Important Course Requirements

Communication skill in English　Strong motivation to perform research　Cooperativity with other lab. members

Lecture No	041337				
Subject title	Practice of Molecular Cellular Cardiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

It will be held in seminar room in M&D tower, which will be announced in time.

Course Purpose and Outline

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.

Course Objective(s)

The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.

Lecture Style

In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.

Course Outline

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.

Grading System

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 asssessing grades.)

Prerequisite Reading

The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.

Reference Materials

N/A

Important Course Requirements

Communication skill in English　Strong motivation to perform research　Cooperativity with other lab. members

Lecture No	041338				
Subject title	Laboratory practice of Molecular Cellular Cardiology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

It will be held in seminar room in M&D tower, which will be announced in time.

Course Purpose and Outline

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.

Course Objective(s)

The goal of this course is to understand basic physiology, pharmacology, and molecular biology of cardiovascular system and cardiovascular diseases.

Lecture Style

In general, it will be held with few attendances. We will encourage question and discussion to promote interaction between lecturer and attendances.

Course Outline

Goals/Outline:

Using multi-disciplinary approach including molecular, genetic, and electrophysiological techniques, we will study unproven important cardiovascular theme shown below.

Grading System

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 asssessing grades.)

Prerequisite Reading

The basic knowledge in molecular biology, and hopefully in cardiac physiology and pharmacology is required.

Reference Materials

N/A

Important Course Requirements

Communication skill in English　Strong motivation to perform research　Cooperativity with other lab. members

Lecture No	041342				
Subject title	Lecture of Stem Cell Regulation			Subject ID	
Instructors	田賀 哲也, 楢 康一, 室田 吉貴[TAGA TETSUYA, TABU KOICHI, MUROTA Yoshitaka]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Programs are set up for a small number of students for more intense discussion and in-depth participation.

Course 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.

Grading System

Grading will be undertaken based on lecture participation, performance, presentation, reports, and lab work execution.

Prerequisite Reading

Students should read in advance literature on stem cell regulation. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.

Reference Materials

Molecular Biology of the Cell, fifth edition. Garland Science. 2008.

StemBook. Harvard Stem Cell Institute. 2008-. (http://www.ncbi.nlm.nih.gov/books/NBK27044/)

Important Course Requirements

Participants are required to study on a voluntary basis.

Note(s) to Students

None.

Email

TAGA TETSUYA:taga.scr@mri.tmd.ac.jp

Instructor's Contact Information

TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)

Lecture No	041343				
Subject title	Practice of Stem Cell Regulation			Subject ID	
Instructors	田賀 哲也, 楠 康一, 室田 吉貴[TAGA TETSUYA, TABU KOICHI, MUROTA Yoshitaka]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Practice will be partially conducted in English.

Lecture place

The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Programs are set up for a small number of students for more intense discussion and in-depth participation.

Course 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 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.

Grading System

Grading will be undertaken based on practice participation, performance, presentation, reports, and lab work execution.

Prerequisite Reading

Students should read in advance literature on stem cell regulation. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.

Reference Materials

Molecular Biology of the Cell, fifth edition. Garland Science. 2008.

StemBook. Harvard Stem Cell Institute. 2008-. (http://www.ncbi.nlm.nih.gov/books/NBK27044/)

Important Course Requirements

Participants are required to study on a voluntary basis.

Note(s) to Students

None.

Email

TAGA TETSUYA:taga.scr@mri.tmd.ac.jp

Instructor's Contact Information

TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)

Lecture No	041344				
Subject title	Laboratory practice of Stem Cell Regulation			Subject ID	
Instructors	田賀 哲也, 楠 康一, 室田 吉貴[TAGA TETSUYA, TABU KOICHI, MUROTA Yoshitaka]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Laboratory practice will be partially conducted in English.

Lecture place

The venue should be confirmed by contacting instructors before attendance. It varies depending on the programs.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Programs are set up for a small number of students for more intense discussion and in-depth participation.

Course Outline

Each student will conduct independent research, under supervision of instructors, on regulatory mechanisms of either the hematopoietic or cancer stem cells. Other tissue stem cells can be studied 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.

Grading System

Grading will be undertaken based on laboratory practice participation, performance, presentation, reports, and lab work execution.

Prerequisite Reading

Students should read in advance literature on stem cell regulation. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in the Lectures and Practice.

Reference Materials

Molecular Biology of the Cell, fifth edition. Garland Science. 2008.

StemBook. Harvard Stem Cell Institute. 2008-. (http://www.ncbi.nlm.nih.gov/books/NBK27044/)

Important Course Requirements

Participants are required to study on a voluntary basis.

Note(s) to Students

None.

Email

TAGA TETSUYA:taga.scr@mri.tmd.ac.jp

Instructor's Contact Information

TAGA TETSUYA: 11:00 ~ 12:00 on every Monday (make an appointment by E-mail)

Lecture No	041351				
Subject title	Lecture of Respiratory Medicine			Subject ID	
Instructors	宮﨑 泰成[MIYAZAKI YASUNARI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D tower, north1303

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

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.

Course Outline

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.

Grading System

We evaluate the student by the contribution in the discussion, exercise, reseearch 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.

Prerequisite Reading

will instruct at any time if necessary.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

Students who have interest in pulmonary medicine are welcome to join us.

Email

miyazaki.pilm@tmd.ac.jp

Instructor's Contact Information

Every week Monday to Friday (weekday), AM.8.30-PM.5.30 (exit. 5950)

Profesor's office at MD Tower 13th Floor, Ward / Outpatient clinic in Respiratory Medicine

Lecture No	041352				
Subject title	Practice of Respiratory Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Check the location with the instructor before attending the lectures, because it varies from program to program.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

After reviewing a variety of pulmonary diseases and the latest topics, pathogenesis of each pulmonary disease will be discussed with an aggressive attitude.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Instructs you when necessary.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

Students who have an interest in pulmonary medicine are welcome to join us.

Lecture No	041353				
Subject title	Laboratory practice of Respiratory Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Check the place with your instructor before taking the course, as it will vary by program.

Course Purpose and Outline

Our department 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.

Course Objective(s)

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.

Lecture Style

After reviewing a variety of pulmonary diseases and the latest topics, the pathogenesis of each pulmonary disease will be discussed with an aggressive attitude.

Course Outline

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

Grading System

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.

Prerequisite Reading

The instructor will instruct as appropriate.

Reference Materials

None

Important Course Requirements

None

Note(s) to Students

Students who have an interest in pulmonary medicine are welcome to join us.

Lecture No	041354				
Subject title	Lecture of Gastroenterology and Hepatology			**Subject ID**	
Instructors	岡本 隆一, 根本 泰宏, 水谷 知裕, 三好 正人[OKAMOTO RYUICHI, NEMOTO YASUHIRO, MIZUTANI Tomohiro, MIYOSHI Masato]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology

Course Purpose and Outline

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 patogeneisis and problems about the liver diseases such as viral hepatitis, cirrhosis and hepatocelluar carcinoma is the purpose of this course.

Course Objective(s)

The objective of this course is to learn the basic sciense such as molecular biology, immunology, cancer biology and regenetive medicine for understanding the problems about G.I and liver disease. Moreover, it is to performe the examinaton for the elucidation of own study thema.

Lecture Style

Different with each course.

Course Outline

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

Grading System

Participation, discussion and attitude.

Prerequisite Reading

To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.

TextBook

Not specified. Books for molecular biology, immunology, clinical medicine.

Email

OKAMOTO RYUICHI:rokamoto.gast@tmd.ac.jp

Instructor's Contact Information

OKAMOTO RYUICHI:Monday, AM 10:00-14:00

Lecture No	041355				
Subject title	Practice of Gastroenterology and Hepatology			**Subject ID**	
Instructors	岡本 隆一, 根本 泰宏, 水谷 知裕, 三好 正人[OKAMOTO RYUICHI, NEMOTO YASUHIRO, MIZUTANI Tomohiro, MIYOSHI Masato]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology

Medical Hospital, Endoscopic room.

Course Purpose and Outline

The objective of this course is to learn the basic sciense such as molecular biology, immunology, cancer biology and regenetive medicine for understanding the problems about G.I and liver disease. Moreover, it is to performe the examinaton for the elucidation of own study thema.

Course Objective(s)

To cultivate the awareness of the issues that the subject of basic research is awaken from medical practice through learning the fundamental knowledge such as endoscopic technique and clinical information of gastroenterology.

Lecture Style

Clinical conference, Endoscopic examination, Abdominal echo examination

Course Outline

Clinical conference, Endoscopic examination, Abdominal echo examination

Grading System

Participation, discussion and attitude.

Prerequisite Reading

To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.

TextBook

Not specified. Books for molecular biology, immunology, clinical medicine

Email

OKAMOTO RYUICHI:rokamoto.gast@tmd.ac.jp

Instructor's Contact Information

OKAMOTO RYUICHI:Monday, AM 10:00-14:00

Lecture No	041356				
Subject title	Laboratory practice of Gastroenterology and Hepatology			**Subject ID**	
Instructors	岡本 隆一, 根本 泰宏, 水谷 知裕, 三好 正人[OKAMOTO RYUICHI, NEMOTO YASUHIRO, MIZUTANI Tomohiro, MIYOSHI Masato]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D Tower 14F, Laboratory room of Gastroenterology and Hepatology

Course Purpose and Outline

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 patogeneisis and problems about the liver diseases such as viral hepatitis, cirrhosis and hepatocelluar carcinoma is the purpose of this course.

Course Objective(s)

To get novel knowledge by basic research raised from clinical practice.

Lecture Style

Participation to research group and joint research.

Course Outline

Mucosal immunology, Inflammatory related carcinogenesis

Digestive regeneration

Hepatitis / HCC

Liver regeneration

Grading System

Participation, discussion and attitude.

Prerequisite Reading

To learn the basic knowledge about gastroenterology. To read the previously published papers of this laboratory.

TextBook

Not specified. Books for molecular biology, immunology, clinical medicine

Email

OKAMOTO RYUICHI:rokamoto.gast@tmd.ac.jp

Instructor's Contact Information

OKAMOTO RYUICHI:Monday, AM 10:00–14:00

Lecture No	041357				
Subject title	Lecture of Specialized Surgeries			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room

Course Purpose and Outline

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.

Course Objective(s)

1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and ascess 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.

Lecture Style

To improve the ability of presentation and comunication, enough opportunities of presentation and discussion are set.

Course Outline

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.

Grading System

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.

Prerequisite Reading

No

Reference Materials

No

Important Course Requirements

No

Lecture No	041358				
Subject title	Practice of Specialized Surgeries			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room

Course Purpose and Outline

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.

Course Objective(s)

1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and ascess 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.

Lecture Style

To improve the ability of presentation and comunication, enough opportunities of presentation and discussion are set.

Course Outline

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.

Grading System

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.

Prerequisite Reading

No

Reference Materials

No

Important Course Requirements

No

Lecture No	041359				
Subject title	Laboratory practice of Specialized Surgeries			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Operative Conference, B-5 conference room; Clinical Conference, A-9 conference room

Course Purpose and Outline

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.

Course Objective(s)

1) To make the treatment strategy for colorectal and breast cancer. 2) To keep and ascess 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.

Lecture Style

To improve the ability of presentation and comunication, enough opportunities of presentation and discussion are set.

Course Outline

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.

Grading System

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.

Prerequisite Reading

No

Reference Materials

No

Important Course Requirements

No

Lecture No	041360				
Subject title	Lecture of Cardiovascular Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

Appropriate location would be selected to study efficiently.

Course Purpose and Outline

The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine

Course Objective(s)

The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.

Lecture Style

Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is necesarry for our sudents to have essential knowledge regarding biology and medicine.

Note(s) to Students

Please contact us before subscription.

Lecture No	041361				
Subject title	Practice of Cardiovascular Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Same classes are offered in English on different schedules.

Lecture place

Appropriate location would be selected to study efficiently.

Course Purpose and Outline

The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine.

Course Objective(s)

The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.

Lecture Style

Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is necesarry for our sudents to have essential knowledge regarding biology and medicine.

Important Course Requirements

None.

Note(s) to Students

Please contact us before subscription.

Lecture No	041362				
Subject title	Laboratory practice of Cardiovascular Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Same classes are offered in English on different schedules.					

Lecture place

Appropriate location would be selected to study efficiently.

Course Purpose and Outline

The major purpose of our course is to educate state-of art as well as fundamental literacy of clinical and experimental cardiovascular medicine.

Course Objective(s)

The primary objective of our course is to enable our students to learn the latest knowledge and clinical skills of cardiovascular medicine.

Lecture Style

Senior doctor coaches student individually as the best way in any case. We offer the student both clinical research and basic investigation.

Course Outline

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.

Grading System

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%

Prerequisite Reading

It is necesarry for our sudents to have essential knowledge regarding biology and medicine.

Important Course Requirements

None.

Note(s) to Students

Please contact us before subscription.

Lecture No	415072				
Subject title	Lecture of Anesthesiology Ⅰ			Subject ID	
Instructors	内田 篤治郎[UCHIDA TOKUJIRO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

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.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

TextBook

Miller's Anesthesia, 9 edition／Michael A. Gropper MD PhD：Elsevier, 2019

Reference Materials

Journals such as "Anesthesiology", "Anesthesia and Analgesia", "British Jouranal of Anaesthesia "

Lecture No	415073				
Subject title	Practice of Anesthesiology Ⅰ			Subject ID	
Instructors	内田 篤治郎[UCHIDA TOKUJIRO]				
Semester	YearLong 2023	Level	2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

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.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

Reference Materials

Journals such as ″Anesthesiology″, ″Anesthesia and Analgesia″, ″British Jouranal of Anaesthesia ″

Lecture No	415074				
Subject title	Laboratory practice of Anesthesiology Ⅰ			Subject ID	
Instructors	内田 篤治郎[UCHIDA TOKUJIRO]				
Semester	YearLong 2023	Level	3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

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.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

Reference Materials

Journals such as ″Anesthesiology″, ″Anesthesia and Analgesia″, ″British Jouranal of Anaesthesia ″

Lecture No	415075				
Subject title	Lecture of Anesthesiology Ⅱ			**Subject ID**	
Instructors	遠山 悟史[TOYAMA SATOSHI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

Goals/outline:

The objective of the department is to train educators and researchers or anesthesiologists with particular expertise and skills in the fields of pediatric and perinatal medicine. In recent years, anesthetic management in both fields has become highly specialized and important worldwide, and students will acquire the knowledge and skills to provide not only general anesthetic management but also systemic management of critically ill patients throughout the perioperative period.

In the special lecture, students will be guided in their studies to achieve the objectives of this field.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

TextBook

Miller's Anesthesia, 9 edition／Michael A. Gropper MD PhD：Elsevier, 2019

Smith's anesthesia for infants and children／[edited by] Peter J. Davis, Franklyn P. Cladis,Davis, Peter J.,Cladis, Franklyn P.,Smith, Robert Moors,：Elsevier, 2022

Chestnut's Obstetric Anesthesia: Principles and Practice／[edited by] David Chestnut, Cynthia Wong, MD, Lawrence Tsen, MD, Warwick D Ngan Kee, Yaakov Beilin, Jill Mhyre, Brian T. Bateman, Naveen Nathan：Elsevier, 2019

Reference Materials

Journals such as ″Anesthesiology″, ″Anesthesia and Analgesia″, ″British Jouranal of Anaesthesia ″

Lecture No	415076				
Subject title	Practice of Anesthesiology Ⅱ			**Subject ID**	
Instructors	遠山 悟史[TOYAMA SATOSHI]				
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

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.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

Reference Materials

Journals such as ″Anesthesiology″, ″Anesthesia and Analgesia″, ″British Jouranal of Anaesthesia ″

Lecture No	415077				
Subject title	Laboratory practice of Anesthesiology Ⅱ			**Subject ID**	
Instructors	遠山 悟史[TOYAMA SATOSHI]				
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Depends on the program. Contacts the tutor before the course.

Course Purpose and Outline

A comprehensive understanding of research trends, research methods, and analysis of results by introducing the latest papers published in prestigious journals related to anesthesiology.

Course Objective(s)

Understanding research background, basic knowledge and skills necessary for the research.

Lecture Style

Laboratory programs are conducted by the tutor.

Course Outline

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.

Grading System

A comprehensive evaluation by reports, participation to lectures, experimental researches and presentation of the research results.

Prerequisite Reading

Articlses related to the research projects

Reference Materials

Journals such as ″Anesthesiology″, ″Anesthesia and Analgesia″, ″British Jouranal of Anaesthesia ″

Lecture No	041369				
Subject title	Lecture of Cardiovascular Surgery			Subject ID	
Instructors	藤田 知之, 水野 友裕[FUJITA TOMOYUKI, MIZUNO TOMOHIRO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English. When an international student registers this subject for credits, this course is taught in English.

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

You should understand general etiology of cardiovascular disease and conventional surgical treatment for the disease, and then, you should bring up some factors that disturb the improvement of the surgical results or worsen the life expectancy after surgery.

Course Objective(s)

Bring up some factors that disturb the improvement of the surgical results or worsen the postoperative life expectancy after you understand general etiology of cardiovascular disease and conventional surgical treatment for the disease.

Lecture Style

Small-group guidance. Through small-group discussion, you should bring up a research theme and select the research technique or create a new surgical treatment. Then you should accomplish the research with the support of its group-discussion.

Course Outline

You can learn general etiology, diagnostic, and surgical anatomy of cardiovascular disease and the surgical treatment. Based on the knowledge, you bring up some unsolved problems to improve the surgical results.

Grading System

Comprehensive evaluation system

Prerequisite Reading

You have to learn about basic knowledge about the etiologies, pathophysiology, diagnosis, indications and surgical procedures of cardiovascular diseases in advance.

Reference Materials

Kirklin/Barratt-Boyes CARDIAC SURGERY
Edited by Nicholas Kouchoukos, Eugene Blackstone, Donald Doty, Frank Hanley, Robert Karp

Khonsari CARDIAC SURGERY: Safegards and Pitfalls in Operative Technique
Edited by Siavosh Khonsari

CARDIAC SURGERY IN THE ADULT
Edited by Laurence Cohn

Glenn's Thoracic and Cardiovascular Surgery
Appleton & Lange

Ischemic Heart Disease Surgical Management
Edited by Brian Buxton, O.H. Frazier, Stephen Westaby
Mosby

Off-Pump Coronary Artery Bypass
Editor: Tohru Asai, Masami Ochi, Hitoshi Yokoyama

Cardiac surgery　Recent advances and techniques

Edited by Narain Moorjani, Sunil K. Ohri, Andrew S.Wechsler
CRC press

Surgery for Congenital Heart Disease
J Stark, M de Level

Diagnosis and Management of Adult Congenital Heart Disease
Edited by Michael A. Gatzoulis, Gary D. Webb, Piers E.F. Daubeney
Elsevier Saunders

Cases in Adult congenital heart disease
Edited by Michael A. Gatzoulis, Gary D. Webb, Craig S. Broberg, Uemura Hideki
Churchil Livingstone

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041370				
Subject title	Practice of Cardiovascular Surgery			Subject ID	
Instructors	藤田 知之, 水野 友裕[FUJITA TOMOYUKI, MIZUNO TOMOHIRO]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

After you bring up some factors that disturb the improvement of the surgical results or worsen the life expectancy after surgery, you should plan a research to elucidate the unclarified issues you picked up.

Course Objective(s)

Bring up some factors that disturb the improvement of the surgical results or worsen the postoperative life expectancy. Plan a research to elucidate the unclarified issues you picked up.

Lecture Style

Small-group guidance. Through small-group discussion, you should bring up a research theme and select the research technique or create a new surgical treatment. Then you should accomplish the research with the support of its group-discussion.

Course Outline

You can learn image diagnostics of cardiovascular disease, pathophysiology of heart failure, and technique of extracorporeal circulatory support. You can plan a research to solve the problems you picked up.

Grading System

Comprehensive evaluation system

Prerequisite Reading

You have to learn about basic knowledge about the etiologies, pathophysiology, diagnosis, indications and surgical procedures of cardiovascular diseases in advance.

Reference Materials

Kirklin/Barratt-Boyes CARDIAC SURGERY
Edited by Nicholas Kouchoukos, Eugene Blackstone, Donald Doty, Frank Hanley, Robert Karp

Khonsari CARDIAC SURGERY: Safegards and Pitfalls in Operative Technique
Edited by Siavosh Khonsari

CARDIAC SURGERY IN THE ADULT
Edited by Laurence Cohn

Glenn's Thoracic and Cardiovascular Surgery
Appleton & Lange

Ischemic Heart Disease Surgical Management
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Elsevier Saunders

Cases in Adult congenital heart disease
Edited by Michael A. Gatzoulis, Gary D. Webb, Craig S. Broberg, Uemura Hideki
Churchil Livingstone

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041371				
Subject title	Laboratory practice of Cardiovascular Surgery			Subject ID	
Instructors	藤田 知之, 水野 友裕[FUJITA TOMOYUKI, MIZUNO TOMOHIRO]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

You should obtain the technique and ability to carry out the research you planned and solve the problems.

Course Objective(s)

Obtain the ability and technique to select the best method for data collection and statistical analysis and to accomplish the research.

Lecture Style

Small-group guidance. Through small-group discussion, you should bring up a research theme and select the research technique or create a new surgical treatment. Then you should accomplish the research with the support of its group-discussion.

Course Outline

You can obtain the ability and technique to accomplish your research such as statistical analysis and data collection. You can learn a surgical technique for research work such as heart transplantation model or extracorporeal circulatory support in animals. You can obtain the ability to accomplish the research and derive the conclusions.

Grading System

Comprehensive evaluation system

Prerequisite Reading

You have to learn about basic knowledge about the etiologies, pathophysiology, diagnosis, indications and surgical procedures of cardiovascular diseases in advance.

Reference Materials

Kirklin/Barratt-Boyes CARDIAC SURGERY
Edited by Nicholas Kouchoukos, Eugene Blackstone, Donald Doty, Frank Hanley, Robert Karp

Khonsari CARDIAC SURGERY: Safegards and Pitfalls in Operative Technique
Edited by Siavosh Khonsari

CARDIAC SURGERY IN THE ADULT
Edited by Laurence Cohn

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Cases in Adult congenital heart disease
Edited by Michael A. Gatzoulis, Gary D. Webb, Craig S. Broberg, Uemura Hideki
Churchil Livingstone

Important Course Requirements

N/A

Note(s) to Students

N/A

Lecture No	041372				
Subject title	Lecture of Nephrology			**Subject ID**	
Instructors	内田 信一[UCHIDA SHINICHI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

MD Tower 13th floor Department of Nephrology

Course Purpose and Outline

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.

Course Objective(s)

To understand the homeostatic actions in kidney and its dysregulations in disease states.

Lecture Style

Please refer to the teacher in charge of each program.

Course Outline

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.

Grading System

We give a grade from comprehensive standpoint based on attendance and research results.

Prerequisite Reading

You should know the basic kidney structures and functions.

Reference Materials

Renal Pathophysiology The essenrial. Lippincott Williams & Wilkins

Brenner & Recor's The Kidney. Elsevier.

Important Course Requirements

nothing special

Lecture No	041373				
Subject title	Practice of Nephrology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

MD Tower 13th floor Department of Nephrology

Course Purpose and Outline

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.

Course Objective(s)

To understand the homeostatic actions in kidney and its dysregulations in disease states.

Lecture Style

Please refer to the teacher in charge of each program.

Course Outline

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.

Grading System

We give a grade from comprehensive standpoint based on attendance and research results.

Prerequisite Reading

You should know the basic kidney structures and functions.

Reference Materials

Renal Pathophysiology The essenrial. Lippincott Williams & Wilkins

Brenner & Recor's The Kidney. Elsevier.

Important Course Requirements

nothing special

Lecture No	041374				
Subject title	Laboratory practice of Nephrology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

MD Tower 13th floor Department of Nephrology

Course Purpose and Outline

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.

Course Objective(s)

To understand the homeostatic actions in kidney and its dysregulations in disease states.

Lecture Style

Please refer to the teacher in charge of each program.

Course Outline

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.

Grading System

We give a grade from comprehensive standpoint based on attendance and research results.

Prerequisite Reading

You should know the basic kidney structures and functions.

Reference Materials

Renal Pathophysiology The essenrial. Lippincott Williams & Wilkins

Brenner & Recor's The Kidney. Elsevier.

Important Course Requirements

nothing special

Lecture No	041375				
Subject title	Lecture of Comprehensive Reproductive Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese

Lecture place

Conference room on the 8th floor of the university hospital (building B)

Course Purpose and Outline

The course will help you to understand the physiological and pathological, physical and mental function at each life stage, including adolescent, reproductive, climacteric and geriatric ages.

Course Objective(s)

On completion of this lectures, students should be able to;

1) Explain the mechanism of menstruation, ovarian follicle development, fertilization and implantation

2) Explain about the maternal adaptation to pregnancy, fetal growth and feto-placental function

3) Explain about the anatomical structure of reproductive organs and mechanism responsible for the carcinogenesis

4) Explain about the changes in bone metabolism, endothelial function and brain function in aging.

Lecture Style

Lectures will be provided by the experts of reproductive endocrinology, perinatology, gynecologic oncology and women's health care.

Course Outline

Lecture 1. Reproductive endocrinology:

1) Endocrinological function of the hypothalamus, pituitary gland, ovaries and uterus

2) Physiology of reproduction and infertility

Lecture 2. Fetal and maternal medicine:

1) Physiology of maternal adaptation to pregnancy and fetal development

2) Pathology of maternal adaptation to pregnancy and fetal development

Lecture 3. Gynecologic oncology

1) Pathological characteristics of uterine, ovarian and tubal cancers

2) Mechanism of carcinogenesis, diagnosis and treatment

Lecture 4. Women's health care

1) Physiological ageing

2) Pathological ageing

Grading System

Grades will be assigned on the following criteria:

Class participation

Homework

Question and answers

Prerequisite Reading

Basic knowledge and clinical experience of reproductive endocrinology, perinatology, gynecologic endocrinology and women's medicine will be required.

Lecture No	041376				
Subject title	Practice of Comprehensive Reproductive Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Conference room on the 8th floor of the university hospital (building B)

Course Purpose and Outline

The course will help you to master the diagnostic and therapeutic skills of the diseases in gynecology and obstetrics.

Course Objective(s)

After taking this course, you will be able to:

1) Explain the artificial reproduction technology (ART) including follicular stimulation, oocyte pick up, insemination, gametocyte activation, freeze and thaw of embryo and embryo transfer

2) Master obstetrical management of fetus and mother during pregnancy and parturition

3) Understand diagnostic technique, therapy, histopathology and genomics of gynecologic cancers

4) Practice tailor made preventive and therapeutic medicine in women's clinic

Lecture Style

Weekly conference with the expert in each subspecialty field, such as infertility, fetal and maternal medicine, gynecologic oncology and women's health care.

Course Outline

Discussion about the diagnosis and therapeutic plan in the actual cases at the conference.

Grading System

Grades will be assigned on the following criteria:

Conferences participation

Homework

Question and answers

Prerequisite Reading

Basic knowledge and clinical experience of reproductive endocrinology, perinatology, gynecologic endocrinology and women's medicine will be required.

Medical doctors who have the certificate of obstetrics and gynecology specialty is desirable.

Lecture No	041377				
Subject title	Laboratory practice of Comprehensive Reproductive Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

Department of Obstetrics and Gynecology in Tokyo Medical and Dental hospital.

Laboratory of comprehensive reproductive medicine in M&D tower

Course Purpose and Outline

The course will help you to create novel preventive, diagnostic and therapeutic approach for the diseases in obstetrics and gynecology.

Course Objective(s)

After taking this course, you will be able to publish research report that will provide a new insight into obstetrics and gynecology.

Lecture Style

With the preceptor, you need to:

1) Find out the problems in current practice in obstetrics and gynecology

2) Discuss about the method to resolve such problems

3) Undertake experiments to resolve such problems

4) Write and publish the scientific articles

Course Outline

Reproductive endocrinology

1) Physiological and pathological metabolism of sex steroid hormone

2) Genomic function in spermatogenesis

3) Autophagy and lipophagy in oocytes

4) Quality assessment of oocyte and embryo

Fetal and maternal medicine

1) Fetal gene and environmental interaction of the mother

2) Maternal nutrition and fetal and placental growth

3) Maternal cerebral blood flow during pregnancy

4) Mechanism of maternal hemodynamic adaptation to pregnancy

5) Feto-maternal communication via micro RNA and exosome

Gynecologic oncology

1) Cancer growth and essential amino-acid

2) Genomic approach to clarify the mechanism of cancer metastasis

3) Novel diagnostic imaging technique

Women's health

1) Function of the osteoblasts and osteoclasts

2) Estrogens and arteriosclerosis

3) Age-related memory disorder and cerebral blood flow

4) Relationship between women's nutrition and climacteric symptoms

Grading System

Presentation about the progress of research at the monthly research conference

Prerequisite Reading

Basic knowledge and clinical experience of reproductive endocrinology, perinatology, gynecologic endocrinology and women's medicine will be

required.

Medical doctors who have the certificate of obstetrics and gynecology specialty is desirable.

Basic skills to accomplish the experiment is required.

Lecture No	041378				
Subject title	Lecture of Urology			Subject ID	
Instructors	藤井 靖久, 吉田 宗一郎[FUJII YASUHISA, YOSHIDA SOICHIRO]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					
Partial classes are taught in English					

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Our course objectives include;

1) to understand the pathophysioogy and means of diagnosis and treatment of various urological disorders and to appropliately diagnose, treat, and manage patients with these diseases by basic experiments or analysis of clinical data.

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.

Lecture Style

A small class in which the students will be trained though mutual discussion.

Course Outline

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.

Grading System

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 paticipation.

Prerequisite Reading

It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.

TextBook

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, http://www.uroweb.org/guidelines/online-guidelines/

Important Course Requirements

Nothing in particular

Note(s) to Students

Nothing in particular

Email

YOSHIDA SOICHIRO:Fujii Yasuhisa, E-mail y-fujii.uro@tmd.ac.jp
Instructor's Contact Information
YOSHIDA SOICHIRO:Medical office of the Urology department, MD tower 11F, AM. 9:00-PM. 5:00, Phone: 03-5803-5295

Lecture No	041379				
Subject title	Practice of Urology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Our course objectives include;

1) to understand the pathophysioogy and means of diagnosis and treatment of various urological disorders and to appropliately diagnose, treat, and manage patients with these diseases by basic experiments or analysis of clinical data.

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.

Lecture Style

A small class in which the students will be trained though mutual discussion.

Course Outline

Check with the teacher in charge for the program which is not specifically scheduled.

Grading System

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 paticipation.

Prerequisite Reading

It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.

TextBook

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:Elseview, 2020

European Association of Urology Guidelines, http://www.uroweb.org/guidelines/online-guidelines/

Relationship With Other Subjects

Nothing in particular

Important Course Requirements

Nothing in particular

Note(s) to Students

Nothing in particular

Lecture No	041380				
Subject title	Laboratory practice of Urology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

Our course objectives include;

1) to understand the pathophysioogy and means of diagnosis and treatment of various urological disorders and to appropliately diagnose, treat, and manage patients with these diseases by basic experiments or analysis of clinical data.

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.

Lecture Style

A small class in which the students will be trained though mutual discussion.

Course Outline

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

Grading System

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 paticipation.

Prerequisite Reading

It is preferred to acquire the basic knowledge of urologic diseases and basic skills of basic research before admission.

TextBook

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, http://www.uroweb.org/guidelines/online-guidelines/

Relationship With Other Subjects

Nothing in particular

Important Course Requirements

Nothing in particular

Note(s) to Students
Nothing in particular

Lecture No	041381				
Subject title	Lecture of Gastrointestinal Surgery			Subject ID	
Instructors	絹笠 祐介[KINUGASA Yuusuke]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Different venue depending on the specific program, mainly at our medical office

Course Purpose and Outline

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.

Course Objective(s)

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 gastointestinal 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.

Lecture Style

With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.

Course Outline

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.

Grading System

Grading is performed according to the attending to our lecture, conference and clinical practice. The contents of the research are also graded.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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.

Esophageal cancer practice guidelines 2017 edited by the Japan Esophageal Society: part 1. . Esophagus 2019,16:1–24.

Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo

Japanese Society for Cancer of the Colon and Rectum (JSCCR) Guidelines 2022 for the Treatment of Colorectal Cancer, 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.

Important Course Requirements

Nothing in particular

Note(s) to Students

Nothing in particular

Lecture No	041382				
Subject title	Practice of Gastrointestinal Surgery			Subject ID	
Instructors	絹笠 祐介[KINUGASA Yuusuke]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Different venue depending on the specific program, mainly at our medical office

Course Purpose and Outline

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.

Course Objective(s)

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 gastointestinal 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.

Lecture Style

With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.

Course Outline

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, Wendsday, 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.

Grading System

Grading is performed according to the attending to our lecture, conference and clinical practice. The contents of the research are also graded.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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.

Esophageal cancer practice guidelines 2017 edited by the Japan Esophageal Society: part 1. . Esophagus 2019,16:1–24.

Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo

Japanese Society for Cancer of the Colon and Rectum (JSCCR) Guidelines 2022 for the Treatment of Colorectal Cancer, 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.

Important Course Requirements

Nothing in particular

Note(s) to Students

Nothing in particular

Lecture No	041383				
Subject title	Laboratory practice of Gastrointestinal Surgery			Subject ID	
Instructors	絹笠 祐介[KINUGASA Yuusuke]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Different venue depending on the specific program, mainly at our medical office

Course Purpose and Outline

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.

Course Objective(s)

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 gastointestinal 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.

Lecture Style

With the instructors, clinical questions are discussed, presented, and finally contributed as the original paper.

Course Outline

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, Gastiric and Colo-rectal team

Grading System

Grading is performed according to the attending to our lecture, conference and clinical practice.　The contents of the research are also graded.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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.

Esophageal cancer practice guidelines 2017 edited by the Japan Esophageal Society: part 1. . Esophagus 2019,16:1-24.

Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo

Japanese Society for Cancer of the Colon and Rectum (JSCCR) Guidelines 2022 for the Treatment of Colorectal Cancer, 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.

Important Course Requirements

Nothing in particular

Note(s) to Students

Nothing in particular

Lecture No	041384				
Subject title	Lecture of Thoracic Surgery			**Subject ID**	
Instructors	大久保 憲一, 石橋 洋則[OKUBO KENICHI, ISHIBASHI HIRONORI]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

M&D tower, South S2060-2061

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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.

Grading System

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.

Prerequisite Reading

Needs for basic surgical approach in thoracic surgery

Reference Materials

Not specifically indicated

Important Course Requirements

None

Note(s) to Students

Students who have interest in thoracic surgery are welcome to join us.

Lecture No	041385				
Subject title	Practice of Thoracic Surgery			**Subject ID**	
Instructors	大久保 憲一, 石橋 洋則[OKUBO KENICHI, ISHIBASHI HIRONORI]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

M&D tower, South S2060-2061

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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.

Grading System

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.

Prerequisite Reading

Needs for basic surgical approach in thoracic surgery

Reference Materials

Not specifically indicated

Important Course Requirements

None

Note(s) to Students

Students who have interest in thoracic surgery are welcome to join us.

Lecture No	041386				
Subject title	Laboratory practice of Thoracic Surgery			Subject ID	
Instructors	大久保 憲一, 石橋 洋則[OKUBO KENICHI, ISHIBASHI HIRONORI]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

M&D tower, South S2060-2061

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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

Grading System

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.

Prerequisite Reading

Needs for basic surgical approach in thoracic surgery

Reference Materials

Not specifically indicated

Important Course Requirements

None

Note(s) to Students

Students who have interest in thoracic surgery are welcome to join us.

Lecture No	041387				
Subject title	Lecture of Igakuken Disease-oriented Molecular Biology			Subject ID	
Instructors	原 孝彦, 新井 誠, 長谷川 成人, 丹野 秀崇, 宮岡 佑一郎[Takahiko Hara, Makoto Arai, HASEGAWA Masato, TANNO Hidetaka, MIYAOKA Yuichiro]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Auditorium or meeting rooms at TMiMS. Please make a contact with the corresponding professor before starting each class.

Course Purpose and Outline

For the healthy aging, we must reduce the risk rate of cancers and diabetes. 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.

Course Objective(s)

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.

Lecture Style

All the classes will be interactive with small numbers of participants.

Course Outline

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, and amyotrophic lateral sclerosis. 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] Tuessday 16:00-18:00
[Makoto Arai] Monday 10:00-13:00
[Masato Hasegawa] Friday 14:00-16:00
[Yuichiro Miyaoka] Friday 14:00-16:00
[Takashi Shichita] Thursday 9:30-11:30
[Hidetaka Tanno] Wednesday 10:00-12:00

Grading System

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%).

Prerequisite Reading

The corresponding professor will individually advise participants according to their research plan and capacity.

Reference Materials

The corresponding will individually show appropriate references to participants.

Important Course Requirements

None.

Note(s) to Student

Lecture No	041388				
Subject title	Practice of Igakuken Disease-oriented Molecular Biology			Subject ID	
Instructors	原 孝彦, 新井 誠, 長谷川 成人, 丹野 秀崇, 宮岡 佑一郎[Takahiko Hara, Makoto Arai, HASEGAWA Masato, TANNO Hidetaka, MIYAOKA Yuichiro]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Auditorium or meeting rooms at TMiMS. Please make a contact with the corresponding professor before starting each class.

Course Purpose and Outline

For the healthy aging, we must reduce the risk rate of cancers and diabetes. 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.

Course Objective(s)

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.

Lecture Style

All the classes will be interactive with small numbers of participants.

Course Outline

Research progress report:

[Takahiko Hara] Thursday 16:00—18:00

[Makoto Arai] Monday 10:00—13:00

[Masato Hasegawa] Monday 16:00—18:00

[Yuichiro Miyaoka] Tuesday 12:00-14:00

[Takashi Shichita] Tuesday 9:30-11:30

[Hidetaka Tanno] Wednesday 10:00-12:00

Rehearsals and reports for conferences (1-2 per year)

Igakuken internal conference for young investigators (1 per year)

Grading System

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%).

Prerequisite Reading

The corresponding professor will individually advise participants according to their research plan and capacity.

Reference Materials

The corresponding will individually show appropriate references to participants.

Important Course Requirements

None.

Note(s) to Students

None.

Lecture No	041389				
Subject title	Laboratory practice of Igakuken Disease-oriented Molecular Biology			Subject ID	
Instructors	原 孝彦, 新井 誠, 長谷川 成人, 丹野 秀崇, 宮岡 佑一郎[Takahiko Hara, Makoto Arai, HASEGAWA Masato, TANNO Hidetaka, MIYAOKA Yuichiro]				
Semester	YearLong 2023	Level	2nd - 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Each laboratory at TMiMS.

Course Purpose and Outline

For the healthy aging, we must reduce the risk rate of cancers and diabetes. 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.

Course Objective(s)

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.

Lecture Style

All the classes will be interactive with small numbers of participants.

Course Outline

[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 knowlege 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.

[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.

[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.

[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.

[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.

[Hidetaka Tanno] By applying high-throughput single-cell technology to cancer patient-derived samples, we analyze the immune responses in

cancer patients at the single-cell level. We develop novel cancer therapeutics and diagnostic methods by utilizing the obtained results. We also create new technologies that are useful in immunology.
Grading System 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%).
Prerequisite Reading The corresponding professor will individually advise participants according to their research plan and capacity.
Reference Materials The corresponding will individually show appropriate references to participants.
Important Course Requirements None.
Note(s) to Students None.
Reference URL http://www.igakuken.or.jp/english/

Lecture No	041390				
Subject title	Lecture of Clinical Anatomy			**Subject ID**	
Instructors	秋田 恵一, 二村 昭元, 原田 理代, 室生 暁[AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Various rooms will be used depending on the program.　Please check by yourself or ask instructors before attending the course.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.

Course Outline

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.

Grading System

Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.

Prerequisite Reading

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.

Reference Materials

Gray's Anatomy for Students, 4th Edition, 2019, Elsevier,

Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins,

Principles of Development, 6th Edition, 2019, Oxford University Press

Important Course Requirements

none

Note(s) to Students

The number of students is not limited.

Lecture No	041391				
Subject title	Practice of Clinical Anatomy			**Subject ID**	
Instructors	秋田 恵一, 二村 昭元, 原田 理代, 室生 暁[AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Various rooms will be used depending on the program. Please check by yourself or ask instructors before attending the course.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.

Course Outline

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.

Grading System

Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.

Prerequisite Reading

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.

Reference Materials

Gray's Anatomy for Students, 4th Edition, 2019, Elsevier,

Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins,

Principles of Development, 6th Edition, 2019, Oxford University Press

Important Course Requirements

none

Note(s) to Students

The number of students is not limited.

Lecture No	041392				
Subject title	Laboratory practice of Clinical Anatomy			**Subject ID**	
Instructors	秋田 恵一, 二村 昭元, 原田 理代, 室生 暁[AKITA KEIICHI, NIMURA AKIMOTO, HARADA MASAYO, MUROU Satoru]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Various rooms will be used depending on the program. Please check by yourself or ask instructors before attending the course.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small group instruction will be mainly performed to facilitate free discussion between participants and instructors.

Course Outline

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.

Grading System

Performance will be generally evaluated considering the content of research reports, presentation status at the meeting or seminar, publication and so on.

Prerequisite Reading

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.

Reference Materials

Gray's Anatomy for Students, 4th Edition, 2019, Elsevier,

Langman's Medical Embryology, 14th Edition, 2019, Wolters Kluwer Lippincott Williams & Wilkins,

Principles of Development, 6th Edition, 2019, Oxford University Press

Important Course Requirements

none

Note(s) to Students

The number of students is not limited.

Lecture No	041393				
Subject title	Lecture of Systems BioMedicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Not determined yet.

Course Purpose and Outline

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.

Course Objective(s)

Subject1: The function of non-coding RNA in development and diseases will be examined.

Subject2: Genome dynamics during embryogenesis will be monitored by new technique.

Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.

Lecture Style

Concept and techniques of systems biomedicine will be introduced in the seminar series.

Course Outline

Analyze genome network for tissue development and pathogenesis of inflammation by combining multiple systems approaches.

Grading System

Individual's acquisition will be carefully evaluated by presentation, report and publication.

Prerequisite Reading

Basic knowledge of genes and molecular biology (at the level of high school biology) should be acquired through self-study of simple books.

Reference Materials

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,斉藤, 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

Essential 細胞生物学／BRUCE ALBERTS, KAREN HOPKIN, ALEXANDER JOHNSON, DAVID MORGAN, MARTIN RAFF, KEITH ROBERTS, PETER WALTER 著,中村桂子, 松原謙一, 榊佳之, 水島昇 監訳,青山聖子 [ほか] 訳,Alberts, Bruce,Hopkin, Karen,Johnson, Alexander D,Morgan, David Owen, 1958-,Raff, Martin C,Roberts, K. (Keith:南江堂, 2021

ヒトの分子遺伝学／トム・ストラッチャン, アンドリュー・リード著 ; 戸田達史, 井上聡, 松本直通監訳,Strachan, T.,Read, A. P. (Andrew),戸田, 達史,井上, 聡,松本, 直通,:メディカル・サイエンス・インターナショナル, 2021

Molecular Biology of the Cell W.W. Norton; 第 6 版 (2014/12/2)

Important Course Requirements

None

Note(s) to Students

The attendee may have to utilize adenovirus and mice samples.

Reference URL

https://www.tmdusystemsbiomedicine.com/

Lecture No	041394				
Subject title	Practice of Systems BioMedicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Not determined yet.

Course Purpose and Outline

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.

Course Objective(s)

Subject1: The function of non-coding RNA in development and diseases will be examined.

Subject2: Genome dynamics during embryogenesis will be monitored by new technique.

Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.

Lecture Style

Concept and techniques of systems biomedicine will be introduced in the seminar series.

Course Outline

Mircoarray, Cell-based high throughput screening, etc, will be utilized as critical method for systems biomedicine.

Grading System

Individual's acquisition will be carefully evaluated by presentation, report and publication.

Prerequisite Reading

Basic knowledge of genes and molecular biology (at the level of high school biology) should be acquired through self-study of simple books.

Reference Materials

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,斉藤, 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

Essential 細胞生物学／BRUCE ALBERTS, KAREN HOPKIN, ALEXANDER JOHNSON, DAVID MORGAN, MARTIN RAFF, KEITH ROBERTS, PETER WALTER 著,中村桂子, 松原謙一, 榊佳之, 水島昇 監訳,青山聖子 [ほか] 訳,Alberts, Bruce,Hopkin, Karen,Johnson, Alexander D,Morgan, David Owen, 1958-,Raff, Martin C,Roberts, K. (Keith:南江堂, 2021

ヒトの分子遺伝学／トム・ストラッチャン, アンドリュー・リード著 ; 戸田達史, 井上聡, 松本直通監訳,Strachan, T.,Read, A. P. (Andrew),戸田, 達史,井上, 聡,松本, 直通,:メディカル・サイエンス・インターナショナル, 2021

Molecular Biology of the Cell W.W. Norton; 第 6 版 (2014)

Important Course Requirements

None

Note(s) to Students

The attendee may have to utilize adenovirus and mice samples.

Reference URL

https://www.tmdusystemsbiomedicine.com/

Lecture No	041395				
Subject title	Laboratory practice of Systems BioMedicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Not determined yet.

Course Purpose and Outline

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.

Course Objective(s)

Subject1: The function of non-coding RNA in development and diseases will be examined.

Subject2: Genome dynamics during embryogenesis will be monitored by new technique.

Subject3: Novel systems approaches will be established and applied for developmental biology and medicine.

Lecture Style

Concept and techniques of systems biomedicine will be introduced in the seminar series.

Course Outline

Using our techniques, core molecular network for tissue development and inflammatory diseases will be examined.

Grading System

Individual's acquisition will be carefully evaluated by presentation, report and publication.

Prerequisite Reading

Basic knowledge of genes and molecular biology (at the level of high school biology) should be acquired through self-study of simple books.

Reference Materials

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,斉藤, 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

Essential 細胞生物学／BRUCE ALBERTS, KAREN HOPKIN, ALEXANDER JOHNSON, DAVID MORGAN, MARTIN RAFF, KEITH ROBERTS, PETER WALTER 著,中村桂子, 松原謙一, 榊佳之, 水島昇 監訳,青山聖子 [ほか] 訳,Alberts, Bruce,Hopkin, Karen,Johnson, Alexander D,Morgan, David Owen, 1958-,Raff, Martin C,Roberts, K. (Keith:南江堂, 2021

ヒトの分子遺伝学／トム・ストラッチャン, アンドリュー・リード著 ; 戸田達史, 井上聡, 松本直通監訳,Strachan, T.,Read, A. P. (Andrew),戸田, 達史,井上, 聡,松本, 直通,:メディカル・サイエンス・インターナショナル, 2021

Molecular Biology of the Cell W.W. Norton; 第 6 版 (2014/12/2)

Important Course Requirements

None

Note(s) to Students

The attendee may have to utilize adenovirus and mice samples.

Reference URL

https://www.tmdusystemsbiomedicine.com/

Lecture No	041396				
Subject title	Lecture of Comprehensive Pathology			**Subject ID**	
Instructors	倉田 盛人[KURATA MORITO]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the human pathological methodology and research policy

Course Objective(s)

To explain the human pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学演習・人体病理学実習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Email

kurata.pth2@tmd.ac.jp

Instructor's Contact Information

Tuesday: 2PM-5PM M&D tower 15F N

Lecture No	041397				
Subject title	Practice of Comprehensive Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the pathological methodology and research policy

Course Objective(s)

To explain the human pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学特論・人体病理学実習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Lecture No	041398				
Subject title	Laboratory practice of Comprehensive Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Department of Pathology, 15th floor, MD tower

Course Purpose and Outline

To understand the pathological methodology and research policy

Course Objective(s)

To explain the pathological methodology and research policy

Lecture Style

Education through meetings, conferences and seminars

Course Outline

Pathological methodology and research policy

Grading System

Interview and reports

Grading Rule

Interpretation of each step

Prerequisite Reading

Pre-reading of the references

TextBook

Robbins Basic Pathology, 10e (Robbins Pathology)

Vinay Kumar MBBS MD FRCPath, Abul K. Abbas MBBS

Relationship With Other Subjects

Related module: 人体病理学特論・人体病理学演習(theories of human pathology)

Important Course Requirements

Students are required to concentrate during meetings, conferences and seminars to deepen understanding of the contents.

Lecture No	041399				
Subject title	Lecture of Molecular Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D tower 18th floor

Course Purpose and Outline

To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients

Course Objective(s)

To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical application of cancer prevention, diagnosis and treatment

Lecture Style

Small group lesson

Course Outline

To understand the molecular mechanisms underlying carcinogenesis malignant progression for clinical appolication of cancer prevention, diagnosis and treatment.

Available programs:

Lecture: ad hoc

Special Lecture: ad hoc

Seminar/Journal Club: Every Thursday 16:00–17:00 (by Zoom)

Grading System

To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.

Prerequisite Reading

Composition Unit

Professor Shinji TANAKA

Junior Associate Professor Yoshimitsu AKIYAMA

Assistant Professor Shu SHIMADA, Megumi HATANO

TextBook

がん生物学イラストレイテッド = CANCER BIOLOGY ILLUSTRATED／渋谷正史, 湯浅保仁 編集,渋谷, 正史, 1944-,湯浅, 保仁,:羊土社, 2019

Lecture No	041400				
Subject title	Practice of Molecular Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D tower 18th floor

Course Purpose and Outline

To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients

Course Objective(s)

To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical application of cancer prevention, diagnosis and treatment

Lecture Style

Small group lesson

Course Outline

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: ad hoc

Cancer Clinical Conference: Every Wednesday 7:00-8:00 (by Zoom)

Grading System

To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.

Prerequisite Reading

Composition Unit

Professor Shinji TANAKA

Junior Associate Professor Yoshimitsu AKIYAMA

Assistant Professor Shu SHIMADA, Megumi HATANO

Reference Materials

がん生物学イラストレイテッド = CANCER BIOLOGY ILLUSTRATED／渋谷正史, 湯浅保仁 編集,渋谷, 正史, 1944-,湯浅, 保仁,:羊土社, 2019

Robert A. Weinberg: The biology of cancer. 2013, Garland Science.

Related original papers

Important Course Requirements

N/A

Lecture No	041401				
Subject title	Laboratory practice of Molecular Oncology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

M&D tower 18th floor

Course Purpose and Outline

To understand the molecular mechanisms underlying carcinogenesis and cancer progression in patients

Course Objective(s)

To understand the basic mechanisms underlying carcinogenesis and malignant progression for clinical appolication of cancer prevention, diagnosis and treatment

Lecture Style

Small group lesson

Course Outline

To learn the basic scientific techniques necessary for pursuing cancer research

PCR, RNA analysis, Western blotting, cell culture, DNA transfection, genome-editing technology

Grading System

To assess achievements in Lecture, Practice, Lab and Conference by reports and examinations.

Prerequisite Reading

Composition Unit

Professor Shinji TANAKA

Junior Associate Professor Yoshimitsu AKIYAMA

Assistant Professor Shu SHIMADA, Megumi HATANO

Reference Materials

がん生物学イラストレイテッド = CANCER BIOLOGY ILLUSTRATED／渋谷正史, 湯浅保仁 編集,渋谷, 正史, 1944-,湯浅, 保仁,:羊土社, 2019

Robert A. Weinberg: The biology of cancer. 2013, Garland Science.

Related original papers

Important Course Requirements

N/A

Lecture No	041402				
Subject title	Lecture of Surgical Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

B-5 floor Division of Surgical Pathology

Course Purpose and Outline

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 necesssary for the resolution of the problems.

Course Objective(s)

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.

Lecture Style

The pathological findings of each disease are presented with the photographs of practical cases and　morphological features as well as differential diagnosis are explained.

Course Outline

The pathological findings of autopsy cases, neoplasms of respiratory tract, brain, female genital organs, and skin, and non-neoplastic diseases of lung and kidney are resented and are discussed.

Grading System

The results are assessed according to the situation of participation to the lecture and conference and quality of the case presentation.

Prerequisite Reading

Textbooks of Surgical Pathology(Rosai and Ackerman's surgical pathology is recommended) should be read.

TextBook

外科病理学／深山正久, 森永正二郎編集主幹 ; 小田義直 [ほか] 編集,深山, 正久,森永, 正二郎,小田, 義直,坂元, 亨宇,松野, 吉宏,森谷, 卓也,:文光堂, 2020

Rosai and Ackerman's surgical pathology／John R. Goldblum... [et al.],Goldblum, John R,Lamp, Laura W.,McKenney, Jesse K.,Myers, Jeffrey L.,: Elsevier, 2018

Lecture No	041403				
Subject title	Practice of Surgical Pathology			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

B-5 floor Division of Surgical Pathology

Course Purpose and Outline

The goal is to acquire the practice of surgical pathology (how to diagnose a disease and prepare reports) and propose problems concerning to diagnosis and patho-physilogy of the diseases.

Course Objective(s)

Diagnose both neoplastic and non-neoplastic diseases and make a report according to the guidelines.

As to autopsy, excise each organ, pick up abnormal findings, and make a report based on pathological findings comprehensively.

Lecture Style

With practical cases of surgical specimens, cut and observe them, and make a report. The instructors review the report.

Perform an autopsy, observe each organs, and make a report. The adviser review the report. Then, present pathological findings and explain pathological diagnosis of the case at the autopsy conference.

Course Outline

The surgical lesson are held once a week. Ten cases of autopsies should be performed in a year.

Grading System

The results are assessed accoding to both the quantity and quality of the reports and presentation (50point). T

Prerequisite Reading

Textbooks of Surgical Pathology(Rosai and Ackerman's surgical pathology is recommended) should be read. Before performing a autopsy, participates in other cases of autopsies and learn how to excise and observe each organ.

TextBook

外科病理学／深山正久, 森永正二郎編集主幹 ; 小田義直 [ほか] 編集,深山, 正久,森永, 正二郎,小田, 義直,坂元, 亨宇,松野, 吉宏,森谷, 卓也,:文光堂, 2020

Rosai and Ackerman's surgical pathology／John R. Goldblum... [et al.],Goldblum, John R,Lamp, Laura W.,McKenney, Jesse K.,Myers, Jeffrey L.,: Elsevier, 2018

Lecture No	041404				
Subject title	Laboratory practice of Surgical Pathology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

B-5 floor Division of Surgical Pathology

Course Purpose and Outline

The goal is to acquire the various methods including morphological and molecular biological technologies to carry out diagnosis of the various diseases as well as research purposes.

Course Objective(s)

Acquire some of the technics among the immunohistochemistry, electron microscopy, PCR, DNA sequencing, and FISH.

Lecture Style

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.

Course Outline

Students should select more than one method listed bellow which they wish to learn.

1) Preparation of light microscopic specimens

2) Method of immunohistochemistry

3) Preparation and observation of electron microscopic specimens

4) DNA and RNA preparation from fresh and paraffin-embedded tissues and realtime-PCR analysis, and DNA sequencing

5) FISH analysis of paraffin-embedded specimens

Grading System

The results are assessed according to the situation of participation to the lectures.

Prerequisite Reading

It is very important to design your research and to know what kind of technics are necessary for your research.

TextBook

Diagnostic Immunohistochemistry／DJ DABBS：Elsevier, 2018

Lecture No	041405				
Subject title	Lecture of Experimental Animal Model for Human Disease			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Laboratory Animal Center (MD) and Room 7, 10th floor

Course Purpose and Outline

This course aims to provide students with a comprehensive understanding of the field of research using animal models of disease, and will explain how to plan animal experiments and basic analysis methods (morphology, molecular biology, and genetic approaches) from the perspectives of medicine, dentistry, and veterinary medicine.

Course Objective(s)

To understand the pathogenesis of disease phenotypes caused by genetic mutations and to acquire basic skills in the field of laboratory animal research.

Lecture Style

Conduct a lecture using PowerPoint.

Course Outline

Translational research (bridging basic and clinical research) requires not only research at the cellular level using stem cells (iPS cells and ES cells), but also research at the individual level using experimental animals (disease model animals). In this course, students will acquire the knowledge and skills required for this purpose.

Grading System

Evaluation will be based on participation in lectures, exercises, and research practice, as well as external presentations (conferences, papers) of research content.

Participation in lectures, exercises, and research practice: 70%.

External presentation of research (conferences, papers): 30%.

Prerequisite Reading

Basic biology and developmental biology should be understood.

TextBook

Moore's Human Embryology, 8th Edition (Medical and Dental Publishing)

Relationship With Other Subjects

Developmental and Regenerative Bioscience

Reference URL

https://www.tmd-cea.jp/eam/research

Lecture No	041406				
Subject title	Practice of Experimental Animal Model for Human Disease			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Laboratory Animal Center (MD) and Room 7, 10th floor

Course Purpose and Outline

Aiming at a comprehensive understanding of the field of research using animal models of disease, this course will explain how to plan animal experiments and basic analysis methods (morphology, molecular biology, and genetic approaches) from the perspectives of medicine, dentistry, and veterinary medicine.

Course Objective(s)

To understand the pathogenesis of disease phenotypes caused by genetic mutations and to acquire basic skills in the field of laboratory animal research.

Lecture Style

Advanced theory is conducted through small-group lectures, and laboratory exercises are conducted in a seminar format with small groups (5–6 students). Practical research is mainly conducted through experiments.

Course Outline

The progress of each student's research will be briefly reported and future research plans will be discussed. Oral presentations will be given every six months, taking into account findings in related fields. In addition, we will read original papers on related fields as needed and make presentations including interpretation of data and discussion. The content of presentations at participating conferences and symposia will be introduced, and students will gain an understanding of the overall trends and latest findings in life science research.

Translated with www.DeepL.com/Translator (free version)

Grading System

Evaluation will be based on participation in lectures, exercises, and research practice, as well as external presentations (conferences, papers) of research content.

Participation in lectures, exercises, and research practice: 70%.

External presentation of research (conferences, papers): 30%.

Prerequisite Reading

Basic biology and developmental biology should be understood.

TextBook

Moore's Human Embryology, 8th Edition (Medical and Dental Publishing)

Reference URL

https://www.tmd-cea.jp/eam/en/

Lecture No	041407				
Subject title	Laboratory practice of Experimental Animal Model for Human Disease			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Laboratory Animal Center (MD) and Room 7, 10th floor

Course Purpose and Outline

Aiming at a comprehensive understanding of the field of research using animal models of disease, this course will explain how to plan animal experiments and basic analysis methods (morphology, molecular biology, and genetic approaches) from the perspectives of medicine, dentistry, and veterinary medicine

Course Objective(s)

To understand the pathogenesis of disease phenotypes caused by genetic mutations and to acquire basic skills in the field of laboratory animal research.

Lecture Style

Advanced theory is conducted through small-group lectures, and laboratory exercises are conducted in a seminar format with small groups (5–6 students). Practical research is mainly conducted through experiments.

Course Outline

Experimental details

(1) Creation of genetically modified mice and molecular biological analysis of organogenesis using genetically modified mice

(2) Application of endoderm-determining gene SOX17 mutant mice as a disease model.

(3) Analysis of the molecular mechanism of implantation using implantation failure model mice

(4) Analysis of the mechanism of follicle maturation using a mouse model of premature ovarian insufficiency

Grading System

Evaluation will be based on participation in lectures, exercises, and research practice, as well as external presentations (conferences, papers) of research content.

Participation in lectures, exercises, and research practice: 70%.

External presentation of research (conferences, papers): 30%.

Prerequisite Reading

Basic biology and developmental biology should be understood.

TextBook

Moore's Human Embryology, 8th Edition (Medical and Dental Publishing)

Reference URL

https://www.tmd-cea.jp/eam/en/research

Lecture No	041408				
Subject title	Lecture of Signal Gene Regulation			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Seminar Room, 2F, Building 8 South

Course Purpose and Outline

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.

Course Objective(s)

Students will learn the basics in life sciences by understanding the regulation of signal transduction involved in cell proliferation, differentiation, and gene expression.

Lecture Style

Participatory classes, in small groups.

Course Outline

Students will understand the fundamentals of development, molecular biology, and biochemical experiments. This course also provides lectures for bioinformatics to proceed with the project.

Grading System

Comprehensive evaluation：Participation (80%) and discussion (20%).

Prerequisite Reading

You are recommended to improve your knowledge in molecular, developmental, and bone biology.

Reference Materials

None.

Important Course Requirements

None.

Note(s) to Students

None.

Lecture No	041409				
Subject title	Practice of Signal Gene Regulation			Subject ID	
Instructors	船戸　紀子[FUNATO NORIKO]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Seminar Room, 2F, Building 8 South.

Course Purpose and Outline

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.

Course Objective(s)

Students will learn the basics in life sciences by understanding the regulation of signal transduction involved in cell proliferation, differentiation, and gene expression.

Lecture Style

Participatory classes, in small groups.

Course Outline

Students will learn to handle recombinant DNA molecules and analyze the data obtained from experiments.

Grading System

Comprehensive evaluation：Participation (80%) and discussion (20%).

Prerequisite Reading

You are recommended to improve your knowledge in molecular, developmental, and bone biology.

Reference Materials

None.

Important Course Requirements

None.

Note(s) to Students

None.

Email

nfunato.gene@tmd.ac.jp

Instructor's Contact Information

M/W/F 10:00 AM–12:00 PM or by appointment

Faculty Office, 4F, Building 8 South

Lecture No	041410				
Subject title	Laboratory practice of Signal Gene Regulation			**Subject ID**	
Instructors	船戸　紀子[FUNATO NORIKO]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

Lab, 4F, Building 8 South

Course Purpose and Outline

Students will learn the fundamentals of development and molecular biology.

Topics include molecular genetics, cell proliferation, cell differentiation, transcription factors, and gene-engineered mice.

Course Objective(s)

Students will learn the craniofacial develoment by understanding the regulation of signal transduction and gene expression.

Lecture Style

Participatory classes, in small groups.

Course Outline

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.

Grading System

Comprehensive evaluation：Presentation and report (80%), and scientific activity (own research, seminar, meeting, etc.) (20%).

Prerequisite Reading

You are recommended to improve your knowledge in molecular, developmental, and bone biology.

Reference Materials

None.

Important Course Requirements

None.

Note(s) to Students

None.

Email

nfunato.gene@tmd.ac.jp

Instructor's Contact Information

M/W/F 10:00 AM-12:00 PM or by appointment

Faculty Office, 4F, Building 8 South

Lecture No	041411				
Subject title	Lecture of Biomedical Devices and Instrumentation			Subject ID	
Instructors	三林 浩二[MITSUBAYASHI KOJI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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)

Course Purpose and Outline

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"

Course Objective(s)

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.

Lecture Style

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.

Course Outline

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.

Grading System

The overall grading scheme is based on your participation and the final project.

Prerequisite Reading

Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training

Reference Materials

テレワーク社会を支えるリモートセンシング = Advanced remote sensing for supporting telework／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

「非接触」が拓く新しいバイタルモニタリング = Non-Contact Vital Signs Monitoring : 革新的な健康管理と医療・介護への応用／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

Chemical, gas, and biosensors for internet of things and related applications／edited by Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno,三林, 浩二,Niwa, Osamu. [丹羽修],Ueno, Yuko. [上野祐子],: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

ユビキタス・バイオセンシング : 健康モニタリング&日常ケアのための計測技術／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2006

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
Important Course Requirements None
Note(s) to Students Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.
Email MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp
Instructor's Contact Information MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21

Lecture No	041412				
Subject title	Practice of Biomedical Devices and Instrumentation			Subject ID	
Instructors	三林 浩二[MITSUBAYASHI KOJI]				
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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)

Course Purpose and Outline

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"

Course Objective(s)

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.

Lecture Style

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.

Course Outline

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.

Grading System

The overall grading scheme is based on your participation and the final project.

Prerequisite Reading

Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training

Reference Materials

テレワーク社会を支えるリモートセンシング = Advanced remote sensing for supporting telework／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

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Chemical, gas, and biosensors for internet of things and related applications／edited by Kohji Mitsubayashi, Osamu Niwa, Yuko Ueno,三林, 浩二,Niwa, Osamu. [丹羽修],Ueno, Yuko. [上野祐子],: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

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ユビキタス・バイオセンシング : 健康モニタリング&日常ケアのための計測技術／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2006

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Chemical Sensors and Biosensors: Fundamentals and Applications, F.G. Banica, Wiley, ISBN-13: 978-0470710678 Biosensors: Essentials, G. Evtugyn, Springer, ISBN-13: 978-3642402401
Important Course Requirements None
Note(s) to Students Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.
Email MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp
Instructor's Contact Information MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21

Lecture No	041413				
Subject title	Laboratory practice of Biomedical Devices and Instrumentation			Subject ID	
Instructors	三林 浩二[MITSUBAYASHI KOJI]				
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

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)

Course Purpose and Outline

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"

Course Objective(s)

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.

Lecture Style

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.

Course Outline

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.

Grading System

The overall grading scheme is based on your participation and the final project.

Prerequisite Reading

Basic knowledge of biochemistry and bioengineering, English skill, Basic PC skill for research training

Reference Materials

テレワーク社会を支えるリモートセンシング = Advanced remote sensing for supporting telework／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2021

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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

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ユビキタス・バイオセンシング : 健康モニタリング&日常ケアのための計測技術／三林浩二 監修,三林, 浩二,:シーエムシー出版, 2006

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Chemical Sensors and Biosensors: Fundamentals and Applications, F.G. Banica, Wiley, ISBN-13: 978-0470710678 Biosensors: Essentials, G. Evtugyn, Springer, ISBN-13: 978-3642402401
Important Course Requirements None
Note(s) to Students Welcome the students interested in biosensors and biomedical devices. Please contact the instructor.
Email MITSUBAYASHI KOJI:m.bdi@tmd.ac.jp
Instructor's Contact Information MITSUBAYASHI KOJI:Every Monday morning (11:00 AM to noon) at room No. 503B on 5 fl. at Building 21

Lecture No	415090				
Subject title	Lecture of Biofunction Research			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Department of Biofunction Research, Institute of Biomaterials and Bioengineering

http://www.tmd.ac.jp/i-mde/www/biofunctions/biofunctions-e.html

Course Purpose and Outline

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 stragety for their clinical application is also the subject or this course.

Course Objective(s)

To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.

Lecture Style

Small group

Course Outline

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.

Grading System

Assessment on the final examination or report

Prerequisite Reading

Please contact us

Reference Materials

Please contact us

Important Course Requirements

n.p.

Note(s) to Students

Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.

Lecture No	415091				
Subject title	Practice of Biofunction Research			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Department of Biofunction Research, Institute of Biomaterials and Bioengineering

http://www.tmd.ac.jp/i-mde/www/biofunctions/biofunctions-e.html

Course Purpose and Outline

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 stragety for their clinical application is also the subject or this course.

Course Objective(s)

To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.

Lecture Style

Small group

Course Outline

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.

Grading System

Assessment on the final examination or report

Prerequisite Reading

Please contact us

Reference Materials

Please contact us

Important Course Requirements

n.p.

Note(s) to Students

Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.

Lecture No	415092				
Subject title	Laboratory practice of Biofunction Research			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Department of Biofunction Research, Institute of Biomaterials and Bioengineering

http://www.tmd.ac.jp/i-mde/www/biofunctions/biofunctions-e.html

Course Purpose and Outline

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 stragety for their clinical application is also the subject or this course.

Course Objective(s)

To learn the interdisciplinary field of medical, dental, engineering, and pharmaceutical science.

Lecture Style

Small group

Course Outline

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.

Grading System

Assessment on the final examination or report

Prerequisite Reading

Please contact us

Reference Materials

Please contact us

Important Course Requirements

n.p.

Note(s) to Students

Our lab is composed of members from various research fields. Everyone is welcome as long as they are motivated.

Lecture No	415035				
Subject title	Lecture of Hematology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lecture place

As different rooms will be used for each program, contact the lecturer in charge beforehand.

Course Purpose and Outline

The purpose of this course is to understand the pathogenesis of hematological disorders, mainly malignancies, and to learn the diagnostic and therapeutic principles for these diseases. Students are also able to learn the methods of analyzing the cell biology and molecular mechanisms underlying the pathogenesis of hematological malignancies and the diagnostic methods.

Course Objective(s)

The objective of this course is to obtain basic skills to analyze the pathogenesis of hematological disorders, mainly malignancies, and to be able to make an appropriate diagnosis based on the findings.

Lecture Style

A small-group teaching system and discussions with the participants.

Course Outline

Normal functions and abnormalities of proto-oncogenes and intracellular signaling molecules that play important roles in tumorigenesis of hematological malignancies will be explained during the course. Diagnosis and therapy of hematological malignancies based on this knowledge will be also expounded.

Grading System

Comprehensively evaluated based on participation in each program. Publication of research works as well as presentation at academic meetings will be also evaluated for grading.

Prerequisite Reading

Standard reference books in hematology and basic cellular and molecular biology.

Important Course Requirements

Nothing particular.

Note(s) to Students

Practice and Lab courses will accept 10 students maximum.

Lecture No	415036				
Subject title	Practice of Hematology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lecture place

As different rooms will be used for each program, contact the lecturer in charge beforehand.

Course Purpose and Outline

The purpose of this course is to understand the pathogenesis of hematological disorders, mainly malignancies, and to learn the diagnostic and therapeutic principles for these diseases. Students are also able to learn the methods of analyzing the cell biology and molecular mechanisms underlying the pathogenesis of hematological malignancies and the diagnostic methods.

Course Objective(s)

The objective of this course is to obtain basic skills to analyze the pathogenesis of hematological disorders, mainly malignancies, and to be able to make an appropriate diagnosis based on the findings.

Lecture Style

A small-group teaching system and discussions with the participants.

Course Outline

Normal functions and abnormalities of proto-oncogenes and intracellular signaling molecules that play important roles in tumorigenesis of hematological malignancies will be explained during the course. Diagnosis and therapy of hematological malignancies based on this knowledge will be also expounded.

Grading System

Comprehensively evaluated based on participation in each program. Publication of research works as well as presentation at academic meetings will be also evaluated for grading.

Prerequisite Reading

Standard reference books in hematology and basic cellular and molecular biology.

Important Course Requirements

Nothing particular.

Note(s) to Students

Practice and Lab courses will accept 10 students maximum.

Lecture No	415037				
Subject title	Laboratory practice of Hematology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lecture place

As different rooms will be used for each program, contact the lecturer in charge beforehand.

Course Purpose and Outline

The purpose of this course is to understand the pathogenesis of hematological disorders, mainly malignancies, and to learn the diagnostic and therapeutic principles for these diseases. Students are also able to learn the methods of analyzing the cell biology and molecular mechanisms underlying the pathogenesis of hematological malignancies and the diagnostic methods.

Course Objective(s)

The objective of this course is to obtain basic skills to analyze the pathogenesis of hematological disorders, mainly malignancies, and to be able to make an appropriate diagnosis based on the findings.

Lecture Style

A small-group teaching system and discussions with the participants.

Course Outline

Normal functions and abnormalities of proto-oncogenes and intracellular signaling molecules that play important roles in tumorigenesis of hematological malignancies will be explained during the course. Diagnosis and therapy of hematological malignancies based on this knowledge will be also expounded.

Grading System

Comprehensively evaluated based on participation in each program. Publication of research works as well as presentation at academic meetings will be also evaluated for grading.

Prerequisite Reading

Standard reference books in hematology and basic cellular and molecular biology.

Important Course Requirements

Nothing particular.

Note(s) to Students

Practice and Lab courses will accept 10 students maximum.

Lecture No	041435				
Subject title	Lecture of Molecular Endocrinology and Metabolism			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

N/A

Course Purpose and Outline

This training program is designed to educate and establish 'physician-scientist' in the field of endocrinology and metabolism.

Course Objective(s)

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.

Lecture Style

Small-group seminar based on discussion with mentor.

Course Outline

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.

Grading System

Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.

Prerequisite Reading

Depending on the program, always check supervisor in advance.

Reference Materials

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 Williamas & Wilkins

Important Course Requirements

N/A

Lecture No	041436				
Subject title	Practice of Molecular Endocrinology and Metabolism			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

N/A

Course Purpose and Outline

This training program is designed to educate and establish 'physician-scientist' in the field of endocrinology and metabolism.

Course Objective(s)

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.

Lecture Style

Small-group seminar based on discussion with mentor.

Course Outline

Goals/Outline:

Our clinical training program provides for the practice through comprehensive inpatient and outpatient services in the area of endocrine and metabolic disorders.

Grading System

Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.

Prerequisite Reading

Depending on the program, always check supervisor in advance.

Reference Materials

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 Williamas & Wilkins

Important Course Requirements

N/A

Lecture No	041437				
Subject title	Laboratory practice of Molecular Endocrinology and Metabolism			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

N/A

Course Purpose and Outline

This training program is designed to educate and establish 'physician-scientist' in the field of endocrinology and metabolism.

Course Objective(s)

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.

Lecture Style

Small-group seminar based on discussion with mentor.

Course Outline

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.

Grading System

Comprehensive evaluation based on the participation and achievement in the lecture, practice, and lab.

Prerequisite Reading

Depending on the program, always check supervisor in advance.

Reference Materials

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 Williamas & Wilkins

Important Course Requirements

N/A

Lecture No	041438				
Subject title	Lecture of Hepatobiliary and Pancreatic Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

The graduates will understand various Heapto-Biliary-Pancreatic diseases and attain the ability to manage these diseasaes and the problems of patients, through clinical experiences and basic researches.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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.

Grading System

Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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

Important Course Requirements

Nothing in particular.

Lecture No	041439				
Subject title	Practice of Hepatobiliary and Pancreatic Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
Lectures will be conducted in English when foreign students registered.					

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

The graduates will understand various Heapto-Biliary-Pancreatic diseases and attain the ability to manage these diseasaes and the problems of patients, through clinical experiences and basic researches.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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.

Grading System

Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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

Important Course Requirements

Nothing in particular.

Lecture No	041440				
Subject title	Laboratory practice of Hepatobiliary and Pancreatic Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when foreign students registered.

Lecture place

Different venue depending on the specific program

Course Purpose and Outline

The graduates will understand various Heapto-Biliary-Pancreatic diseases and attain the ability to manage these diseasaes and the problems of patients, through clinical experiences and basic researches.

Course Objective(s)

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.

Lecture Style

Small-group guidance

Course Outline

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.

Grading System

Comprehensive evaluation system: attendance of lecture, remarks in the meetings, assessment of basic/clinical research, and number of presentation at national/international conference.

Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

Reference Materials

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

Important Course Requirements

Nothing in particular.

Lecture No	041441				
Subject title	Lecture of Orthopaedic and Spinal Surgery			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)

Course Purpose and Outline

The purpose of the course is to build the students' store of knowledge concerning bone and joint disorders and spinal disorders. The students are expected to plan and conduct experiments which will clarify the mechanisms underlying these disorders or will be valuable for developments of treatments.

Course Objective(s)

To build the ablity to dicover new quetsions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.

Lecture Style

We sentence you to small number of people education of independent participation type of a graduate student.

Course Outline

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.

Grading System

Attendance rate at each program (50%)

Progress of the research, research presentation at research meetings, research publication (50%)

Prerequisite Reading

Students should attend the journal clubs three times a week and review the papers read in the journal clubs.

TextBook

標準整形外科学 第 15 版／井樋 栄二 監修,津村 弘 監修,田中 栄 編集,高木 理彰 編集,松田 秀一 編集,井樋 栄二,津村 弘,田中 栄,高木 理彰,松田 秀一,:医学書院, 2023-02-06

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

Reference Materials

Students should read publications retrieved in accordance with their research themes.

Important Course Requirements

Not applicable

Note(s) to Students

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.

Lecture No	041442				
Subject title	Practice of Orthopaedic and Spinal Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)

Course Purpose and Outline

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.

Course Objective(s)

To build the ablity to dicover new quetsions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.

Lecture Style

We sentence you to small number of people education of independent participation type of a graduate student.

Course Outline

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.

Grading System

Attendance rate at each program (50%)

Progress of the research, research presentation at research meetings, research publication (50%)

Prerequisite Reading

Students should attend the journal clubs three times a week and review the papers read in the journal clubs.

TextBook

標準整形外科学 第 15 版／井樋 栄二 監修,津村 弘 監修,田中 栄 編集,高木 理彰 編集,松田 秀一 編集,井樋 栄二,津村 弘,田中 栄,高木 理彰,松田 秀一,:医学書院, 2023-02-06

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

Reference Materials

Students should read publications retrieved in accordance with their research themes.

Important Course Requirements

Not applicable

Note(s) to Students

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.

Lecture No	041443				
Subject title	Laboratory practice of Orthopaedic and Spinal Surgery			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Orthopaedic Surgery Office Room, Lab room (M&D tower 11F)

Course Purpose and Outline

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.

Course Objective(s)

To build the ablity to dicover new quetsions about bone and spine disorders and to develop the ability to create research plans and execute the experiments.

Lecture Style

We sentence you to small number of people education of independent participation type of a graduate student.

Course Outline

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.

Grading System

Attendance rate at each program (50%)

Progress of the research, research presentation at research meetings, research publication (50%)

Prerequisite Reading

Students should attend the journal clubs three times a week and review the papers read in the journal clubs.

TextBook

標準整形外科学 第 15 版／井樋 栄二 監修,津村 弘 監修,田中 栄 編集,高木 理彰 編集,松田 秀一 編集,井樋 栄二,津村 弘,田中 栄,高木 理彰,松田 秀一,: 医学書院, 2023-02-06

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

Reference Materials

Students should read publications retrieved in accordance with their research themes.

Important Course Requirements

Not applicable

Note(s) to Students

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.

Lecture No	041444				
Subject title	Lecture of Diagnostic Radiology and Nuclear Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					
Prerequisite Reading					
TextBook 医療系のための画像診断・核医学検査ベーシック／立石宇貴秀著:イーサイトヘルスケア, 2018					

Lecture No	041445				
Subject title	Practice of Diagnostic Radiology and Nuclear Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					
Prerequisite Reading					
TextBook 医療系のための画像診断・核医学検査ベーシック／立石宇貴秀著:イーサイトヘルスケア, 2018					

Lecture No	041446				
Subject title	Laboratory practice of Diagnostic Radiology and Nuclear Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					
Prerequisite Reading					
TextBook 医療系のための画像診断・核医学検査ベーシック／立石宇貴秀著:イーサイトヘルスケア, 2018					

Lecture No	041447				
Subject title	Lecture of Genomic Function and Diversity			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Department of Genomic Function and Diversity (M&D Tower 24F)

Course Purpose and Outline

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.

Course Objective(s)

To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.

Lecture Style

Lecture,discussion,and presentation.

Course Outline

Themes of seminars

・GWAS

・eQTL

・Integration of GWAS and eQTL data

・Use of other omics data (epigenome data etc)

Grading System

Participation (60%) and quality of presentation and discussion (40%)

Prerequisite Reading

Understanding basic statistics is essential.

TextBook

遺伝統計学入門／鎌谷直之著,鎌谷, 直之,:岩波書店, 2015

ゼロから実践する遺伝統計学セミナー : 疾患とゲノムを結びつける／岡田随象著,岡田, 随象,:羊土社, 2020

Reference Materials

次世代シークエンサー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

Lecture No	041448				
Subject title	Practice of Genomic Function and Diversity			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Department of Genomic Function and Diversity (M&D Tower 24F)

Course Purpose and Outline

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.

Course Objective(s)

To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.

Lecture Style

Lecture,discussion,and presentation.

Course Outline

Using publicly available data as well as analysis tools such as Plink,students learn how to analyse GWAS and eQTL data for disease genetics.

Grading System

Participation (60%) and quality of presentation and discussion (40%)

Prerequisite Reading

Understanding basic statistics is essential.

TextBook

遺伝統計学入門／鎌谷直之著,鎌谷, 直之,:岩波書店, 2015

ゼロから実践する遺伝統計学セミナー : 疾患とゲノムを結びつける／岡田随象著,岡田, 随象,:羊土社, 2020

Reference Materials

次世代シークエンサー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

Lecture No	041449				
Subject title	Laboratory practice of Genomic Function and Diversity			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

Department of Genomic Function and Diversity (M&D Tower 24F)

Course Purpose and Outline

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.

Course Objective(s)

To learn the structure, acquisition techniques, and analysis methods of omics data including GWAS, eQTL, and epigenome data.

Lecture Style

Personal lecture,discussion,and presentation.

Course Outline

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.

Grading System

Participation (60%) and quality of presentation and discussion (40%)

Prerequisite Reading

Understanding basic statistics is essential.

TextBook

遺伝統計学入門／鎌谷直之著,鎌谷, 直之,:岩波書店, 2015

ゼロから実践する遺伝統計学セミナー : 疾患とゲノムを結びつける／岡田随象著,岡田, 随象,:羊土社, 2020

Reference Materials

次世代シークエンサー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

Lecture No	041450				
Subject title	Lecture of Human Genetics and Disease Diversity			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

BioResource Research Center on the basement first floor of M&D tower

Course Purpose and Outline

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.

Course Objective(s)

1. Understand the relationship between genomic diversity and disease
2. Understand the current state of research of this field and its applications in medical practice

Lecture Style

・ Course lectures using powerpoint and/or small-group seminar-style lectures

Course Outline

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

Grading System

Evaluation will be made according to participation in the course lectures and external activities (conferences, papers) with weights placed in the following manner:

・ Participation in the course lectures: 80%

・ External activities: 20%

Prerequisite Reading

It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis.

TextBook

ヒトの分子遺伝学／トム・ストラッチャン，アンドリュー・リード著 ; 戸田達史，井上聡，松本直通監訳Strachan, T.,Read, A. P. (Andrew),戸田,達史,井上，聡,松本，直通,：メディカル・サイエンス・インターナショナル，2021

Human Molecular Genetics／Tom Strachan：Garland Science，2018

Relationship With Other Subjects

Lecture, Practice, and Laboratory practice of Human Genetics and Disease Diversity are triad. It is desirable to take all these three subjects.

Lecture No	041451				
Subject title	Practice of Human Genetics and Disease Diversity			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

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.

Course Purpose and Outline

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). Through "Lecture of Human Genetics and Disease Diversity", students understand above-mentioned points integratively, and at the same time, "Practice of Human Genetics and Disease Diversity" (this course), students begin applying this integrative approach for individual research.

Course Objective(s)

1. Acquire the basic techniques for DNA and mRNA analysis (wet laboratory techinques)
2. Learn the basic procedures for statistical analysis of genetic data (dry laboratory techniques)

Lecture Style

- Hands-on practicum using clinical samples (e.g. human DNA)
- In silico statistical analysis of genetic data

Course Outline

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

Grading System

Evaluation will be made according to participation in the course lectures and external activities (conferences, papers) with weights placed in the following
manner:

- Participation in the course lectures: 80%
- External activities: 20%

Prerequisite Reading

It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis

TextBook

ヒトの分子遺伝学／トム・ストラッチャン, アンドリュー・リード著 ; 戸田達史, 井上聡, 松本直通監訳Strachan, T.,Read, A. P. (Andrew),戸田, 達史,井上, 聡,松本, 直通.:メディカル・サイエンス・インターナショナル, 2021

Relationship With Other Subjects

Lecture, Practice, and Laboratory practice of Human Genetics and Disease Diversity are triad. It is desirable to take all these three subjects.

Lecture No	041452				
Subject title	Laboratory practice of Human Genetics and Disease Diversity			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Bioresource Research Center (BRC) in the M&D Tower B1F

Course Purpose and Outline

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.

Course Objective(s)

1. Acquire the applied techniques for DNA and mRNA analysis (wet laboratory techinques)
2. Learn the applied procedures for statistical analysis of genetic data (dry laboratory techniques)

Lecture Style

・ Hands-on practicum using clinical samples (e.g. human DNA)
・ In silico statistical analysis of genetic data

Course Outline

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

Grading System

Evaluation will be made according to participation in the practicum and external activities (conferences, papers) with weights placed in the following
manner:

・ Participation in the practicum: 80%
・ External activities: 20%

Prerequisite Reading

It is preferable that appropriate pre-requisite reading be performed as necessary to gain a basic familiarity with genomic analysis.

TextBook

ヒトの分子遺伝学／トム・ストラッチャン, アンドリュー・リード著 ; 戸田達史, 井上聡, 松本直通監訳Strachan, T.,Read, A. P. (Andrew),戸田, 達史,井上, 聡,松本, 直通.:メディカル・サイエンス・インターナショナル, 2021

Relationship With Other Subjects

Lecture, Practice, and Laboratory practice of Human Genetics and Disease Diversity are triad. It is desirable to take all these three subjects.

Lecture No	041453				
Subject title	Lecture of Applied Regenerative Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group class

Course Outline

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.

Grading System

Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

We introduce some papers according to your purposes.

Reference Materials

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.

Important Course Requirements

Participants are required to study on a voluntarly basis.

Note(s) to Students

For detailed information of what we do, please search our previous papers with PubMed. Key words are “Sekiya I” and “stem cells.”

Lecture No	041454				
Subject title	Practice of Applied Regenerative Medicine			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group class

Course Outline

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.

Grading System

Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

We introduce some papers according to your purposes.

Reference Materials

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.

Important Course Requirements

Participants are required to study on a voluntarly basis.

Note(s) to Students

For detailed information of what we do, please search our previous papers with PubMed. Key words are “Sekiya I” and “stem cells.”

Lecture No	041455				
Subject title	Laboratory practice of Applied Regenerative Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
Lectures will be partially conducted in English.					

Lecture place

Venues are different according to the program.

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Small-group class

Course Outline

Students are expected to master skills necessary for research and development of stem cell research and regenerative medicine by participating in a research group.

Grading System

Grading are performed in a comprehensive way based on the lecture, practice, and laboratory participation situation, reports about research, and conference presentations.

Prerequisite Reading

We introduce some papers according to your purposes.

Reference Materials

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.

Important Course Requirements

Participants are required to study on a voluntarly basis.

Note(s) to Students

For detailed information of what we do, please search our previous papers with PubMed. Key words are “Sekiya I” and “stem cells.”

Lecture No	415087				
Subject title	Lecture of Computational and Systems Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

M&D Tower, 23rd floor.

Course Purpose and Outline

Various digital life information such as genomic and gene expression data, live-cell imaging, etc., are utilized to learn the cutting-edge data science and artificial intelligence (AI) necessary to elucidate complex pathologies such as cancer, mental disorders, and viral infections. Furthermore, through investigating the latest research trends, pursuing individual research topics, and discussing with instructors, students develop a data-driven approach to decipher the relationships between pathologies and molecular/cellular interactions at both theoretical and practical levels, enabling them to conduct data science research in the field of biomedical sciences. Ultimately, this program aims to foster young researchers who can develop innovative data science research, break away from existing paradigms, and explore new research areas to unravel and overcome intractable diseases.

Course Objective(s)

- Attain essential expertise in mathematics, statistics, and informatics to procure the competence to innovate novel data analysis methodologies.
- Establish a strong groundwork in software and programming skills requisite for proficient data analysis.
- Gain data science proficiency, empowering one to collate and analyze vast and intricate life data, and accurately construe the findings utilizing the latest data analysis techniques.
- Cultivate research proficiency to recognize problem origins, establish objectives, and surmount challenges in analyzing diverse data types by devising research strategies.

Lecture Style

The class will be conducted in a seminar format.

Course Outline

The main focus of this course is to select and read innovative research papers related to omics analysis, imaging analysis, and drug discovery and structural analysis. Through this process, we will learn the data analysis methods used in these papers, as well as gain expertise in the mathematical, statistical, and informatics knowledge and skills that form the foundation of data science and artificial intelligence (AI).

Grading System

The proficiency and acquisition of analytical techniques, as well as the situation and earnest attitude towards discussions and debates, will be comprehensively assessed.

Prerequisite Reading

If teaching materials are distributed in advance, it is necessary to follow the instructions and engage in sufficient learning beforehand.

Important Course Requirements

Due to participant limitations, it is necessary to confirm with the instructor beforehand whether it is possible to enroll in the course.

Lecture No	415088				
Subject title	Practice of Computational and Systems Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

M&D Tower, 23rd floor.

Course Purpose and Outline

Various digital life information such as genomic and gene expression data, live-cell imaging, etc., are utilized to learn the cutting-edge data science and artificial intelligence (AI) necessary to elucidate complex pathologies such as cancer, mental disorders, and viral infections. Furthermore, through investigating the latest research trends, pursuing individual research topics, and discussing with instructors, students develop a data-driven approach to decipher the relationships between pathologies and molecular/cellular interactions at both theoretical and practical levels, enabling them to conduct data science research in the field of biomedical sciences. Ultimately, this program aims to foster young researchers who can develop innovative data science research, break away from existing paradigms, and explore new research areas to unravel and overcome intractable diseases.

Course Objective(s)

- Attain essential expertise in mathematics, statistics, and informatics to procure the competence to innovate novel data analysis methodologies.
- Establish a strong groundwork in software and programming skills requisite for proficient data analysis.
- Gain data science proficiency, empowering one to collate and analyze vast and intricate life data, and accurately construe the findings utilizing the latest data analysis techniques.
- Cultivate research proficiency to recognize problem origins, establish objectives, and surmount challenges in analyzing diverse data types by devising research strategies.

Lecture Style

The class will be conducted in a seminar format.

Course Outline

The main focus of this course is to select and read innovative research papers related to omics analysis, imaging analysis, and drug discovery/structural analysis, and to learn software programs implementing the algorithms used in these papers. In addition, the course aims to provide a foundation and skills in computer programming that are essential for practical data analysis.

Grading System

The assessment will be based on a comprehensive evaluation of the understanding and mastery of programming, performance in research practice and exercises, engagement in discussions and debates, and a sincere approach towards research.

Prerequisite Reading

If teaching materials are distributed in advance, it is necessary to follow the instructions and engage in sufficient learning beforehand.

Important Course Requirements

Due to participant limitations, it is necessary to confirm with the instructor beforehand whether it is possible to enroll in the course.

Lecture No	415089				
Subject title	Laboratory practice of Computational and Systems Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

M&D Tower, 23rd floor.

Course Purpose and Outline

Various digital life information such as genomic and gene expression data, live-cell imaging, etc., are utilized to learn the cutting-edge data science and artificial intelligence (AI) necessary to elucidate complex pathologies such as cancer, mental disorders, and viral infections. Furthermore, through investigating the latest research trends, pursuing individual research topics, and discussing with instructors, students develop a data-driven approach to decipher the relationships between pathologies and molecular/cellular interactions at both theoretical and practical levels, enabling them to conduct data science research in the field of biomedical sciences. Ultimately, this program aims to foster young researchers who can develop innovative data science research, break away from existing paradigms, and explore new research areas to unravel and overcome intractable diseases.

Course Objective(s)

- Attain essential expertise in mathematics, statistics, and informatics to procure the competence to innovate novel data analysis methodologies.
- Establish a strong groundwork in software and programming skills requisite for proficient data analysis.
- Gain data science proficiency, empowering one to collate and analyze vast and intricate life data, and accurately construe the findings utilizing the latest data analysis techniques.
- Cultivate research proficiency to recognize problem origins, establish objectives, and surmount challenges in analyzing diverse data types by devising research strategies.

Lecture Style

The class will be conducted in a seminar format.

Course Outline

Through the application of omics analysis, imaging analysis, and drug discovery and structural analysis, participants will develop methods for analyzing research questions and interpreting analysis results for given data. These efforts will be presented in seminars and discussed with faculty members to identify problem causes, set goals, and develop research strategies that lead to solutions. Additionally, participants will acquire skills in data science and artificial intelligence (AI) applications.

Grading System

Assess comprehensively the situations in research internships and exercises, discussions, and debates, as well as the sincere attitude towards research.

Prerequisite Reading

If teaching materials are distributed in advance, it is necessary to follow the instructions and engage in sufficient learning beforehand.

Important Course Requirements

Due to participant limitations, it is necessary to confirm with the instructor beforehand whether it is possible to enroll in the course.

Lecture No	041462				
Subject title	Lecture of Frontier Biomaterials			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Lectures will be partially conducted in English.

Lecture place

The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).

Course Purpose and Outline

This course deals with medical materials and devices. Designing medical devices for realizing bio-function and their application are introduced through recent outcome from advanced research field.

Course Objective(s)

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.

Lecture Style

Lecture using powerpoint

Course Outline

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.

Grading System

Grading is comprehensively judged from attendance and reports.
Participation to lecture: 50%
Report: 50%

Prerequisite Reading

Reading the books "Biomaterials" and "Biomaterials Science".

TextBook

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, 塙隆夫編著,田畑, 泰彦,塙, 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 [ほか] 著,山岡, 哲二,大矢, 裕一,中野, 貴由,石原, 一彦(工学),:東京化学同人, 2018

Reference Materials

ヴィジュアルでわかるバイオマテリアル／古薗勉, 岡田正弘編著,古薗, 勉,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

Note(s) to Students

If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp

Lecture No	041463				
Subject title	Practice of Frontier Biomaterials			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).

Course Purpose and Outline

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.

Course Objective(s)

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.

Lecture Style

Participants read English papers on advanced medical materials and explain them using powerpoint.

Course Outline

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.

Grading System

Grading is comprehensively judged from attendance and contents.

Prerequisite Reading

Reading the books "Biomaterials" and "Biomaterials Science".

TextBook

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, 塙隆夫編著,田畑, 泰彦,塙, 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

Reference Materials

ヴィジュアルでわかるバイオマテリアル／古薗勉, 岡田正弘 編著,古薗, 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

Note(s) to Students

If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp

Lecture No	041464				
Subject title	Laboratory practice of Frontier Biomaterials			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

The lecture room will be informed by the teacher. The student should contact the teacher (kimurat.mbme@tmd.ac.jp).

Course Purpose and Outline

This course deals with medical materials and devices. Designing medical devices for realizing bio-function and their application are researched.

Course Objective(s)

In this course, participants research for medical materials and present the research and publish it as the research paper.

Lecture Style

In this course, participants set and carry out the research, and write the research paper.

Course Outline

Participants research on medical materials.

Grading System

Grading is comprehensively judged from attendance and reports.

Prerequisite Reading

Reading the books "Biomaterials" and "Biomaterials Science".

TextBook

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, 塙隆夫編著,田畑, 泰彦,塙, 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

Reference Materials

ヴィジュアルでわかるバイオマテリアル／古薗勉, 岡田正弘 編著,古薗, 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

Note(s) to Students

If attending this class, please contact the teacher. Email: kimurat.mbme@tmd.ac.jp

Lecture No	041456				
Subject title	Lecture of JFCR Cancer Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

Lectures will be conducted in English when international students are registered.

Lecture place

The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo

Course Purpose and Outline

Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.

Course Objective(s)

Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.

Lecture Style

Contact with each instructor of interest.

Course Outline

Goals/outline:

Understanding the mechanisms of carcinogenesis and cancer progression. Studying the basics of personalized medicine for innovative cancer therapy.

Grading System

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.

Prerequisite Reading

Contact with each instructor of interest.

Reference Materials

Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.

Important Course Requirements

Contact with each instructor of interest.

Lecture No	041457				
Subject title	Practice of JFCR Cancer Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

Lectures will be conducted in English when international students are registered.

Lecture place

The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo

Course Purpose and Outline

Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.

Course Objective(s)

Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.

Lecture Style

Contact with each instructor of interest.

Course Outline

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.

Grading System

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.

Prerequisite Reading

Contact with each instructor of interest.

Reference Materials

Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.

Important Course Requirements

Contact with each instructor of interest.

Lecture No	041458				
Subject title	Laboratory practice of JFCR Cancer Biology			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

Lectures will be conducted in English when international students are registered.

Lecture place

The Cancer Institute and Cancer Chemotherapy Center of Japanese Foundation for Cancer Research 3-8-31 Ariake, Koto-ku, Tokyo

Course Purpose and Outline

Learning the mechanisms of cancer development and progression, and discussing the novel therapeutics and personalized medicine.

Course Objective(s)

Understanding the biological base of cancer and pathology of human cancer. Proposing possible therapeutic strategies based on molecular biology of cancer.

Lecture Style

Contact with each instructor of interest.

Course Outline

Goals/Outline:

1. To elucidate origins of chromosomal instability in malignancies, using current techniques in molecular and cellular biology (Hirota)
2. Innovate molecular target therapies based on biological and genetic mechanisms in cancer (Tomida).
3. Study the pathological and molecular characteristics of human malignant lymphoma. Search the novel cancer disease genes to utilize them as novel drag targets (Takeuchi).
4. 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)
5. Understanding the molecular mechanisms of cellular senescence and SASP in the cancer microenvironment. Investigation of senotherapies for cancer prevention and treatment (Takahashi).
6. Study inter-and intratumor cancer cell diversity and its biological significance by analyzing clinical specimens and patient-derived organoids at single-cell resolution. (Maruyama)

Grading System

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.

Prerequisite Reading

Contact with each instructor of interest.

Reference Materials

Robert A. Weinberg. The biology of cancer. Second ed. Garland Science.

Important Course Requirements

Contact with each instructor of interest.

Lecture No	041465				
Subject title	Lecture of Personalized Genomic Medicine for Health			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

Partial classes are taught in English.

Lecture place

To be announced

Course Purpose and Outline

Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad filed of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.

Course Objective(s)

（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 enviromental foctors underlying polygenic diseases. （3）Participants are also expected to establish ones own view and position for related gemonic fields such as pharmacogenomics and reproductive medicine.

Lecture Style

Lectures are given in a small group. Laboratory work is personalized.

Course Outline

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.

Grading System

Progress reports and the final research paper

Prerequisite Reading

Genomic Medicine

Reference Materials

Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社

Important Course Requirements

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.

Note(s) to Students

none

Lecture No	041466				
Subject title	Practice of Personalized Genomic Medicine for Health			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

To be announced

Course Purpose and Outline

Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad filed of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.

Course Objective(s)

（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 enviromental foctors underlying polygenic diseases. （3）Participants are also expected to establish ones own view and position for related gemonic fields such as pharmacogenomics and reproductive medicine.

Lecture Style

Lectures are given in a small group. Laboratory work is personalized.

Course Outline

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.

Grading System

Progress reports and the final research paper

Prerequisite Reading

Genomic Medicine

Reference Materials

Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社

Important Course Requirements

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.

Note(s) to Students

none

Lecture No	041467				
Subject title	Laboratory practice of Personalized Genomic Medicine for Health			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					
Partial classes are taught in English.					

Lecture place

To be announced

Course Purpose and Outline

Genetics are now widely applied in medicine. This course is provided to understand how genomics is applied in a broad filed of medicine. The scope of this course covers both monogenic disorders and polygenic diseases.

Course Objective(s)

（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 enviromental foctors underlying polygenic diseases. （3）Participants are also expected to establish ones own view and position for related gemonic fields such as pharmacogenomics and reproductive medicine.

Lecture Style

Lectures are given in a small group. Laboratory work is personalized.

Course Outline

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.

Grading System

Progress reports and the final research paper

Prerequisite Reading

Genomic Medicine

Reference Materials

Genetics and Genomics in Medicine. Tom Strachan. Medical Science International 社

Important Course Requirements

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.

Note(s) to Students

none

Lecture No	041468				
Subject title	Lecture of Organogenesis and Neogenesis			Subject ID	
Instructors	武部 貴則[TAKEBE TAKANORI]				
Semester	YearLong 2023	Level	1st year	Units	6
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Lecture place

Check with Lab instructors before taking the course, as class room will vary by program.

Course Purpose and Outline

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;

・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,

・Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and

・Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.

Course Objective(s)

To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;

・Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.

・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.

Lecture Style

Seminar class

Course Outline

・Read highly original and mature research papers, and discuss interpretations and issues via focusing on fields related to human biology

・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.

Program available:

・Journal club：At any time（We will share date and time with students via email）

・Special lecture：To be held once a year

Grading System

Grading will be comprehensively judged by taking all activities of the students into account such as quality of discussion, attitude and willingness.

Prerequisite Reading

Read the following books to acquire basic knowledge in advance.

Reference Materials

・Molecular Biology of the Cell (Garland Science)

・Developmental Biology (Sinauer Associates)

Important Course Requirements

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.

Note(s) to Students

A few students available.

Lecture No	041469				
Subject title	Practice of Organogenesis and Neogenesis			Subject ID	
Instructors					
Semester	YearLong 2023	Level	1st – 2nd year	Units	4
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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;

・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,

・Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and

・Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.

Course Objective(s)

To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;

・Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.

・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.

Lecture Style

Seminar class

Course Outline

・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.

Program available:

・Research meeting：Monday 9:00am~10:00am（If date and time is changed, we will email to students）

Grading System

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.

Prerequisite Reading

Read the following books to acquire basic knowledge in advance.

Reference Materials

・Molecular Biology of the Cell (Garland Science)

・Developmental Biology (Sinauer Associates)

Important Course Requirements

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.

Note(s) to Students

A few students available.

Lecture No	041470				
Subject title	Laboratory practice of Organogenesis and Neogenesis			Subject ID	
Instructors					
Semester	YearLong 2023	Level	2nd – 3rd year	Units	8
Course by the instructor with practical experiences					

When an international student registers this subject for credits, this course is taught in English.

Course Purpose and Outline

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;

・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,

・Develop new organoid technology utilizing human pluripotent stem cell culture techniques by incorporating technologies from various fields actively, and

・Obtain the research ability applicable to drug discovery and regenerative medicine for various diseases as well as life sciences.

Course Objective(s)

To acquire the ability of planning research, plan execution, and applied clinical research based on following strategies;

・Learn knowledge on molecular biology, detail biology, developmental biology and stem cell biology to conduct human biology.

・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.

Lecture Style

Individual teaching

Course Outline

・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,

・Acquire experimental techniques, planning research, analyzing and discussing data mainly for liver organoid systems.

*It is strongly recommended that research should be conducted autonomously.

Program available:

・Individual training via participating in research: At any time

Grading System

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.

Prerequisite Reading

Read the following books to acquire basic knowledge in advance.

Reference Materials

・Molecular Biology of the Cell (Garland Science)

・Developmental Biology (Sinauer Associates)

Important Course Requirements

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.

Note(s) to Students

A few students available.

Lecture No	041501				
Subject title	Lecture of Integrated Data Science			**Subject ID**	
Instructors	宮野 悟[MIYANO Satoru]				
Semester	YearLong 2023	**Level**	1st－ year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Course Purpose and Outline

This course provides an overview of the practice and role of Data Science with a focus on medicine, dentistry, and health care, along with recent topics in the fields of information science, statistical science, computational science, and ethical, legal, and social issues (ELSI).

Course Objective(s)

This course aims to understand the use of Data Science in medical research.

Lecture Style

Lectures.

Grading System

Attendance and attitude (60%) and report (40%, required).

Prerequisite Reading

Nothing in particular.

Reference URL

http://www.tmd.ac.jp/cmn/dsc/index.html

Lecture No	415002				
Subject title	Practice of Integrated Data Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Course Purpose and Outline

This course provides an overview of the practice and role of Data Science with a focus on medicine, dentistry, and health care, along with recent topics in the fields of information science, statistical science, computational science, and ethical, legal, and social issues (ELSI).

Course Objective(s)

This course aims to understand the use of Data Science in medical research.

Lecture Style

Lectures.

Grading System

Attendance and attitude (60%) and report (40%, required).

Prerequisite Reading

Nothing in particular.

Reference URL

http://www.tmd.ac.jp/cmn/dsc/index.html

Lecture No	415003				
Subject title	Laboratory practice of Integrated Data Science			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
All classes are taught in Japanese.					

Course Purpose and Outline

This course provides an overview of the practice and role of Data Science with a focus on medicine, dentistry, and health care, along with recent topics in the fields of information science, statistical science, computational science, and ethical, legal, and social issues (ELSI).

Course Objective(s)

This course aims to understand the use of Data Science in medical research.

Lecture Style

Lectures.

Grading System

Attendance and attitude (60%) and report (40%, required).

Prerequisite Reading

Nothing in particular.

Reference URL

http://www.tmd.ac.jp/cmn/dsc/index.html

Lecture No	415004				
Subject title	Lecture of Biostatistics			**Subject ID**	
Instructors	髙橋　邦彦[TAKAHASHI Kunihiko]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese. / When an international student registers this subject for credits, partial classes are taught in English.

Lecture place

5th floor, Building 22, M&D Data Science Center

Course Purpose and Outline

Biostatistics has a central role in medical investigations as the science of data. This course aims to develop the knowledge of biostatistical methodologies and skills for data analysis focused on medical, dental and healthcare applications.

Course Objective(s)

The objective of this course is to master basic methodologies in biostatistics, and will be able to interpret the results of data analysis in medical research.

Lecture Style

Lectures and group discussions in a seminar style.

Course Outline

Lecture and discussion on basic/advanced biostatistical methods for practices in medical research, including their mathematical aspects, applications, and interpretations of data analysis.

Grading System

Participation, discussion, practicum, and external activities (conferences, papers).

Prerequisite Reading

Those who feel less knowledge about basic statistics are encouraged to personally learn it with introductory textbooks on biostatistics.

TextBook

Nothing in particular.

Lecture No	415005				
Subject title	Practice of Biostatistics			**Subject ID**	
Instructors	髙橋　邦彦[TAKAHASHI Kunihiko]				
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					

All classes are taught in Japanese. / When an international student registers this subject for credits, partial classes are taught in English.

Lecture place

5th floor, Building 22, M&D Data Science Center

Course Purpose and Outline

Biostatistics has a central role in medical investigations as the science of data. This course aims to develop the knowledge of biostatistical methodologies and skills for data analysis focused on medical, dental and healthcare applications.

Course Objective(s)

The objective of this course is to master basic methodologies in biostatistics, and will be able to interpret the results of data analysis in medical research.

Lecture Style

Lectures and group discussions in a seminar style.

Course Outline

The practice of approach the problem in medical research via appropriate biostatistical methods and data analysis. Survey related research papers to get the latest knowledge.

Grading System

Participation, discussion, practicum, and external activities (conferences, papers).

Prerequisite Reading

Those who feel less knowledge about math are encouraged to personally learn it with introductory textbooks on statistics.

TextBook

Nothing in particular.

Lecture No	415006				
Subject title	Laboratory practice of Biostatistics			**Subject ID**	
Instructors	髙橋　邦彦[TAKAHASHI Kunihiko]				
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					

All classes are taught in Japanese. / When an international student registers this subject for credits, partial classes are taught in English.

Lecture place

5th floor, Building 22, M&D Data Science Center

Course Purpose and Outline

Biostatistics has a central role in medical investigations as the science of data. This course aims to develop the knowledge of biostatistical methodologies and skills for data analysis focused on medical, dental and healthcare applications.

Course Objective(s)

The objective of this course is to master basic methodologies in biostatistics, and will be able to interpret the results of data analysis in medical research.

Lecture Style

Lectures and group discussions in a seminar style.

Course Outline

Set up a problem from the data in medical, dental, or healthcare field, and practice research to resolve it by biostatistical approach.

Grading System

Participation, discussion, practicum, and external activities (conferences, papers).

Prerequisite Reading

Those who feel less knowledge about math are encouraged to personally learn it with introductory textbooks on statistics.

TextBook

Nothing in particular.

Lecture No	415038				
Subject title	Lecture of Artificial Intelligence and Systems Medicine			**Subject ID**	
Instructors	清水　秀幸[SHIMIZU Hideyuki]				
Semester	YearLong 2023	**Level**	1st year	**Units**	6
Course by the instructor with practical experiences					

All classes are taught in Japanese.

Lecture place

via zoom online meeting

Course Objective(s)

Our goal is to guide you to use AI and data science in your own medical/dental research.

Lecture Style

The course will be conducted on a small group basis.

Course Outline

Students are required to read research papers published in prestigious journals and participate in the discussions independently. In addition, once every few times, you will select a paper and present it to other students. Comments from students who took the course in the previous year are available on the following page.

https://shimizuhideyuki-lab.org/aisystemsmedicine_phdcourse/

Grading System

Participation in the discussion will be evaluated comprehensively.

Prerequisite Reading

Students should have basic knowledge of life sciences. In addition, students are expected to understand statistics and mathematics at the university level, and some experience of deep learning is preferable.

Reference Materials

ディープラーニングを支える技術 ―「正解」を導くメカニズム[技術基礎]／岡野原 大輔：技術評論社, 2021

本質を捉えたデータ分析のための分析モデル入門 統計モデル、深層学習、強化学習等 用途・特徴から原理まで一気通貫!／杉山 聡：ソシム社, 2022

ライブ講義大学 1 年生のための応用数学入門／奈佐原顕郎：講談社, 2019

Essential 細胞生物学／BRUCE ALBERTS, KAREN HOPKIN, ALEXANDER JOHNSON, DAVID MORGAN, MARTIN RAFF, KEITH ROBERTS, PETER WALTER 著,中村桂子, 松原謙一, 榊佳之, 水島昇 監訳,青山聖子 [ほか] 訳,Alberts, Bruce,Hopkin, Karen,Johnson, Alexander D,Morgan, David Owen, 1958-,Raff, Martin C,Roberts, K. (Keith：南江堂, 2021

Important Course Requirements

Those who wish to participate in this program should contact and obtain the approval of the instructor regarding the schedule in advance. Please note that this program values students' autonomy and independence.

Note(s) to Students

There is no limit to the number of participants since it will be held online. This course will be held bi-weekly or once a month.

Reference URL

Comments from students who took the course in the previous year are available on the following page.

https://shimizuhideyuki-lab.org/aisystemsmedicine_phdcourse/

Lecture No	415039				
Subject title	Practice of Artificial Intelligence and Systems Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	1st – 2nd year	**Units**	4
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					
Lecture place M&D Data Science Center (Building No.22, 5th floor)					
Course Purpose and Outline Our goal is to guide you to use AI and data science in your own medical/dental research.					
Course Objective(s) You can start your research career and elevate planning, analysis, presentation, and discussion skills by doing your own research.					
Lecture Style This class will be conducted in a research seminar style.					
Course Outline Students will conduct seminars at research meetings on their own research topics, and discuss the obtained data with faculty members.					
Grading System Comprehensive evaluation will be made based on the student's attitude to research and participation in discussions.					
Prerequisite Reading Students should be able to read and understand life science articles published in Nature, Science, Cell, and their sister journals. In addition, students are expected to understand statistics and mathematics at the university level, and practical experience of deep learning is a must.					
Important Course Requirements Those who wish to participate in this program should contact and obtain the approval of the instructor regarding the schedule in advance. Please note that this program values students' autonomy and independence.					
Note(s) to Students Due to space limitations, only a few people will be allowed to participate.					

Lecture No	415040				
Subject title	Laboratory practice of Artificial Intelligence and Systems Medicine			**Subject ID**	
Instructors					
Semester	YearLong 2023	**Level**	2nd – 3rd year	**Units**	8
Course by the instructor with practical experiences					
When an international student registers this subject for credits, this course is taught in English.					

Lecture place

M&D Data Science Center (Building No.22, 5th floor)

Course Purpose and Outline

Our goal is to guide you to use AI and data science in your own medical/dental research.

Course Objective(s)

This course aims to guide the students to conduct research independently.

Lecture Style

Classes are taught on an individual basis.

Course Outline

In parallel with the previous projects, students will start their own research projects with feedback from the faculty members.

Grading System

A comprehensive evaluation will be made based on the student's attitude to research, progress, and participation in discussions.

Prerequisite Reading

Students should be able to read and understand life science articles published in Nature, Science, Cell, and their sister journals. In addition, students are expected to understand graduate-level statistics and mathematics, and huge experience of deep learning is a must.

Important Course Requirements

Those who wish to participate in this program should contact and obtain the approval of the instructor regarding the schedule in advance. Please note that this program values students' autonomy and independence.

Note(s) to Students

Due to space limitations, only a few people will be allowed to participate.

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 "Student Life".)

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 1st floor of Bldg. 1 and in front of the Student Support Section on the 3rd 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, 4th floor Student Lounge	Certificate of Enrollment (Japanese) Student Discount Card for JR	8:30-21:00 (Student ID card is required.)	Thesis and Dissertation Team, Educational Planning Section TEL : 5803-5074
Educational Planning Section* Bldg. 1, 1st floor	Certificate of Enrollment (English) Transcript (Japanese/English) Certificate of Expected Graduation <Master's Program> (Japanese/English) Other certificates (Japanese/English)	8:30-17:15	Graduate Education Team 1 or 2, Educational Planning Section TEL : 5803-4676・4534
Educational Planning Section* Bldg. 1, 1st floor Educational Planning Section* Bldg. 1, 1st 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, 4th 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, 1st 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, 6th 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, 2nd 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/cmn/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)

- 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 22nd and 14th 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.
5. When you are using this room for a meal, please do not have any conversation due to preventative measures against COVID-19.
6. Please wear a mask　at any time except the time you are having a meal.

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, 1st floor, TEL 03-5803－4676、4679、4534)
2. Payment of tuition:
   Financial Planning Section (Bldg. 1, 3rd floor, TEL 03-5803－5048)
3. Scholarships and tuition exemption:
   Student Support Office (Bldg. 5, 3rd 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□ https://www.tmd.ac.jp/faculties/graduate_school/kyoumuka/

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 20th 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 20th 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 20th of a month before the desired date of withdrawal.

4) Commission

If you wish to receive research guidance at another graduate school, research institute, or a high level hospital

research instruction

(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 20th 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 20th 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 20th 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 20th 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 20th 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 20th of two months before the desired date of change

8) Change of course

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.

of study	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 20th 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 20th 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 20th 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 f0r 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