Clinical Core Subject I (TMDU)

(Code: 4801, 1st year, 2 units)
(Course ID: GS-c4801-S)

1. Instructors

Name	Position	Department	Contact Information
TANABE Minoru	Chief Instructor / Professor	Department of Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
KINUGASA Yusuke	Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
ASAKAGE Takahiro	Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
FUJII Yasuhisa	Professor	Department of Urology	y-fujii.uro@tmd.ac.jp
KUDO Toshifumi	Associate Professor	Department of Specialized Surgeries	t-kudo.srg1@tmd.ac.jp

2. Classroom/Lab Lecture Location

Designated by the instructor of each surgical clinical department.

3. Course Purpose and Outline

[Course Purpose]
For participants to obtain the most advanced knowledge and skills in each field of surgical medicine. For participants to acquire the knowledge needed to choose oncologically appropriate treatment and surgical techniques for cancers related to different organs.
[Outline]
Participate in clinical practice and conferences for each specialty field of surgical medicine. Clinical practice is limited to the ranges allowed by Japanese law.

4. Course Objectives

Participants will learn a number of new diagnostic and treatment methods in each specialty field of surgical medicine in order to enhance their clinical capabilities as a surgeon.

5. Format

The classes will be conducted in the form of seminars, conference presentations and discussions. Practical experience through actual cases will be obtained in operation rooms and other clinical situations.

6. Course Details

- In seminars, participants will obtain the most current knowledge on advanced diagnosis, treatment and other topics in each specialty field of surgical medicine.
- In weekly conferences held before and after surgery, participants will learn standard practices and advanced treatments. They will make presentations on the cases they handled, and everyone's experience will be enhanced through Q&A sessions and discussions.
- In laboratories and outpatient departments, participants will experience standard practices and advanced treatments, after which they will write reports on their experiences.
- The participants will learn about the most advanced surgeries through operation room observation and other opportunities as often as possible, and write reports on the experiences to enhance their education.
- Course content varies depending on the department. For more information, please contact individual instructor listed below.

7. Assessment

An overall assessment of graduate school students who have participated in at least 2/3 of classes will be made. It will comprise presentation of cases they have been assigned at conferences (50%) and Q&A and report assignments for cases they have experienced (50%).

8. Prerequisite Reading

When participating in each course, there are specific instructions on the reading that must be completed beforehand.

9. Reference Materials

Required literature etc. will be presented during course preparation. Participants are asked to prepare thoroughly.

10. Language Used

All classes are conducted in English. Clinical meetings, such as case conferences, are conducted in Japanese, but are explained in English when appropriate.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: TANABE Minoru, Department of Hepatobiliary and Pancreatic Surgery
E-mail: tana.msrg@tmd.ac.jp
KINUGASA Yusuke, Department of Gastrointestinal Surgery
E-mail: kinugasa.srg1@tmd.ac.jp
ASAKAGE Takahiro, Department of Head and Neck Surgery
E-mail: tasakage.hns@tmd.ac.jp
FUJII Yasuhisa, Department of Urology
E-mail: y- fujii.uro@tmd.ac.jp
KUDO Toshifumi, Department of Specialized Surgeries, Div. of Vascular Surgery
E-mail: t-kudo.srg1@tmd.ac.jp

Please contact individual instructors regarding questions or consultations.

12. Note(s) to Students

Since this subject is required, please be proactive in attending classes and learn through active participation.

SIMS 601 (4802) Clinical Core Subject I (MU)

(Code: 4802, 1st year, 2 units)

(Course ID: GS-c4802-S)

1. Instructors

Name	Position	Department	Contact Information
Vitoon Chinswangwatanakul	Chief Instructor/ Associate Professor Dr.	Division of General Surgery, Department of Surgery	Vitoon.chi@mahidol.ac.th
Pornprom Muangman	Professor	Traumatology Surgery, Department of Surgery	Pornprom.mua@mahidol.ac.th
Suebwong Chuthapisith	Associate Professor Dr.	Division of Head-Neck and Breast Surgery, Department of Surgery	Suebwong.chu@mahidol.ac.th
Chumpol Wongwanit	Associate Professor	Division of Vascular Surgery, Department of Surgery	Chumpol.won@mahidol.ac.th
Chongdee Aojanepong	Associate Professor	Division of Plastic and Reconstructive Surgery, Department of Surgery	Chongdee.aoj@mahidol.ac.th
Asada Methasate	Associate professor Dr.	Division of General Surgery, Department of Surgery	Asada.met@mahidol.ac.th
Pradit Rushatamukayanunt	Assistant Professor Dr.	Division of Head Neck and Breast Surgery, Department of Surgery	Pradit.rus@mahidol.ac.th

2. Classroom/Lab Lecture

Designated by each instructor

3. Course Purpose and Outline

[Course Purpose]

To have participants obtain most advanced knowledge and skills in each field of surgical medicine. To have participants acquire knowledge needed to choose oncologically appropriate treatment and surgical techniques for each organ cancer.

[Outline]

Participate in clinical practices and conferences for each specialty field of surgical medicine.

4. Course Objectives

The participants learn a number of new diagnostic and treatment methods in each specialty field of surgical medicine in order to enhance clinical capabilities as a surgeon.

5. Format

The classes will be conducted in forms of seminars, conference presentations, and discussions. Practical experience with actual cases is obtained in operation rooms and other clinical situations.

6. Class Details

- In weekly seminars, the participants will obtain most current knowledge on advanced diagnosis, treatment and other topics in each specialty field of surgical medicine.
- In weekly conferences held before and after a surgery, the participants will learn standard practices and advanced treatments. They make presentations on the cases they experienced and enhance experience through questions/answers and discussions.
- In laboratories and outpatient departments, the participants will experience standard practices and advanced treatments, after which they will write reports on the experience.
- The participants will learn about most advanced surgeries through observation in the operation rooms and in other opportunities as often as possible and write reports on the experience to enhance their experience.

7. Assessment

Grades will be based on the following elements:

- Participation (50%)
- The contents of the assignment report and the presentation at the conference (50%)

8. Prerequisite Reading

When participating in each round, there are specific instructions on matters to prepare.

9. Reference Materials

Required literature etc. will be presented in preparation and prepare thoroughly.

10. Language used

All classes are given in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Assoc.Prof.Vitoon Chinswangwatanakul, MD., Ph.D.

Division of General Surgery, Department of Surgery

E-mail: vchinswa@gmail.com

Assoc.Prof.Suebwong Chuthapisith. MD., Ph.D.

Division of Head-Neck and Breast Surgery, Department of Surgery

Email: Suebwong.chu@mahidol.ac.th

12. Note(s) to Students

Since this subject is required to positively discuss and learn, etc., participate as much as possible.

4803 Clinical Core Subject II

(Jointly Designed Subject)

(Code: 4803, 2nd – 4th year, 5 units)

(Course ID: GS-c4803-S)

1. Instructors

Name	Position	Department	Contact Information
TANABE Minoru	Chief Instructor/ Professor	Department of Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
KINUGASA Yusuke	Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
ASAKAGE Takahiro	Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
FUJII Yasuhisa	Professor	Department of Urology	y-fujii.uro@tmd.ac.jp
KUDO Toshifumi	Associate Professor	Department of Specialized Surgeries	t-kudo.srg1@tmd.ac.jp
Vitoon Chinswangwatanakul	Chief Instructor/Associate Professor	Division of General Surgery, Department of Surgery	Vitoon.chi@mahidol.ac.th
Pornprom Muangman	Professor	Traumatology Surgery	Pornprom.mua@mahidol.ac.th
Asada Methasate	Associate Professor	Division of General Surgery, Department of Surgery	asada.met@mahidol.ac.th
Chongdee Aojanepong	Associate Professor	Division of Plastic Surgery, Department of Surgery	Chongdee.aoj@mahidol.ac.th
Chumpol Wongwanit	Associate Professor	Division of Vascular Surgery, Department of Surgery	Chumpol.won@mahidol.ac.th
Suebwong Chutapisith	Associate Professor	Division of Head Neck and Beast, Department of Surgery	suebwong.chu@mahidol.ac.th
Nuttawut Sermsathanasawadi	Associate Professor	Division of Vascular Surgery Department of Surgery	Nuttawut.ser@mahidol.ac.th

2. **Classroom/Lab Lecture Location**

Designated by the instructor of each surgical clinical department. This course is a cooperative opening course between TMDU and MU, and in this case, it is required to learn at a cooperative university for at least one semester (1 unit), and up to four semesters (4 units) in total.

3. **Course Purpose and Outline**

[Course Purpose]
For participants to obtain advanced knowledge and skills in each specialist field of surgical medicine, acquire basic/practical technologies and nurture an international perspective. Participants will also acquire the knowledge needed to choose appropriate treatment from an oncological point of view, and surgical techniques for cancers related to different organs.
[Outline]
Participate in clinical practices and conferences for each specialty field of surgical medicine.

4. **Course Objectives**

Participants will learn a number of new diagnostic and treatment methods in each specialty field of surgical medicine in order to enhance their clinical capabilities as surgeons.

5. **Format**

The classes will be conducted in the form of seminars, conference presentations and discussions. Practical experience through actual cases will be obtained in operation rooms and other clinical situations.

6. **Course Details**

- In weekly seminars, participants will obtain the most current knowledge on advanced diagnosis, treatment and other topics in each specialty field of surgical medicine not only those in his/her own country but also those in the country of the partnership university.
- In weekly conferences held before and after a surgery, participants will learn standard practices and advanced treatments. They will make presentations on the cases they experienced, and everyone's experience will be enhanced through Q&A sessions and discussions.
- In laboratories and outpatient departments, participants will experience standard practices and advanced treatments, not only those in his/her own country but also those in the country of the partnership university, after which they will write reports on their experiences.
- Participants will learn about the most advanced surgeries, not only those in his/her own country but also those in the country of the partnership university, through operation room observation and other opportunities as often as possible, and write reports on their experiences to enhance their education.

7. **Assessment**

An overall assessment of graduate school students who have participated in at least 2/3 of classes will be made. It will comprise presentation of cases they have been assigned at conferences (50%) and Q&A and reporting assignments for cases they have experienced (50%).

8. **Prerequisite Reading**

When participating in each course, there are specific instructions on the reading that must be completed beforehand.

9. Reference Materials

Required literature etc. will be presented during course preparation. Participants are asked to prepare thoroughly.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: TANABE Minoru, Department of Hepatobiliary and Pancreatic Surgery
E-mail: tana.msrg@tmd.ac.jp
KINUGASA Yusuke, Department of Gastrointestinal Surgery
E-mail: kinugasa.srg1@tmd.ac.jp
ASAKAGE Takahiro, Department of Head and Neck Surgery
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FUJII Yasuhisa, Department of Urology
E-mail: y- fujii.uro@tmd.ac.jp
KUDO Toshifumi, Department of Specialized Surgeries
E-mail: t-kudo.srg1@tmd.ac.jp
Vitoon Chinswangwatanakul, Division of General Surgery, Department of Surgery
E-mail: Vitoon.chi@mahidol.ac.th
Pornprom Muangman
E-mail: Pornprom.mua@mahidol.ac.th
Asada Methasate, MIS unit, Division of General Surgery, Department of Surgery
E-mail: Asada.met@mahidol.ac.th
Chumpol Wongwanit, Division of Vascular Surgery, Department of Surgery
E-mail: wchumpol@gmail.com
Suebwong Chutapisith, Division of Head Neck and Beast, Department of Surgery
E-mail: Suebwong.chu@gmail.com
Chongdee Aojanepong
E-mail: Chongdee.aoj@mahidol.ac.th
Assoc.Prof.Nuttawut Sermsathanasawadi.MD., Ph.D
Division of Vascular Surgery, Department of Surgery
Email: Nuttawut.ser@mahidol.ac.th

Please contact individual instructors regarding questions or consultations.

12. Note(s) to Students

It is required to learn at a cooperative university for at least one semester (1 unit), and up to four semesters (4 units) in total.

Overview of Public Health Medicine in Disease Prevention

(Code：4810 1st – 2nd year, 2 units)

(Course ID: GS-c4810-L)

1. Instructors

Name	Position	Department	Contact Information
NAKAMURA Keiko	Chief Instructor / Professor	Department of Global Health Entrepreneurship	nakamura.ith@tmd.ac.jp
AKITA Keiichi	Professor	Department of Clinical Anatomy	akita.fana@tmd.ac.jp
TAKADA Kazuki	Professor	Professional Development in Health Sciences	takada.rheu@tmd.ac.jp
OKADA Takuya	Associate Professor	Department of Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
MORITA Ayako	Junior Associate Professor/ Associate Professor (Career Track)	Department of Global Health Promotion	morita.hlth@tmd.ac.jp
SEINO Kaoruko	Junior Associate Professor	Department of Global Health Entrepreneurship	seino.ith@tmd.ac.jp
ITO Takashi	Assistant Professor	Department of Human Pathology	t.ito.pth1@tmd.ac.jp

2. Classroom/Lab Lecture Location

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.

3. 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 select case studies.

4. Course Objectives

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

5. Lecture Style

Lectures, group discussions, and team projects. All programs are conducted in English.
International students and Japanese students attend the same class and use English in the classroom.
Students from the Medical and Dental Science or Biomedical Science departments are both welcome to the course.
Attendance on time (synchronous learning) is the default style of attending class.

6. Course Details

No	Date	Time	Theme	Staff
1	October 24	16:00-19:10	Implementation medical science in the context of global health	NAKAMURA Keiko
2	November 9	8:50-12:00	Health Promotion	MORITA Ayako
3	November 21	16:00-19:10	Prevention and control of communicable disease	GU Yoshiaki
4	November 28	16:00-19:10	Prevention and control of tropical disease	ISHINO Tomoko
5	December 12	16:00-19:10	Prevention and control of non-communicable disease and implementation science	SEINO Kaoruko
6	December 19	16:00-19:10	Prevention and control of cancer	OKADA Takuya, ITO Takashi
7	January 16	16:00-19:10	History of Anatomy and Body donation	AKITA Keiichi
8	January 23	16:00-19:10	Leadership	TAKADA Kazuki

7. Grading System

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

8. Prerequisite Reading

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

9. Reference Materials

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

10. Language Used

All classes are conducted in English.

11. Office Hours

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

12. Note(s) to Students

Both international and Japanese students participate in this program, provided in English, and learn together about public health medicine in disease prevention. The course is a core part of nurturing global leaders in disease prevention and data science medical research that TMDU provides.

Epidemiology

(Code: 4811　1st – 2nd year, 2 units)
(Course ID: GS-c4811-L)

1. Instructors

Name	Position	Department	Contact Information
FUJIWARA Takeo	Chief Instructor / Professor	Department of Global Health Promotion	fujiwara.hlth@tmd.ac.jp
MORITA Ayako	Junior Associate Professor	Department of Global Health Promotion	morita.hlth@tmd.ac.jp

2. Classroom/Lab Lecture Location

G-Lab, M&D Tower 8F

3. Course purpose and Outline

Course Purpose

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

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.

4. Course Objectives

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

- Measure disease for behavior scientifically and logically
- Appraise published paper critically
- Write reviewer comments scientifically and logically
- Designing epidemiological study to address public health issue scientifically and logically

5. Format

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

6. Course Details

No.	Topics
1	Lecture: Measurement and Sampling (1)
2	Lecture: Measurement and Sampling (2)
3	Lecture: Measurement and Sampling (3)
4	Group work A (field work and presentation): Measurement and Sampling
5	Study designs and Confounder(1)
6	Study designs and Confounder(2)
7	Study designs and Confounder(3)
8	Group discussion: Critical Appraisal
9	Exam: Writing a Review Comment
10	Comments on answers: Writing a Review Comment
11	Group work B (preparation): Drafting a Research Proposal for a Public Health Issue (1)
12	Group work B (preparation): Drafting a Research Proposal for a Public Health Issue (2)
13	Lecture: Advanced Epidemiology to Apply for the Real World (1)
14	Lecture: Advanced Epidemiology to Apply for the Real World (2)
15	Group work B (group presentation): Drafting a Research Proposal for a Public Health Issue (1)
16	Group work B (group presentation): Drafting a Research Proposal for a Public Health Issue (2)

7. Assessment

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%

8. Prerequisite Reading

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

9. Reference Materials

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

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: NAWA Nobutoshi, Department of Global Health Promotion
E-mail: nawa.ioe@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

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 bring your laptop for group works and exam.

Clinical Biostatistics and Statistical Genetics

(Code: 4812　1st – 2nd year, 2 units)

(Course ID: GS-c4812-L)

1. Instructors

Name	Position	Department	Contact Information
TAKAHASHI Kunihiko	Chief Instructor / Professor	Department of Biostatistics	kunihikot.dsc@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand (via WebClass)

3. Course Purpose and Outline

Course Purpose:

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

Outline:

Biostatistics is the application of statistical methods to data in biological, biomedical and health sciences. It is a key technique for the collection, analysis, and presentation of data especially in quantitative studies including epidemiological studies. Throughout the seminar, we will review the broad field of statistical data analysis and the range of issues that arise when analyzing health data. We will read and discuss selected chapters from a textbook and apply statistical methods to wide range of quantitative study questions.

4. Course Objectives

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

- Interpret basic statistical terminologies.
- Explain assumptions and conditions for basic statistical techniques, and judge which statistical technique to use in a given situation.
- Conduct basic statistical techniques both by hand and using a statistical software, and present results using publication quality tables.
- Describe results of statistical analysis using standard statistical expressions.

5. Format

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

6. Course Details

No.	Topics
1	Lecture: Introduction to Biostatistics (1)
2	Lecture: Data presentation; Numerical summary measures (1)
3	Lecture: Data presentation; Numerical summary measures (2)
4	Lecture: Probability and Theoretical probability distributions (1)
5	Lecture: Probability and Theoretical probability distributions (2)
6	Lecture: Estimation
7	Lecture: Comparing groups - continuous data (1)
8	Lecture: Comparing groups - continuous data (2)
9	Lecture: Comparing groups - categorical data
10	Lecture: Analysis of Variance; Multiple comparison
11	Lecture: Correlation; linear regression
12	Lecture: Multivariate analysis (1)
13	Lecture: Multivariate analysis (2)
14	Lecture: Multivariate analysis (3)
15	Lecture: Survival analysis
16	Final Exam

7. Assessment

Grades will be based on the following elements:
Participation 20%
Homework exercise 30%
Final examination/report 50%

8. Prerequisite Reading

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

9. 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.

10. Language Used

All classes are conducted in English.

11. Important Course Requirements

Chief 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 minimumscore of 6.5.

12. Office Hours

Please contact Prof. Takahashi at kunihikot.dsc@tmd.ac.jp

13. 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 orusing calculator.

SISR 620 (4813) Research Methodology in Biomedicine

(Code：4813　1st ~2nd year 2units)
(Course ID: GS-c4813-L)

1. Instructors

Name	Position	Department	Contact Information
Cherdsak Iramaneerat	Chief Instructor /Associate Professor Dr.	Division of General Surgery, Department of Surgery	Cherdsak.ira@mahidol.ac.th
Yodying Dangprapai	Instructor	Department of Physiology	Yodying.dan@mahidol.ac.th
Varut Lohsiriwat	Professor Dr.	Division of General Surgery, Department of Surgery	balloon@hotmail.com Varut.loh@mahidol.ac.th
Thasaneeya Nopparatjamjomras	Assistant Professor	Siriraj Health science education excellence center	Thasaneeya.rat@mahidol.ac.th

2. Classroom/Lab Lecture Location

Lecture
Meeting room of the Division of General surgery
Syamindra bld, 12th fl.
Faculty of Medicine Siriraj Hospital
Zoom cloud meeting system
Googole meet system
SelecX system

3. Course Purpose and Outline

General introduction of medical research principles and various research methods used to address research problems in medical services

4. Course objectives

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

1) Describe basic principles of medical research
2) Develop proper research questions and hypotheses
3) Explain basic principles of research ethics
4) Choose appropriate research design to address a research question of interest
5) Develop a research proposal

5. Format

Lectures, group discussion, report presentation
All programs will be conducted in English.

6. Course Details

Philosophical foundations of research, research questions, research hypotheses, ethical issues in research, population and sample, validity, research proposal, descriptive study, experimental research, basic science research, case-control study, cohort study, correlational research, survival analysis, survey research, quantitative data analysis, qualitative research, qualitative data collection, qualitative data analysis

Class schedule

No	Online /Onsite	Live	Date	Time	Topic	Instructor
1	Online	Live	Wed, May 25, 2022	5 – 7 pm	Introduction, Philosophical foundations of research, research questions and hypotheses	Cherdsak
2	Online	Live	Tue, Jun 14, 2022	2 – 4 pm	Experimental research	Varut
3	Online	Live	Wed, Jun 15, 2022	3 – 5 pm	Case-control study, Cohort study	Varut
4	Online	Live	Fri, Jun 10, 2022	5 – 7 pm	Research ethics, Research proposal	Cherdsak
5	Online	Live	Wed, Jun 22, 2022	5 - 7 pm	Population and sample,	Cherdsak
6	Online	Live	Wed, Jun 29, 2022	2 – 4 pm	Survival analysis	Varut
7	Online	Live	Fri, Jul 8, 2022	5 – 7 pm	Descriptive research, Quality of life	Cherdsak
8	Online	Live	Wed, Jul 20, 2022	3 – 5 pm	Basic science research	Yodying
9	Online	Live	Wed, Jul 27, 2022	5 – 7 pm	Correlation research	Cherdsak
10	Online	Live	Wed, Aug 10, 2022	5 – 7 pm	Survey research	Cherdsak

11	Online	Live	Fri, Aug 19, 2022	5 – 7 pm	Quantitative data analysis	Cherdsak
12	Online	Live	Wed, Aug 24, 2022	1-3 pm	Qualitative research	Thasaneeya
13	Online	Live		3-5 pm	Data collection techniques in qualitative research	Thasaneeya
14	Online	Live	Wed, Sep 7, 2022	3-5 pm	Qualitative data analysis	Thasaneeya
15	Online	Live	Wed, Sep 14, 2022	5 – 7 pm	Student presentation	Cherdsak
16			Wed, Sep 21, 2022	4 – 5 pm	Examination	

All scheduled class will be taught at a meeting room of division of general surgery, Department of Surgery, Syamindra bld. 12th fl., Faculty of Medicine Siriraj Hospital

7. Assessment

Scoring

1. Class participation	10 points
2. Group discussion	20 points
3. Report	40 points
- Written report	20 points
- Class presentation	20 points
4. Examination	30 points

Criterion-reference grading

A = 80 points or more
B+ = 70 - 79.99 points
B = 60 - 69.99 points
C = 50 - 59.99 points
D = 40 - 49.99 points
F = 0 - 39.99 points

Class participation

Class participation is evaluated based on punctuality and students' participation in class activities in every class.
Each late attendance will result in a deduction of one point.
Each class absence will result in a deduction of two points.
Late attendance of more than 20 minutes is counted as absence.

Group discussion

In each class, an instructor will observe the discussion. At the end of each class, an instructor will give an ordinal rating of the quantity and quality of discussion of each student (1 = poor, 2= fair, 3= average, 4 = good, and 5 = excellent). The scores obtained from all sessions will be averaged into an individual's discussion score which has a total of 20 points.

Report

Each student writes and presents two reports:

Report 1: Surgical research critical review

Each student conducts a literature search from an online database to find a high quality surgical research published within ten years in an international journal (using English language) and critically reviews the study.

The score of report 1 comes from two sources

1.) Written report 10 points

The written report comprises of two files

a. MS word file: A student's critical review of the study

This report is printed in MS word format using Times New Roman font size 12 points on A4 paper with margins on all sides of 2.5 cm. The report is printed in single space format. The length of this report must not exceed five pages. The report contains the following elements:

- A short summary of the selected research report
- Critical appraisal of the research: Introduction, Methods, Results, Discussion, Conclusion
- How the student search for the study and why the student selects this study for report
- How the student plan to apply the knowledge obtained from the selected study in real life practice

b. PDF file of the published research under review

Both files must be submitted via email to cherdsakiramaneerat@gmail.com at least 3 days prior to oral presentation

2.) Class presentation 10 points

Each student presents their work orally in front of the classroom on Sep 24, 2020. The content of this presentation covers all four main elements written in the submitted report.

Each student must give oral presentation in 15 minutes. There will be 5 minutes for Q&A after the presentation.

Criteria for evaluation of oral presentation

- Understanding of the research study
- Thoughtful application of the research findings
- Oral presentation skill within time limit
- Proper use of presentation media (PowerPoint)

Report 2: Surgical research proposal

Each student writes a research proposal

The score of report 2 comes from two sources

1.) Written report 10 points

This report is printed in MS Word format using Times New Roman font size 12 points on A4 paper with margins on all sides of 2.5 cm. This report is printed in single space format. The length of this report must not exceed five pages. This report contains the following elements:

- Research title
- Background and short literature review
- Purposes of the study
- Research question
- Population and sample
- Research design
- Research instrument
- Data collection and analysis plan

The report must be submitted via email to cherdsakiramaneerat@gmail.com at least 3 days prior to oral presentation

2.) Class presentation 10 points

Each student presents their work orally in front of the classroom on Sep 24, 2020.
The content of this presentation covers all elements written in the submitted report.
Each student must give oral presentation in 15 minutes. There will be 5 minutes for Q&A after the presentation.
Criteria for evaluation of oral presentation

- Understanding of the research principles
- Oral presentation skill within time limit
- Proper use of presentation media (PowerPoint)

<u>Examination</u>

A closed book final exam using 60 items of multiple-choice questions (one-best response items)

- Exam date: Wed, Sep 22, 2021
  From 4 – 5 PM
- Total 60 items
- Time 60 min

8. Prerequisite Reading

This course will be taught using four textbooks

Book 1: Bowling A. Research methods in health: Investigating health and health services, 4th ed. Berkshire: McGraw Hill Open University Press; 2014.

Book 2: Ross T. A survival guide for health research methods. Berkshire: McGraw Hill Open University Press; 2012.

Book 3: Morgan GA, Gliner JA, Harmon RJ. Understanding and evaluating research in applied and clinical settings.Mahwah, NJ: Lawrence Erlbaum Associates; 2006.

Book4: Hammond FM, Malec JF, Nick TG, Buschbacher RM. Handbook for clinical research: Design, statistics, and implementation. New York, NY: Demos medical publishing; 2015.

These four textbooks are available in an eBook format, which can be downloaded from Mahidol University eBook collection.

Session 1: Introduction, Philosophical foundations of research, research questions and hypotheses

Book 1: Chapter 7: The principles of research
Book 3: Chapter 2: Definition, purposes, and dimensions of research
Book 3: Chapter 3: A tale of two paradigms: Quantitative and qualitative

Session 2: Research ethics, research proposal

Book 2: Chapter 8: Ethics in research
Book 3: Chapter 4: Ethical problems and principles in human research
Book 3: Chapter 5: Ethical issues related to publishing and reviewing
Attard N. WASP (Write a scientific paper): Writing an academic research proposal. Early Human Development 2018; 123: 39-41.

Session 3: Population and sample, internal and external validity

Book 1: Chapter 8: Sample size and sampling for quantitative and qualitative research
Book 3: Chapter 17: Internal validity
Book 3: Chapter 18: Sampling and population external validity

Book 3: Chapter 19: Evaluating the validity of a research study: An introduction

Session 4: Descriptive research, Quality of life

Book1: Chapter 3: Quality of life: concepts, measurements and patient perception

Book 2: Chapter 4: Analysis of quantitative data

Session 5: Experimental research

Book 1: Chapter 10: Quantitative research: experiments and other analytic methods of investigation

Book 3: Chapter 13: Quasi-experimental designs

Book 3: Chapter 14: Randomized experimental designs

Session 6: Basic science research

Kaelin WG. Common pitfalls in preclinical cancer target validation. Nat Rev Cancer. 2017 Jul;17(7): 425-440

Session 7: Case-control and cohort study

Book 4: Chapter 5: observational studies: Retrospective versus prospective

Song JW, Chung KC. Observational studies: Cohort and case-control studies. Plast Reconstr Surg 2010; 126(6): 2234 – 2242.

Session 8: Correlation research

Book 3: Chapter 26: Basic associational designs: Analysis and interpretation

Book 3: Chapter 30: Use and interpretation of multiple regression

Book 3: Chapter 31: Logistic regression and discriminant analysis: use and interpretation

Session 9: Survival analysis

Book 4: Chapter 40: Kaplan-Meier estimator

Session 10: Survey research

Book 1: Chapter 9: Quantitative research: surveys

Book 1: Chapter 13: Questionnaire design

Session 11: Quantitative data analysis

Book 1: Chapter 15: Preparation of quantitative data for coding and analysis

Book 3: Chapter 23: Selection of inferential statistics: An overview

Book 3: Chapter 24: Single-factor between-groups designs: analysis and interpretation
Book 3: Chapter 25: Single-factor repeated-measures designs: analysis and interpretation
Book 3: Chapter 27: The chi-square test and accompanying effect size indices

Session 12: Qualitative research
Book 2: Chapter 5: Qualitative research

Session 13: Data collection techniques in qualitative research
Book 1: Chapter 16: Unstructured and structured observational studies
Book 1: Chapter 17: Unstructured interviewing
Book 1: Chapter 18: Focus group

Session 14: Qualitative data analysis
Book 2: Chapter 6: Qualitative analysis

Session 15: Student presentation
None

9. Reference Materials

To be announced before individual classes

10. Language used

All classes are conducted in English.

11. Office Hours

Please contact Associate Professor Dr. Cherdsak Iramaneerat (Cherdsak.ira@mahidol.ac.th)

12. Note(s) to Students

None.

SISR 621 (4814) Biostatistics in Biomedicine
Update for Academic year 2021-2022

(Code: 4814, 1st~2nd year, 2 units)
(Course ID: GS-c4814-L)

1. Instructors

Name	Position	Department	Contact Information
Chutwichai Tovikkai	Assistant Professor	General Surgery	Chutwichai.tov@mahidol.ac.th
Varut Lohsiriwat	Professor Dr.	Division of General Surgery, Department of Surgery	balloon@hotmail.com Varut.loh@mahidol.ac.th
Cherdsak Iramaneerat	Associate Professor	General Surgery	Cherdsak.ira@mahidol.ac.th
Asada Methasate	Associate Professor	General Surgery	Asada.met@mahidol.ac.th
Chulaluk Komoltri	Assistant Professor	Research Department	Chulaluk.kom@mahidol.ac.th

2. Classroom/Lab Lecture Location

Lecture**:** Udomposakrisna lecture room, 12th floor Syamindra Building, Siriraj Hospital
Computer lab**:** Computer lab, 6th floor Srisawarinthira Building, Siriraj Hospital
Online learning**:** Synchronous learning via Zoom, Asynchronous learning via SelecX

3. Course Purpose and Outline

The objectives are to provide students with an introduction to**:**

- basic knowledge of statistics, including essential statistical tests, basic descriptive and analytic statistics
- applying appropriate statistics to research questions
- the roles of database, spreadsheet and statistical software programs in analyzing clinical research data
- using statistical software programs to input, clean, manage, describe and analyze clinical research data
- applying these skills in analyzing students' own research project

4. Course objectives

This course offers a general overview of biostatistics for surgeon researchers**.** Students will learn about how to enter and clean data **(**via database, spreadsheet and statistical software programs**)**, principle of hypothesis testing, descriptive statistics, how to perform and interpret essential statistical tests **(**using commonly used statistical software programs**)** and how to calculate sample size**.**

5. Format

Lecture and computer labs**.**

6. Course Details

Course timetable

Class content will include lecture and computer lab per sessions

No.	Date	Time	Class Content	Instructor
1.	26 Jan 2022	13-17	Introduction to biostatistics, Introduction to statistical programs	Chutwichai
2.	26 Jan 2022	13-17	Data type and data management	Chutwichai
3.	7 Feb 2022	14-16	Descriptive statistics	Chutwichai
4.			Statistical hypothesis tests, t-test, ANOVA	Asada
5.	17 Feb 2022	17.00-20.00	Non-parametric test	Cherdsak
6.	24 Feb 2022	17.00-20.00	Linear regression & correlation	Cherdsak
7.	7 Mar 2022	13.00-16.00	Binary logistic regression	Chulaluk
8.	14 Mar 2022	13.00-16.00	Survival analysis & Cox regression	Chulaluk
9.	21 Mar 2022	13.00-16.00	Sample size calculation	Chulaluk
10.	28 Mar 2022	13.00-16.00	Creating graphs and tables	Chulaluk
11.	28 Mar 2022	13.00-16.00	Special consideration: missing data, propensity score matching	Chulaluk

Total 30 hr

7. Assessment

Grades are based on attendance at lecture, performances on assignments, and level of attitude, skill and knowledge.

8. Prerequisite Reading

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

9. Reference Materials

1. Altman DG. Practical statistic for medical research. Chapman & Hall. London. 1991.
2. White SE. Basic & Clinical Biostatistics. Lange. 5th ed. McGraw-Hill Education. 2020.
3. Hand SJ. Statistics: A Very Short Introduction. Oxford University Press. Oxford. 2008.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Chutwichai Tovikkai, Department of General Surgery
E-mail: chutwichai.tov@mahidol.ac.th Tel: +662-419-8005

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Overview of Cancer:
Cancer Biology, Pathology and Anatomy

(Code : 4820 1st – 2nd year, 1 unit)
(Course ID: GS-c4820-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
OHASHI Kenichi	Professor	Department of Human Pathology	kohashi.pth1@tmd.ac.jp
AKITA Keiichi	Professor	Department of Clinical Anatomy	akita.fana@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
AKIYAMA Yoshimitsu	Junior Associate Professor	Department of Molecular Oncology	yakiyama.monc@tmd.ac.jp
SHIMADA Shu	Assistant Professor	Department of Molecular Oncology	shimada.monc@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass. The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]

・To understand methods and processes for pathological diagnosis of cancer (benign and malignant/infiltrating and metastatic) in cancer treatment medical practice.
・To understand the importance of judging malignancy grade with relevance to treatment methods.
・To understand diagnosis and treatment of early cancer in comparison with advanced cancer.
・To understand change in cancer lesions after treatment.
・To understand the lymphatic system as a metastasis pathway of cancer.
・To understand the position of the arteries used for intra-arterial infusion cancer therapy.
・To understand the functions of oncogenes and tumor suppressor genes and their abnormalities in cancer development.
・To understand carcinogens, infections associated with canceration and hereditary cancers.
・To understand factors regulating differentiation associated with cancer and differentiation therapy.
・To understand the association between cancer and vasculature and angiogenesis inhibition therapy.
・To understand of the characteristics of cancer cells based on their differences from normal cells, including cell morphology and material and energy metabolism.
・To understand of metastasis, the most serious form of cancer, based on a basic knowledge of cell adhesion and polarity.

・To acquire basic knowledge of hereditary and arcuate pediatric cancers, which have different treatment and prognosis, compared to cancers of the elderly, and to understand their biological characteristics.
・To understand cell death/life span, cell proliferation/cycle and DNA damage repair, all of which are directly linked to cell fate, with a focus on the difference between normal cells and cancer cells.
・To understand established and new theory regarding cell transformation as well as cancer stem cells and relevant ES/iPS cells.

[Outline]
・The types and functional roles of oncogenes and tumor suppressor genes, which are important for understanding the molecular mechanisms of carcinogenesis, are described. In addition, the abnormalities of these genes in human cancers and detection methods of these genes in human cancers, and their relationship with carcinogens, differentiation, and angiogenesis are explained. The significance of angiogenesis in cancer growth and malignant transformation and the usefulness of differentiation-inducing therapy are also explained. and the usefulness of differentiation-inducing therapies. In particular, the history of research on the cancer-suppressor gene p53 from its discovery to the present is explained to learn the characteristics of cancer cells, and our latest findings are introduced.
・Cells, the basic unit of life, is explained with emphasis on the differences between normal cells and cancer cells. The latest findings on cell fate (proliferation, differentiation, cell death, transformation, and genetic traits), are also described, including the cell cycle, DNA damage response, and repair.
・Using actual cases of pathological diagnosis in medicine, how benign and malignant cancer, invasion, and metastasis are observed and diagnosed are explained. The degree of malignancy of cancer varies, and the treatment plan differs depending on the degree of malignancy. How this information is utilized in clinical practice from the standpoint of pathology is explained.
・In Japan, early diagnosis of cancer has been progressing, and there are more opportunities for diagnosis and treatment of early-stage cancer than in other countries. The diagnosis and treatment of early-stage cancer by showing actual cases are explained.
・How cancer lesions are changed by chemotherapy and radiotherapy, and how the appearance of cancer in each organ differs are explained. How the appearance of cancer in each organ differs from the point of view of the difference in its origin is also explained. In addition, from an anatomical point of view, the anatomy of the vascular system, which is necessary for understanding cancer treatment and cancer metastasis, are explained.

4. Course Objectives

To understand cancer's behavior and true condition from the biological and morphological viewpoint with relevance to diagnosis and treatment.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Anatomy for diagnosis and treatment of cancer -Thorax and abdominal organs and related structures
2	Oncogenes and tumor suppressor genes
3	Role of Pathology in Cancer Chemotherapy
4	Development of multifaceted therapies targeting the cancer microenvironment
5	Cancer Cell Diversity and Pathological Diagnosis
6	Hereditary cancer
7	Characteristics of Cancer Cell

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

To review basic anatomy and histology.

9. Reference Materials

None

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: OKADA Takuya, Gastrointestinal Surgery

E-mail: t-okada.srg1@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

Closely related not only to the carcinogenic process but also to the latest cancer treatments.

Minimally Invasive Treatment for Cancer. I

(Code: 4821, 1st – 2nd year, 1 unit)
(Course ID: GS-c4821-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
ISHIBASHI Hironori	Junior Associate Professor	Department of Thoracic Surgery	hishiba.thsr@tmd.ac.jp
HARUKI Shigeo	Junior Associate Professor	Department of Gastrointestinal Surgery	s.haruki.srg1@tmd.ac.jp
NAKAMURA Yuki	Assistant Professor	Department of Urology	nakamura.uro@tmd.ac.jp
HANAOKA Marie	Assistant Professor	Department of Gastrointestinal Surgery	hana.srg1@tmd.ac.jp
ISHIKAWA Yoshiya	Assistant Professor	Department of Hepatobiliary and Pancreatic Surgery	y-ishikawa.msrg@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]

- Understand minimally invasive treatments for various cancers.
- Understand multidisciplinary treatments for cancer that combine surgery, radiation therapy, and chemotherapy.

[Outline]

Concerning surgical technique, the concept and results of minimally invasive surgery will be presented, with visual images including a video demonstration.

4. Course Objectives

Learn about the practice of minimally invasive surgery for cancer and understand its role in cancer diagnosis.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Minimally invasive surgery in urological diseases (1)
2	Minimally invasive surgery in urological diseases (2)
3	Minimally invasive treatment for esophageal cancer (1)
4	Minimally invasive treatment for esophageal cancer (2)
5	Colon diseases (1)
6	Colon diseases (2)
7	Minimally invasive treatment for hepatobiliary and pancreatic cancer (1)
8	Minimally invasive treatment for hepatobiliary and pancreatic cancer (2)
9	Lung cancer treatment (1)
10	Lung cancer treatment (2)

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

None.

9. Reference Materials

To be indicated in the lecture if necessary.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Minimally Invasive Treatment for Cancer. II

(Code: 4822, 1st – 2nd year, 1 unit)
(Course ID: GS-c4822-L)

1. Instructors

Name	Position	Department	Contact Information
MIURA Masahiko	Chief Instructor / Professor	Department of Oral Radiation Oncology	masa.mdth@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
TAKEDA Atsuya	Head of Radiation Oncology Center	Ofuna Chuo Hospital, Radiation Oncology Center	takeda@1994.jukuin.keio.ac.jp
AKIMOTO Tetsuo	Director	Vice president, Department of Radiology, National Cancer Center Hospital East	takimoto@east.ncc.go.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]
- Understand minimally invasive treatments for various cancers.
- Understand the types, indications, and efficacy of radiation therapy.

[Outline]
Radiation therapy will be explained by treatment method. In particular, lectures on IMRT, high-precision radiotherapy of stereotactic irradiation and others, particle therapy using proton beams, small-source radiation therapy, and radiation therapy in multidisciplinary treatment will be provided by leading Japanese lecturers at the forefront of the field.

4. Course Objectives

- Understand minimally invasive treatments for various cancers.
- Understand the types, indications, and efficacy of radiation therapy.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Proton therapy (1)
2	Proton therapy (2)
3	Stereotactic radiotherapy (1)
4	Stereotactic radiotherapy (2)
5	IMRT/Radiotherapy at Hirosaki University
6	IMRT/Radiotherapy at Hirosaki University
7	Radiotherapy for uterine cancer and prostate cancer (1)
8	Radiotherapy for uterine cancer and prostate cancer (2)

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

To read through the reference materials.

9. Reference Materials

Perez & Brady's principles and practice of radiation oncology／[edited by] Edward C. Halperin, David E. Wazer, Carlos A. Perez, Luther W.
Brady,Halperin, Edward C.,Wazer, David E,Perez, Carlos A.,Brady, Luther W., : Wolters Kluwer, 2019

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon/Wed/Fri: 16:00 – 18:00 PM
Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

Related to organ-specific cancers and others.

Organ-specialized Cancer

(Code: 4823, 1st – 2nd year, 1 unit)
(Course ID: GS-c4823-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
KAWADA Kenro	Junior Associate Professor	Department of Gastrointestinal Surgery	kawada.srg1@tmd.ac.jp
ISHIKAWA Yoshiya	Assistant Professor	Department of Hepatobiliary and Pancreatic Surgery	y-ishikawa.msrg@tmd.ac.jp
WAKANA Kimio	Junior Associate Professor	Hospital Department of Perinatal and Women's Medicine	k.wakana.crm@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]
Understand the principle and practice of standard and multidisciplinary treatment for organ-specialized cancer.
[Outline]
The classification, pathology, and diagnosis of organ-specialized cancer will be outlined. Surgery, chemotherapy, and multidisciplinary treatment as a combination of both will be explained, alongside the indication, target, and benefit of such treatments. In addition, recent clinical studies and topics will also be covered.

4. Course Objectives

Learn the actual practice of organ-specialized cancer treatment and apply it to actual clinical practice and research.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Hepatobiliary and Pancreatic Cancer
2	Hematopoietic tumor - Hematopoietic Stem Cells Transplantation
3	Breast cancer
4	Urology cancer
5	Gynecologic cancer (uterine, ovarian)
6	Lung cancer
7	Gastric cancer
8	Esophageal cancer

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

It is preferable to take this course together with “Pediatric and Rare Cancers”, “Advanced Clinical Oncology”, and “Cancer Genomics and Precision Medicine”.

Pediatric and Rare Cancers

(Code: 4824, 1st – 2nd year, 1 unit)
(Course ID: GS-c4824-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
ASAKAGE Takahiro	Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
TAKAGI Masatoshi	Professor	Department of Pediatrics and Developmental Biology	m.takagi.ped@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
MICHI Yasuyuki	Associate Professor	Department of Oral and Maxillofacial Surgery	y-mic.mfs@tmd.ac.jp
NAMIKI Takeshi	Associate Professor	Department of Dermatology	tnamderm@tmd.ac.jp
TAMURA Kaoru	Junior Associate Professor	Hospital Department of Neurosurgery	tamura.nsrg@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]
Organize a systematic knowledge of the basic, clinical history, and current status of pediatric and rare cancers.
[Outline]
Classes will include an overview of pediatric and rare cancers from various angles.

4. Course Objectives

Learn the actual practice of pediatric and rare cancer treatment and apply it to actual clinical practice and research.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Rare cancer and Intractable cancer
2	Brain tumors
3	Bone and Soft Tissue Tumors
4	Pediatric cancer
5	Clinical lecture on head and neck cancer
6	Colorectal cancer
7	Oral cancer
8	Skin malignancies

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

It is preferable to take this course together with “Organ-specialized Cancer”, “Advanced Clinical Oncology”, and “Cancer genomics and precision medicine”.

Advanced Clinical Oncology

(Code: 4825, 1st – 2nd year, 1 unit)
(Course ID: GS-c4825-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
SATO Shingo	Junior Associate Professor	Medical Hospital	satoshin.phy2@tmd.ac.jp
KAMIYA Takahiro	Assistant Professor	Medical Hospital	kamiya.ped@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

【Course Purpose】

Systematically understand oncology in general. Organize the knowledge of oncology with a comprehensive approach, including basic research, epidemiology, therapeutics, palliative medicine, and social medicine aspects.

【Outline】

Classes will trace the oncology history and include an overview of oncology from various angles.

4. Course Objectives

Learn the overview of clinical oncology and apply it to actual clinical practice and research.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Advances in Cancer Drug Therapy
2	Cancer Rehabilitation
3	Diagnosis, treatment in bone metastasis
4	CAR-T Therapy
5	Reproductive function and conservation
6	Oncology Cardiology
7	Introduction to Palliative Oncology
8	Cancer in the Elderly

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

It is preferable to take this course together with “Cancer genomics and precision medicine”, “Organ-specialized Cancer”, and “Pediatric and Rare Cancers.”

Cancer Genomics and Precision Medicine

(Code: 4826, 1st – 2nd year, 1 unit)
(Course ID: GS-c4826-L)

1. Instructors

Name	Position	Department	Contact Information
Ikeda Sadakatsu	Associate Professor	Hospital Department of Cancer Center	ikeda.canc@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]
Organize a systematic knowledge of the basic and clinical aspects of cancer genomics, the history, and current status of cancer genomic medicine.
[Outline]
Classes will include an overview of cancer genomics and precision medicine from various angles.

4. Course Objectives

Learn the actual practice of cancer genome diagnostics and apply it to actual clinical practice and research.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Basics of Genetic and genome variant
2	Basics of next generation sequencers
3	Data Analysis in cancer genomic profiling tests (1)
4	Data Analysis in cancer genomic profiling tests (2)
5	Current Status and Outlook of cancer genomic medicine (1)
6	Current Status and Outlook of cancer genomic medicine (2)
7	Treatment option after cancer genomic profiling tests (1)
8	Treatment option after cancer genomic profiling tests (2)

7. **Assessment**
   The assessment will be by the report assignments.

8. **Prerequisite Reading**
   None.

9. **Reference Materials**
   None.

10. **Language Used**
    All classes are conducted in English.

11. **Office Hours**
    Mon – Fri: 9:00 AM – 17:00 PM
    Contact: OKADA Takuya, Gastrointestinal Surgery
    E-mail: t-okada.srg1@tmd.ac.jp
    Please contact the instructor regarding questions or consultations.

12. **Note(s) to Students**
    It is preferable to take this course together with “Advanced Clinical Oncology.”

Palliative Medicine: Outline

(Code: 4827, 1st – 2nd year, 1 unit)
(Course ID: GS-c4827-L)

1. Instructors

Name	Position	Department	Contact Information
MORI Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp
OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp

2. Classroom/Lab Lecture Location

On-demand: on WebClass.
The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]
Palliative medicine in Japan was originally focused on terminally ill cancer patients with pain. However, the notion surrounding it has changed as it has also been indicated in the early course of cancer treatment. This course provides an overview toward a general understanding of palliative medicine. The aim is to acquire an understanding of patients' quality of life, assess patients' overall profiles and to learn communication skills when addressing patients and their families.
[Outline]
Provide an outline on the philosophy, aim, significance and current situation of palliative care. In addition, the following will be explained: hospice, palliative care in the palliative care unit and home palliative care according to actual clinical experience. Lectures will be given on the basic quality of life scales in palliative medicine, including descriptions and applied of quality of life measures to assess total pain, and communication with patients and their families.

4. Course Objectives

Learn the actual practice of palliative medicine and apply it to actual clinical practice and research.

5. Format

The subject consists of lectures and report assignments.
All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Introduction to palliative medicine
2	Approach to physical symptoms in home healthcare
3	Respiratory symptom management and end-of-life care for cancer patients
4	Specialized Palliative Medicine in Practice in palliative care unit
5	Understanding and Responding to the Distress of Cancer Patients' Families and bereaved family
6	Responding to delirium
7	Psychiatric Issues at the End of Life
8	Overview of psycho-oncology

7. Assessment

The assessment will be by the report assignments.

8. Prerequisite Reading

None.

9. Reference Materials

Oxford Textbook Of Palliative Medicine 5th edition (Cherny and Fallon, Oxford Textbook of Palliative Medicine): 2015

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: OKADA Takuya, Gastrointestinal Surgery
E-mail: t-okada.srg1@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

The goal is to acquire knowledge that can be immediately put into practice.

SISR601 (4828) Applied Cancer Biology and Immunology

(Code: 4828, 1st~2nd year, 1 unit)
(Course ID: GS-c4828-L)

1. Instructors

Name	Position	Department	Contact Information
Pradit Rushatamukayanunt	Chief instructor/ Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Pradit.rus@mahidol.ac.th
Suebwong Chutapisith	Associate Professor Dr.	Division of Head Neck and Beast, Department of Surgery	suebwong.chu@mahidol.ac.th
Waraporn Imruetaicharoenchoke	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Waraporn Imr@mahidol.ac.th

2. Classroom/Lab

Division of Head Neck and Beast, Department of Surgery Faculty of Medicine Siriraj Hospital, Syamindra building, 13floor

3. Course Purpose and Outline

[Course Purpose]

Basic knowledge about cancer biology and immunology are important toward basic research as well as implement to clinical arena. Application of cancer biology and immunology toward clinical care will be educated

[Course Outline]

Background of cancer biology and immunology will be reviewed. Application toward nouveau treatment approaches will be discussed

4. Course Objectives

The student will be able to understand application of biology and immunology on the context of cancer treatment.

5. Format

The course includes lectures and seminars

6. Course Details

No	Date	Time	Topic/Details	Instructors
1	TBD	10.00 – 13.00	Introduction to Cancer Immunology	Lecturer Dr. Pradit Rushatamukayanunt
2	TBD	10.00 – 13.00	Cancer genetics and epigenetics	Lecturer Dr. Pradit Rushatamukayanunt
3	TBD	10.00 – 13.00	Cellular Signaling and Carcinogenesis	Lecturer Dr. Pradit Rushatamukayanunt
4	TBD	10.00 – 13.00	Cancer Phenotypes toward precision cancer therapy	Lecturer Dr. Pradit Rushatamukayanunt
5	TBD	10.00 – 13.00	Cancer Immunotherapy	Lecturer Dr. Pradit Rushatamukayanunt
			Examination	

7. Assessment

Attendance (70%) and Presentation (20%)

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Important Course Requirements

None.

11. Language used

All classes are conducted in English.

12. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Lecturer Dr. Pradit Rushatamukayanunt, Division of Head Neck and Beast, Department of Surgery

E-mail: Pradit.rus@mahidol.ac.th

Please contact the instructors regarding questions or consultations.

13. Note(s) to Students

None.

SISR 602 (4829) Stem cell for surgical patient

(Code: 4829, 1st~2nd year, 1 units)
(Course ID: GS-c4829-L)

1. Instructors

Name	Position	Department	Contact
Nuttawut Sermsathanasawadi	Chief Instructor / Associate Professor Dr.	Division of Vascular Surgery, Department of Surgery	Nuttawut.ser@mahidol.ac.th
Methichit Wattanapanitch	Assistant Professor	Division of Research Faculty of Medicine	Methichit.wat@mahidol.ac.th
Visnu Lohsiriwat	Associate Professor	Division of Head-Neck and Breast Surgery, Department of Surgery	Visnu.loh@mahidol.ac.th
Patimaporn Wongprompitak	Lecturer Dr.	Division of Research Faculty of Medicine	Patimaporn.won@mahidol.ac.th

2. Classroom/Lab Lecture

- Lecture Online by Zoom
- Division of Vascular Surgery, Syamindra Building 12th floor,
  Department of Surgery, Faculty of Medicine Siriraj hospital, Mahidol University
- MU-TMDU office, 727 Room, SiMR Building 7th Floor.

3. Course Purpose and Outline

The purpose of this course is to encourage students to comprehensively understand stem cells for treatment of surgical patients. Students will improve their abilities to independently study stem cell application 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 endothelial progenitor cells in view of neovascularization for therapeutic angiogenesis in no-option critical limb ischemia.

4. Course objectives

The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand stem cell development, maintenance, and fate determinations, particularly in endothelial progenitor 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 the research question, properly discuss experimental results. and, report the summary of research in English.

5. Format

Programs are set up for a small number of students (not more than 3 students) for more intense discussion and in-depth participation.

6. Course Description and Timetable

Date	Time	Topic/Details	Instructors
TUE 5JUL22	13.00-16.00	Lecture Stem Cell for Vascular Surgery	Assoc. Prof. Dr.Nuttawut Sermsathanasawadi
TUE 12JUL22	13.00-16.00	Induced pluripotent stem cells: Applications in Biomedical Research	Assist. Prof. Methichit Wattanapanitch Dr.Nuttapol Chruewkamlow
FRI 22JUL22	9.30-12.00	Clinical Application of ADSCs in Breast Reconstructive Surgery	Lecturer Visnu Lohsiriwat
TUE26JUL22	13.00-16.00	Limbal stem cell niche	Lecturer Dr. Patimaporn Wongprompitak Dr.Nuttapol Chruewkamlow
TUE19JU22	13.00-16.00	Mesenchymal stem cell from the route of OB-GYN	Dr. Tatsanee Phermthai Dr.Nuttapol Chruewkamlow
		Examination	Assoc. Prof. Dr.Nuttawut Sermsathanasawadi

Lecture and conference:

Goals/outline:

This course will introduce to students the recent topics in the research field of stem cell for critical limb ischemia.

Research Meeting 15:00 ~ 16:30 on every Friday

Practice :

In this course, students will learn the molecular basis of the stem cells (endothelial progenitor cell). Students will receive exposure to cutting edge concepts and research technologies, and study regulatory mechanisms in endothelial progenitor cell. With emphasis also on physiological and clinical application of stem cells, the course aims to improve student's understanding of stem cells.

Available programs: Progress report 9.00-10.00 on every Tuesday

Lab :

Each student will conduct independent research, under supervision of instructors, on endothelial progenitor cells. Students are advised to design experiments regarding endothelial progenitor cells.

Through execution of such experiments, students shall understand general property of endothelial progenitor cells in both/either physiological and/or clinical application (translational Research).

Available programs: Participation to the research groups by consultation

7. Assessment

Grading will be undertaken based on lecture/practice/lab participation, performance, presentation, reports, and lab work execution.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact : Associate Professor Dr.Nuttawut Sermsathanasawadi,
Division of Vascular Surgery, Department of Surgery
Email: Nuttawut.ser@mahidol.ac.th Tel +662-4198021

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 619 (4830) Basic Laboratory Relevance to Surgery

(Code: 4830, 1st~2nd year, 1 units)
(Course ID: GS-c4830-L)

1. Instructors

Name	Position	Department	Contact Information
Doonyapat Sanguanraksa	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Doonyapat.san@mahidol.ac.th
Pradit Rushatamukayanunt	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Pradit.rus@mahidol.ac.th
Waraporn Imruetaicharoenchoke	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Waraporn.imr@mahidol.ac.th

2. Classroom/Lab Lecture

Please check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

[Course Purpose]

Principles and practiced of experiments that are relevant to research involving surgical diseases will be educated

[Course Outline]

Basic principles of the experiments as well as experimental practiced will be coached.

4. Course Objectives:

The student will be able to understand principles of experiments and gain hands-on experience.

5. Format

The course includes lectures and experiments practice

6. Course Details

No.	Topics	Instructors
1.	Basic Laboratory Relevance to Surgery 1	Doonyapat Sanguanraksa Pradit Rushatamukayanunt Waraporn Imruetaicharoenchoke
2.	Basic Laboratory Relevance to Surgery 2	Doonyapat Sanguanraksa Pradit Rushatamukayanunt Waraporn Imruetaicharoenchoke
3.	Basic Laboratory Relevance to Surgery 3	Doonyapat Sanguanraksa Pradit Rushatamukayanunt Waraporn Imruetaicharoenchoke
4.	Basic Laboratory Relevance to Surgery 4	Doonyapat Sanguanraksa Pradit Rushatamukayanunt Waraporn Imruetaicharoenchoke
5.	Basic Laboratory Relevance to Surgery 5	Doonyapat Sanguanraksa Pradit Rushatamukayanunt Waraporn Imruetaicharoenchoke

7. Assessment

None.

8. Prerequisite Reading

Requirement None.

9. Reference Materials

Should the international students register the subject for credit, English will be provided.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Lecturer Dr. Doonyapat Sanguanraksa, Division of Head Neck and Beast, Department of Surgery
E-mail: doonyapat.san@mahidol.ac.th
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 616 (4831) Cancer Imaging

(Code: 4831, 1st~2nd year, 1 units)
(Course ID: GS-c4831-L)

1. Instructors

Name	Position	Department	Contact Information
Prawej Mahawithitwong	Associate Professor	Division of General Surgery, Department of Surgery	Prawej.mah@mahidol.ac.th
Prawat Kositamongkol	Assistant Professor	Division of General Surgery, Department of Surgery	prawat.kos@mahidol.ac.th
Somchai Limsrichamrern	Assistant Professor	Division of General Surgery, Department of Surgery	somchai96@hotmail.com
Wethit Dumronggittigule	Assistant Professor	Division of General Surgery, Department of Surgery	Wethit.dum@mahidol.ac.th
Pholasith Sangserestid	Lecturer	Division of General Surgery, Department of Surgery	Pholasith.san@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture room, Division of General Surgery, Syamindra Building 12th floor

3. Course Purpose and Outline

To teach the student to understand the disease of Cancer Imaging from the surgical viewpoint.

The surgery techniques and patient care will be included in this course.

4. Course objectives

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

1. Describe pathogenesis of important Cancer Imaging
2. Describe investigation and surgical treatment of Cancer Imaging
3. Describe how to approach Cancer Imaging
4. Describe the surgery and techniques used in the treatment of Cancer Imaging
5. Describe the pre and post operative care of the patients with Cancer Imaging

5. Format

Lecture, seminars and conferences. All programs will be delivered in English.

6. Course Details

No.	Date	Class Content	Instructor
1.	9:00-12:00	How to approach Cancer Imaging	Prawat Kositamongkol
2.	9:00-12:00	Pre and post operative care of Cancer Imaging	Wethit Dumronggittigule
3.	9:00-12:00	Important complications of Cancer Imaging	Somchai Limsrichamrern
4.	9:00-12:00	Endoscopic treatment of Cancer Imaging	Pholasith Sangserestid
5.	9:00-12:00	Cancer Imaging	Prawej Mahawithitwong

7. Assessment

Grades are determined based on lecture attendance and written and oral examination. Basic knowledge, surgery, patient care and attitude will be evaluated.

8. Prerequisite Reading

Reading materials will be announced and provided before the course.

9. Reference Materials

To be announced before the class.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Prawej Mahawithitwong, Division of General Surgery, Department of Surgery
E-mail: prawej.mah@mahidol.ac.th

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

This course is included in elective courses in joint Ph.D. program.
Ph.D. student focusing in Cancer Imaging is encouraged to take this course.
The student who wish to continue his surgical career in Cancer Imaging will have a chance to learn and understand Cancer Imaging from basic knowledge to patient care.
This is an elective course to be taken during joint Ph.D. program providing by Mahidol university.

SISR 609 (4832) Robotic Surgery in Urology

(Code: 4832, 1st~2nd year, 1 units)
(Course ID: GS-c4832-L)

1. Instructors

Name	Position	Department	Contact Information
Sittiporn Srinualnud	Chief Instructor/ Associate Professor	Division of Urology Surgery, Department of Surgery	Sittiporn.sri@mahidol.ac.th
Chalairat Suk-ouichai	Lecturer	Division of Urology Surgery, Department of Surgery	Chalairat.suk@mahidol.ac.th
Siros Jitpraphai	Lecturer	Division of Urology Surgery, Department of Surgery	Sirros.jit@mahidol.ac.th
Varat Woranisakul	Lecturer	Division of Urology Surgery, Department of Surgery	Varat.wor@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture:Division of Urology Surgery, 12th floor Syamindra Building, Siriraj Hospital
Ward round: Urology ward, 7th (North) floor Chalermphrakiet Building, Siriraj Hospital
Operating theatre: 5th floor Syamindra Building, Siriraj Hospital

3. Course Purpose and Outline

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

- Understand common diseases in the field of Robotic Surgery in Urology
- Understand treatment and operations Robotic Surgery in Urology
- Develop research questions relating to Robotic Surgery in Urology
- Generate idea in innovations relating treatment of Robotic Surgery in Urology

4. **Course objectives**

   This course provides a general knowledge in Robotic Surgery in Urology in Prostatectomy, Nephrectomy and Cystectomy

5. **Format**

   - Lecture: essential topics in Robotic Surgery in Urology
   - Clinical practice: participate in operating theatre, ward round and out-patient encounters in
   - Conference and journal club: presentation and participation in discussion
   - Group discussion: in-depth discussion with supervisors

6. **Course Details**

   Ward round (7^{th} (North) floor Chalermphrakiet Building, Siriraj Hospital):
   Monday – Friday 7.00-8.00
   Operating theater (OR, 5^{th} floor Syamindra building):
   Monday – Friday 9.00-16.00
   Grand round Friday 8.00-9.00
   Conference and group discussion: to be announced

7. **Assessment**

   Grades are based on attendance of lectures, performances on assignments, and levels of attitude, skills and knowledge

8. **Prerequisite Reading**

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

9. **Reference Materials**

   Campbell-Walsh Urology Edition 11^{th}

10. **Language used**

    All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Sittiporn Srinualnud, Division of Urology Surgery, Department of Surgery
E-mail: Sitsrinualnad@yahoo.com

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 603 (4833) Basic Surgical Endoscopy

(Code: 4833, 1st~2nd year, 1 units)
(Course ID: GS-c4833-L)

1. Instructors

Name	Position	Department	Contact Information
Jirawat Swangsri	Chief Instructor/ Assistant Professor Dr.	Division of General Surgery, Department of Surgery	Jirawat.swa@mahidol.ac.th
Vitoon Chinswangwatanakul	Associate Professor Dr.	Division of General Surgery, Department of Surgery	Vitoon,chi@mahidol.ac.th
Asada Methasate	Associate Professor Dr.	Division of General Surgery, Department of Surgery	asada.met@mahidol.ac.th
Thawatchai Akaraviputh	Professor	Division of General Surgery, Department of Surgery	Thawatchai.aka@mahidol.ac.th
Nonthalee Pausawasdi	Associate Professor	GI Med unit,Department of Medicine	Nonthalee.pau@mahidol.ac.th
Prasit Mahawongkajit	Associate Professor	GI Med unit,Department of Medicine	
Atthaphorn Trakarnsanga	Associate Professor	Division of General Surgery, Department of Surgery	atthaphornt@gmail.com
Thammawat Parakonthun	Assistant Professor	Division of General Surgery, Department of Surgery	t.parakonthun@gmail.com
Voraboot Taweerutchana	Lecturer	Division of General Surgery, Department of Surgery	Voraboot.taw@mehidol.ac.th
Chainarong Phalanusitthep	Lecturer	Division of General Surgery, Department of Surgery	Chainaraong.pha@mahidol.ac.th
Julajak Limsrivilai	Instructor	GI Med unit,Department	

		of Medicine	
Manus Rujivarodom	Instructor	GI Med unit,Department of Medicine	
Kotchakorn maipeng	Instructor	GI Med unit,Department of Medicine	
Nicha Srisuvoranan	Instructor	GI Med unit,Department of Medicine	
Uayporn Siriyuyuen	Instructor	GI Med unit,Department of Medicine	
Kawada Kenro	Associate Professor	Esophageal Surgery, TMDU	kawada.srg1@tmd.ac.jp

2. Classroom/Lab Lecture

Lecure: Division of General Surgery, 12th floor Syamindra Building, Siriraj Hospital
Ward round: Surgical ward, 7th floor 72th year Building, Siriraj Hospital
Operating theatre: 5th floor Syamindra Building, Siriraj Hospital

3. Course Purpose and Outline

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

- Understand common diseases in the field of Endoscopic and minimally invasive surgery
- Understand treatment and operations Endoscopic and minimally invasive surgery
- Develop research questions relating to Endoscopic and minimally invasive surgery and their treatment.
- Generate idea in innovations relating treatment of Endoscopic and minimally invasive surgery.
- Obtain view of basic sciences including molecular biology and metabolomics methods in applying for research in Endoscopic and minimally invasive surgery.

4. Course objectives

This course provides a general introduction to Endoscopic and minimally invasive surgery. Common Endoscopic and minimally invasive surgery conditions will be thoroughly explored by means of lecture and clinical experience. Common Endoscopic and minimally invasive operations and procedures will be demonstrated through the course. Selected case studies will be discussed during group discussion. Integration of basic knowledge and innovative procedure including Advanced imaging endoscopy and high technology procedure such as endoscopic surgery, laparoscopic until Robotic assisted for implement to cancer related research.

5. Format

- Lecture: essential topics in Endoscopic and minimally invasive surgery
- Clinical practice: participate in operating theatre, ward round and out-patient encounters in Minimally invasive Surgery Unit, Siriraj Hospital
- Conference and journal club: presentation and participation in discussion
- Group discussion: in-depth discussion with supervisors

6. Course Details

Ward round (7th floor 72yr building): Monday - Friday 7.00-8.00
Operating theater (OR, 5th floor Syamindra building): Monday – Thursday 9.00-16.00
Grand round (12th fl Syamindra building): Thursday 14.00-16.00
Conference and group discussion: to be announced

NO	Date	Time	Topic/Details	Instructors
1	Mon 11-1-21	14.00 – 15.00	Principle of laparoscopic and robotic surgery	Assoc. Prof. Dr. Vitoon Chinswangwatanakul
2	Thu 14-1-21	13.00 – 14.00	Basic principle of endoscopy and innovation	Prof. Thawatchai Akaraviput
3	Mon 18-1-21	45 mins	Minimally invasive of hernia surgery	Assoc. Prof. Dr.Asada Methasate
4	Thu 21-1-21	45 mins	History and principle of esophageal cancer treatment	Assist. Prof. Dr.Jirawat Swangsri
5	Mon 25-1-21	45 mins	Early upper GI cancer detection	Dr. Kumagai Youichi
6	Thu 28-1-21	45 mins	Role of AI in GI malignancy detection	Dr. Hirasawa Toshiaki
7	Mon 1-2-21	45 mins	Principle of ESD for early cancer treatment	Dr. Kawada Kenro
8	Thu 4-2-21	45 mins	Minimally invasive surgery for esophageal cancer	Dr. Yutaka Tokairin
9	Mon 8-2-21	45 mins	Minimally invasive surgery for gastric cancer	Assist. Prof. Thammawat Parakonthun
10	Thu 11-2-21	45 mins	Principle of EUS for subepithelial tumor detection	Assoc. Prof. Nonthalee Pausawasdi

			Midterm Examination	
11	Thu 18-2-21	45 mins	Management of GI subepithelial tumor	Assoc. Prof. Prasit Mahawongkajit
12	Mon 22-2-21	45 mins	Approach to small bowel lesion	Lecturer Julajak Limsrivilai
13	Thu 25-2-21	45 mins	ERCP and innovation	Lecturer Manus Rujivarodom
14	Mon 1-3-21	45 mins	Principle of bariatric endoscopy	Dr. Kotchakorn
15	Thu 4-3-21	45 mins	Role of minimally invasive bariatric surgery	Assist. Prof. Voraboot Taweerutchana
16	Mon 8-3-21	45 mins	Role of minimally invasive endocrine surgery	Lecturer Nicha Srisuvoranan
17	Thu 11-3-21	45 mins	IEE for colon lesion detection	Dr. Uayporn Siriyuyuen
18	Mon 15-3-21	45 mins	Minimally invasive for pelvic floor	Lecturer Siriluck Prapasrivorakul
19	Thu 18-3-21	45 mins	Principle of laparoscopic treatment of colon cancer	Assoc. Prof. Auttaporn Trakarnsanga
20	Mon 22-3-21	45 mins	Minimally invasive for Linear surgery	Assist Prof. Wethit Dumronggittigule
21	Thu 25-3-21	45 mins	Minimally invasive for Pancreatic surgery	Lecturer Pholasith Sangserestid
			Final Examination	

7. Assessment

Grades are based on attendance of lectures, performances on assignments, and levels of attitude, skills and knowledge

8. Prerequisite Reading

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

9. Reference Materials

Jarnagin WR, Allen PJ, Chapman WC, D'Angelica MI, DeMatteo RP, Do RKG, Vauthey JN. Blumgart's Surgery of the Liver, Biliary Tract, and Pancreas. 6th Edition. Philadelphia, PA: Elsevier, 2017.
Further reference will be announced before class.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Assistant Professor Dr. Jirawat Swangsri Tel: +662-419-8005
E-mail: Jirawatmissi@gmail.com
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 607 (4834) Advanced Inter Disciplinary Endoscopy for Gastrointestinal Tract Cancer

(Code: 4834, 1st~2nd year, 1 units)
(Course ID: GS-c4834-L)

1. **Instructors**

Name	Position	Department	Contact Information
Thawatchai Akaraviputh	Chief instructor/ Professor	Division of General Surgery, Department of Surgery	Thawatchai.aka@mahidol.ac.th
Vitoon Chinswangwatanakul	Associate Professor	Division of General Surgery, Department of Surgery	Vitoon.chi@mahidol.ac.th
Asada Methasate	Associate Professor	Division of General Surgery, Department of Surgery	asada.met@mahidol.ac.th
Jirawat Swangsri	Assistant professor	Division of General Surgery, Department of Surgery	Jirawat.swa@mahidol.ac.th
Atthaphorn Trakarnsanga	Associate Professor	Division of General Surgery, Department of Surgery	Atthaphorn.tra@mahidol.ac.th
Thammawat Parakonthun	Assistant Professor	Division of General Surgery, Department of Surgery	Thammawat.par@mahidol.ac.th
Voraboot Taweerutchana	Lecturer	Division of General Surgery, Department of Surgery	Voraboot.taw@mahidol.ac.th
Chainarong Phalanusitthep	Lecturer	Division of General Surgery, Department of Surgery	Chainarong.pha@mahidol.ac.th

2. **Classroom/Lab Lecture**

Lecture: Division of General Surgery, 12th floor Syamindra Building, Siriraj Hospital
Endoscopy Suite: Siriraj GI Endoscopy Center, 3rd floor 84th year Building, Siriraj Hospital
Operating theatre: 5th floor Syamindra Building, Siriraj Hospital

3. **Course Purpose and Outline**

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

- Understand complex diseases in the field of Gastrointestinal Endoscopy and Laparoscopic Surgery.
- Understand treatment in Interdisciplinary Endoscopy.
- Develop research questions relating to Interdisciplinary Endoscopy and their treatment.
- Generate idea in innovations relating treatment of Gastrointestinal Endoscopy.
- Obtain view of basic sciences including molecular biology and metabolomics methods in applying for research in Advanced Interdisciplinary Endoscopy.

4. **Course objective(s)**

This course provides a general introduction to Interdisciplinary Endoscopy. Common Gastrointestinal Endoscopy conditions will be thoroughly explored by means of lecture and clinical experience. Advanced Endoscopic & Laparoscopic treatment will be demonstrated through the course. Selected case studies will be discussed during group discussion. Integration of basic knowledge and innovative procedure including

Advanced imaging endoscopy and high technology procedure such as endoscopic surgery, laparoscopic until Robotic assisted for implement to cancer related research.

5. Format

- Lecture: essential topics in Interdisciplinary Endoscopy.
- Clinical practice: participate in operating theatre, Endoscopy Center and out-patient encounters in Minimally invasive Surgery Unit, Siriraj Hospital
- Conference and journal club: presentation and participation in discussion
- Group discussion: in-depth discussion with supervisors

6. Course Details

Endoscopic Demonstration (Siriraj GI Endoscopy Center: 3rd floor 84th yr. building): Monday 9.00-16.00

Operating theater (OR, 5th floor Syamindra building): Tuesday – Friday 9.00-16.00

Pre- & Post-operative round (12th floor Syamindra building): Thursday 14.00-16.00

Conference and group discussion: to be announced

7. Assessment

Grades are based on attendance of lectures, performances on assignments, and levels of attitude, skills and knowledge

8. Prerequisite Reading

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

9. Reference Materials

Further reference will be announced before class.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Prof. Thawatchai Akaraviputh, MD, FRCST, Dr.med. (Hamburg).
Email:Akaraviputh@gmail.com Tel: +662-419-8005

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR608 (4835) Perioperative Care Surgical Patient

(Code: 4835, 1st~2nd year, 1 units)
(Course ID: GS-c4835-L)

1. Instructors

Name	Position	Department	Contact Information
Varut Lohsiriwat	Professor Dr. (chief instructor)	Division of General Surgery, Department of Surgery	bolloon@hotmail.com, Varut.Loh@mahidol.ac.th
Chutwichai Tovikkai	Associate Professor Dr.	Division of General Surgery, Department of Surgery	Chutwichai.tov@mahidol.ac.th
Thammawat Parakonthun	Associate Professor Dr.	Division of General Surgery, Department of Surgery	Thammawat.par@mahidol.ac.th
Voraboot Taweerutchan	Lecturer	Division of General Surgery, Department of Surgery	Voraboot.taw@mahidol.ac.th
Mingkwan Wongyingsinn	Assistant Professor	Anesthesiology (Preoperative clinic)	Mingkwan.Won@mahidol.ac.th
Jatuporn Sirikun	Assistant Professor	Division of Trauma surgery,Deaprtment of surgery	Jutuporn.sir@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture room and seminar room on 12th floor, Syamindra Building, Faculty of Medicine Siriraj Hospital

3. Course Purpose and Outline

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

- Understand the concept of modern perioperative care including enhanced recovery after surgery (ERAS)
- Understand the key elements of surgical care in preoperative, intraoperative and postoperative period

- Describe the difference of perioperative care in various operations and how to adapt from one to another
- Describe the importance of multidisciplinary team and define what change means to them
- Deal with common problems in perioperative care
- Adapt modern perioperative care in high-risk patients and high-risk operations

4. Course objectives

This course offers a general introduction to modern perioperative care including enhanced recovery after surgery (ERAS). Essential specific details and the key elements of surgical care in preoperative, intraoperative and postoperative period are noted. Selected case studies will be discussed during group discussion.

5. Format

Lectures, group discussions and team project. All programs will be conducted in English.

6. Course Details

NO	Date	Time	Topic/Details	Instructors
1	Thu, 28 Jan 21	9.00 – 12.00	Introduction to perioperative care and enhanced recovery after surgery (ERAS)	Prof. Dr.Varut Lohsiriwat
			Perioperative care in colorectal surgery	Prof. Dr.Varut Lohsiriwat
			Perioperative care in emergency surgery	Prof. Dr.Varut Lohsiriwat
2	Fri, 29 Jan 21	9.00 – 12.00	Prevention of surgical site infection	Prof. Dr.Varut Lohsiriwat
			Nutrition therapy in surgical patients	Prof. Dr.Varut Lohsiriwat
			Why are your surgical patients still in the hospital?	Prof. Dr.Varut Lohsiriwat
3	Mon, 8 Feb 21	13.00 – 16.00	Preoperative optimization	Assoc. Prof. Mingkwan Wongyingsinn
			Patient selection for ambulatory surgery	Assoc. Prof. Mingkwan Wongyingsinn
			Multimodal analgesia	Assoc. Prof. Mingkwan

				Wongyingsinn
4	Thur, 8 Apr 21	14.00 – 16.00	Perioperative care in liver surgery	Assoc. Prof. Dr.Chitwichai Tovikkai
5	Fri 9, Apr 21	14.00 – 16.00	Perioperative care in pancreatic surgery	Assoc. Prof. Dr.Chitwichai Tovikkai
6	Wed, 18 Mar 21	7.30 – 8.30	Perioperative care in upper GI surgery	Assist.Prof. Thammawat Parakonthun
7	Wed, 7 Apr 21	14.00 – 15.00	Perioperative care in morbid obesity	Assist.Prof. Voraboot Taweerutchana
8	Fri, 7 May 21	14.00 – 15.00	Postoperative monitoring	Assist.Prof. Jatuporn Sirikun
9	Fri, 14 May 21	14.00 – 15.00	Dealing with complications in critically ill surgical patients	Assist.Prof. Jatuporn Sirikun
			Final Examination	

7. Assessment

Grades are based on attendance at lecture, performances on assignments, and level of attitude, skill and knowledge.

8. Prerequisite Reading

Reading materials are distributed or specified in advance. Participants are expected to read those materials beforehand.

9. Reference Materials

To be announced before or during individual classes (when relevant).

10. Availability in English

Lectures and all communication are in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: Professor Dr. Varut Lohsiriwat , Department of Surgery
E-mail: Varut.loh@mahidol.ac.th
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

This is an optional course for PhD students (jointed degree between TMDU and Faculty of Medicine Siriraj Hospital, Mahidol University)

Specialized Surgeries

（Code : 4840, 1st – 2nd year: 4 units）
(Course ID: GS-c4801-S)

1. Instructors

Name	Position	Department	Contact Information
KUDO Toshifumi	Associate Professor	Department of Specialized Surgeries	t-kudo.srg1@tmd.ac.jp
OKAMOTO Kentaro	Junior Associate Professor	Department of Specialized Surgeries	okasrg2@tmd.ac.jp

2. Classroom/Lab Lecture Location

Please check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

1) To clarify the etiology and progression of gastrointestinal and breast cancers, and establish adequate treatment strategies.
2) To understand multidisciplinary treatment for unresectable colorectal cancer and recurrence of cancer.
3) To understand the diagnosis and adequate treatment for peripheral vascular disease in cooperation with abdominal surgery.
4) To understand the diagnosis and adequate treatment for pediatric surgery, as well as the differences with adult surgery.

4. Course Objectives

1) To create treatment strategies for various organ-specific cancers.
2) To treat various organ-specific cancers, while taking radical cures and functional disorders into account.
3) To develop and carry out multidisciplinary therapies for relapsed/unresectable cancers.
4) To develop and carry out multidisciplinary therapies for peripheral vascular disease.
5) To develop and carry out multidisciplinary therapies for pediatric surgical diseases.

5. Format

To improve student's presentation and communication abilities, ample opportunities for presentation and discussion will be provided.

6. Class Detail

In order to establish a strategy for treating malignant diseases, it is important to elucidate the mechanism of development and progression of gastrointestinal cancers.Surgical treatment for gastrointestinal cancers may sometime cause physiological dysfunctions and/or hinder digestion. In order to understand the pathogenic mechanism, students will receive lectures on anatomy and physiology. In addition, students will learn about effective treatments for intractable relapsed/unresectable cancers from a multidisciplinary standpoint.

Check the schedule announced at the beginning of the academic year for case conferences, conferences, research progress meetings, journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon. – Fri. 9:00 AM – 17:00 PM

Contact: KUDO Toshifumi, Department of Specialized Surgeries

E-mail: t-kudo.srg1@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

Active participation is expected from those who are interested in digestive tract surgery.

Gastrointestinal Surgery

（Code：4841, 1st – 2nd year: 4 units）

(Course ID: GS－c4841－S)

1. Instructors

Name	Position	Department	Contact Information
KINUGASA Yusuke	Chief Instructor / Professor	Department of Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
TOKUNAGA Masanori	Associate Professor	Department of Gastrointestinal Surgery	tokunaga.srg1@tmd.ac.jp
KAWADA Kenro	Junior Associate Professor	Department of Gastrointestinal Surgery	kawada.srg1@tmd.ac.jp
HARUKI Shigeo	Junior Associate Professor	Department of Gastrointestinal Surgery	s.haruki.srg1@tmd.ac.jp

2. Classroom/Lab Lecture Location

Please check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

In this course, we will study the clinical diagnosis and treatments for highly specialized gastrointestinal diseases that are difficult to diagnose and treat. The causes of gastrointestinal cancers as well as epidemiological examinations will also be studied.

4. Course Objectives

The objective of this course is to learn the clinical diagnosis and treatment of gastrointestinal diseases. Students will write a paper considering the physiological/molecular biological/pathological analysis, diagnosis, treatment and perioperative management of gastrointestinal lesions.

5. Format

With the instructors, clinical questions are discussed in small groups and presented in front of an audience. After debate, participants will format their research into a paper.

6. Class Detail

Our goals are to develop new methods of diagnosis and treatment for gastrointestinal diseases, contributing to society and progression in the medical field. Also, we hope to educate the next generation of young doctors in gastrointestinal and general surgery through comprehensive education and research, in a focused and proactive manner. Please see details below.

Conference: Every Monday and Thursday, 7:30 – 8:30 AM
Lecture, Seminar: Every Tuesday, 18:00 – 19:00 PM

Check the schedule announced at the beginning of the academic year for lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Course Prerequisites

Comprehension of basic surgical methods, diagnosis technologies, and an understanding of the diagnosis and treatment of gastrointestinal diseases is required.

9. 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.
Japanese classification of colorectal carcinoma. Japanese Society for Cancer of the Colon and Rectum, Kanehara & Co., Ltd. Tokyo
Surgery of THE ANUS RECTUM & COLON. Michael RB Keighley & Norman S Williams, W.B Saunders London
Japanese gastric cancer treatment guidelines 2018 (ver.5) Japanese Gastric Cancer Association. Gastric Cancer 2021,24(1):1-21.
Japanese classification of gastric carcinoma: 3rd English edition Japanese Gastric Cancer Association. Gastric Cancer 2011,14:101–112.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: KINUGASA Yusuke, Department of Gastrointestinal Surgery
E-mail: kinugasa.srg1@tmd.ac.jp
(Secretary: Keiko Sakamoto, E-mail: secre.srg1@tmd.ac.jp)
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

Be prepared to enter active discussions, be able to ask questions and be able to answer. No limit on participants.

Hepatobiliary Pancreatic Surgery (TMDU)

（Code：4842, 1st – 2nd year, 4 units）

(Course ID: GS－c4842－S)

1. Instructors

Name	Position	Department	Contact Information
TANABE Minoru	Chief Instructor / Professor	Department of Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
AKAHOSHI Keiichi	Junior Associate Professor	Department of Hepatobiliary and Pancreatic Surgery	akahoshi.msrg@tmd.ac.jp
Hiroaki Ono	Junior Associate Professor	Department of Hepatobiliary and Pancreatic Surgery	ono.msrg@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Course Purpose and Outline

Through the study and treatment of hepatobiliary pancreatic diseases, students will learn and experience their specificity and intractability. Through clinical experiences and basic research, students will be able to identify the diseases' specificity and intractability and contribute to the learning of junior students by giving presentations on their clinical experiences and research findings.

4. Course Objectives

To learn how to examine, diagnose and develop treatment plans for hepatobiliary pancreatic diseases, and be able to actively conduct surgery as either an operator or assistant. Students will engage in clinical and/or basic research, learn proactively in collaboration with the other specialist fields, and give presentations on their findings. Clinical practice is limited to the ranges allowed by Japanese law.

5. Format

Small-group guidance, with opportunities for debate.

6. Course Details

Through the observation of clinical practice, students will learn the latest diagnosis, operative procedures, and chemotherapy, focusing on hepatobiliary and pancreatic cancers. In addition, lectures will cover the latest findings on the biomolecular mechanisms of carcinogenesis, cancer growth, invasion, and metastasis.

HBP Clinical Conference: Every Monday, 16:30-18:00 PM
Journal Club: Every Wednesday, 7:50 – 8:45 AM

Check the schedule announced at the beginning of the academic year for case conferences, research progress meetings, lectures and special lectures.

7. Assessment

An overall assessment comprising class participation (knowledge and understanding of the specialty field, content of presentations, and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Besides knowledge of surgery and digestive surgery, comprehension of basic anatomy and physiology is required.

9. Reference Materials

None.

10. Language Used

Lectures are basically given in English. Clinical meetings, such as case conferences, are conducted in Japanese but are explained in English when appropriate.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: TANABE Minoru, M.D., Ph.D. Department of Hepato-Biliary-Pancreatic Surgery
E-mail: bg-secre.msrg@tmd.ac.jp
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Head and Neck Surgery

（Code : 4843, 1st – 2nd year, 4 units）

(Course ID: GS－c4843－S)

1. Instructors

Name	Position	Department	Contact Information
ASAKAGE Takahiro	Chief Instructor / Professor	Department of Head and Neck Surgery	tasakage.hns@tmd.ac.jp
MORI Hiroki	Professor	Department of Plastic and Reconstructive Surgery	moriplas@tmd.ac.jp
TANAKA Kentaro	Professor	Department of Plastic and Reconstructive Surgery	kenta.plas@tmd.ac.jp
ARIIZUMI Yosuke	Junior Associate Professor	Department of Head and Neck Surgery	ariizumi.hns@tmd.ac.jp

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Course Purpose and Outline

This course aims to develop excellent human resources as head and neck surgeons. For this purpose, the anatomy, pathology, diagnostic methods and treatment strategies of head and neck tumors will be covered. In addition, research will be conducted on new clinical techniques and clinical anatomy in order to contribute to the medical field of neck and head tumors. The course will be composed of lectures, clinical training and research.

4. Course Objectives

1. Understand the clinical characteristics of head and neck tumors.
2. Acquire diagnosis skills related to head and neck tumors through medical examinations, endoscopy and image inspection.
3. The ability to select suitable treatment methods.
4. Research and development on new knowledge regarding head and neck anatomy or treatment

5. Format

Small-group guidance, with opportunities for debate.

6. Course Details

This course chiefly deals with head and neck tumors, excluding intracranial and intra-orbital tumors. Lectures are focused on the clinical characteristics and pathogenesis of head and neck tumors. Furthermore, various treatment strategies for these tumors will be shown and explained.

Otolaryngology—Head and Neck Surgery Joint Conference: every Tuesday 7:45 – 9:00 AM

Check the schedule announced at the beginning of the academic year for research progress meetings, journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising of participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Knowledge of general otorhinolaryngology and surgical oncology are required.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: ASAKAGE Takahiro, Department of Head and Neck Surgery,

E-mail: tasakage.hns@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Urology

（Code: 4844, 1st – 2nd year, 4 units）

(Course ID: GS－c4844－S)

1. Instructors

Name	Position	Department	Contact Information
FUJII Yasuhisa	Chief Instructor / Professor	Department of Urology	y-fujii.uro@tmd.ac.jp
YOSHIDA Soichiro	Associate Professor	Department of Urology	s-yoshida.uro@tmd.ac.jp
TANAKA Hajime	Junior Associate Professor	Department of Urology	hjtauro@tmd.ac.jp

2. Classroom/Lab Lecture Location

Check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

Urology is a surgical specialty that focuses on the urinary tracts, and 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.

4. Course Objectives

By the end of this course, students shall understand the pathophysiology, means of diagnosis and treatment of various urological disorders, and be able to appropriately diagnose, treat and manage patients with these diseases. Students will also learn how to conduct surgery using the da Vinci surgical system, the global standard of robotic-assisted surgery, as well as gasless single-port RoboSurgeon surgery, one of the minimally invasive surgeries, that has been implemented in our department. Through basic and clinical research, students will make new findings which will lead to the improvement of oncological and functional outcomes as well as the QoL of patients with urological diseases.

5. Format

A small class where students will learn through mutual discussion.

6. Course Details

The urinary tracts and the male reproductive system are well controlled by the automatic and somatic nervous systems and the endocrine system. Students will learn about these modulating systems, the destruction of which will lead to various urologic symptoms and diseases. The etiology, diagnosis and treatment of urologic malignant diseases will also be covered.
Clinical Conference: Every Thursday 5:00 – 6:00 PM
Case Conference: Every Thursday 7:00 – 9:00 AM

Check the schedule announced at the beginning of the academic year for journal clubs, lectures and special lectures.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

It is preferable to acquire basic knowledge of urologic diseases and basic research skills before admission.

9. Reference Materials

Kazunori Kihara edited, Gasless Single-Port RoboSurgeon Surgery in Urology, Springer
Kazunori Kihara edited, Gasless single-port retroperitoneoscopic surgery in urology : with robosurgeon in mind, Igaku Tosho Shuppan
CAMPBELL-WALSH UROLOGY, 12th EDITION, ELSEVIER
European Association of Urology Guidelines, https://uroweb.org/guidelines/

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 5:00 PM
Contact: FUJII Yasuhisa, Department of Urology
E-mail: y-fujii.uro@tmd.ac.jp Phone: 03-5803-5295
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 610 (4845) Surgery for Upper GI Cancer

(Code: 4845, 1st year, 4 units)
(Course ID: GS－c4845－S)

1. Instructors

Name	Position	Department	Contact Information
Asada Methasate	Associate Professor Dr. (Chief instructor)	Division of General Surgery, Department of Surgery	asada.met@mahidol.ac.th
Vitoon Chinswangwatanakul	Associate professor Dr.	Division of General Surgery, Department of Surgery	Vitoon.chi@mahidol.ac.th
Thawatchai Akaraviput	Professor	Division of General Surgery, Department of Surgery	Thawatchai.aka@mahidol.ac.th
Jirawat Swangsri	Assistant Professor Dr.	Division of General Surgery, Department of Surgery	Jirawat.swa@mahidol.ac.th
Thammawat Parakonthun	Associate professor Dr.	Division of General Surgery, Department of Surgery	Thammawat.pha@mahidol.ac.th
Chainarong Phalanusitthepha	Lecturer	Division of General Surgery, Department of Surgery	Chainarong.pha@mahidol.ac.th
Voraboot Taweerutchana	Lecturer	Division of General Surgery, Department of Surgery	Voraboot.taw@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture room, Division of General Surgery, Syamindra Building 12th floor

3. Course Purpose and Outline

To teach the student to understand the disease of upper GI cancer from the surgical viewpoint.

The surgery techniques and patient care will be included in this course.

4. Course objectives

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

1. Describe pathogenesis of important upper GI cancer
2. Describe investigation and surgical treatment of upper GI cancer
3. Describe how to approach upper GI cancer
4. Describe the surgery and techniques used in the treatment of upper GI cancer
5. Describe the pre and post operative care of the patients with upper GI cancer

5. Format

Lecture, seminars and conferences. All programs will be delivered in English.

6. Course Details

No.	Time	Topic/Details	Instructors
1	9.00 12.00 13:00-16:00	Upper GI cancer operation 1	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
2	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 1	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
3	9.00 – 12.00	General surgery outpatient clinic 1	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
4	9.00 12.00 13:00-16:00	Upper GI cancer operation 2	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
5	9.00 12.00 13:00-16:00	Upper GI cancer operation 3	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
6	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 2	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
7	9.00 – 12.00	General surgery outpatient clinic 2	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
8	9.00 12.00 13:00-16:00	Upper GI cancer operation 4	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
9	9.00 12.00 13:00-16:00	Upper GI cancer operation 5	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
10	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 3	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer

11	9.00 – 12.00	General surgery outpatient clinic 3	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
12	9.00 12.00 13:00-16:00	Upper GI cancer operation 6	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
13	9.00 12.00 13:00-16:00	Upper GI cancer operation 7	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
14	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 4	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
15	9.00 12.00 13:00-16:00	Upper GI cancer operation 8	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
16	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 5	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
17	9.00 – 12.00	General surgery outpatient clinic 4	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
18	9.00 12.00 13:00-16:00	Upper GI cancer operation 9	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
19	9.00 12.00 13:00-16:00	Upper GI cancer operation 10	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
20	9.00 – 12.00	Upper GI endoscopy 6	Assoc.Prof.Dr. Asada Methasate,M.D. and All

	13:00-16:00		lecturer
21	9.00 – 12.00	General surgery outpatient clinic 5	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
22	9.00 – 12.00 13:00-16:00	Upper GI endoscopy 7	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
23	9.00 – 12.00	General surgery outpatient clinic 6	Assoc.Prof.Dr. Asada Methasate,M.D. and All lecturer
24		Examination	

7. Assessment

Grades are determined based on lecture attendance and written and oral examination. Basic knowledge, surgery, patient care and attitude will be evaluated.

8. Prerequisite Reading

Reading materials will be announced and provided before the course.

9. Reference Materials

To be announced before the class.

11. Language used

All classes are conducted in English.

12. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: Associate Professor Dr. Asada Methasate, Division of General Surgery, Department of Surgery
E-mail: Asada.met@mahidol.ac.th
Please contact the instructor regarding questions or consultations.

13. Note(s) to Students

The student who wish to continue his surgical career in upper GI cancer will have a chance to learn and understand upper GI cancer from basic knowledge to patient care. This is an elective course to be taken during joint Ph.D. program providing by Mahidol University.
This course is included in elective courses in joint Ph.D. program. Ph.D. student focusing in upper GI cancer is encouraged to take this course.

SISR 611 (4846) Surgery for Lower GI Cancer

(Code: 4846, 1st~2nd year, 4 units)
(Course ID: GS－c4846－S)

1. Instructors

Name	Position	Department	Contact Information
Woramin Riansuwan	Chief Instructor/ Associate Professor	Division of General Surgery, Department of Surgery	woramin.ria@mahidol.ac.th
Varut Lohsiriwat	Professor Dr.	Division of General Surgery, Department of Surgery	Varut.loh@mahidol.ac.th
Siriluck Prapasrivorakul	Lecturer	Division of General Surgery, Department of Surgery	Siriluck.pra@mahidol.ac.th
Atthaphorn Trakarnsanga	Associate professor	Division of General Surgery, Department of Surgery	Atthaphorn.tra@mahidol.ac.th
Thammawat Parakonthun	Associate professor Dr.	Division of General Surgery, Department of Surgery	Thammawat.par@mahidol.ac.th
Voraboot Taweerutchana	Lecturer	Division of General Surgery, Department of Surgery	Voraboot.taw@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture room, Division of General Surgery, Syamindra Building 12th floor

3. Course Purpose and Outline

To teach the student to understand the disease of lower GI cancer from the surgical viewpoint.

The surgery techniques and patient care will be included in this course.

4. Course objectives

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

1. Describe pathogenesis of important lower GI cancer
2. Describe investigation and surgical treatment of lower GI cancer
3. Describe how to approach lower GI cancer
4. Describe the surgery and techniques used in the treatment of lower GI cancer
5. Describe the pre and post operative care of the patients with lower GI cancer

5. Format

Lecture, seminars and conferences. All programs will be delivered in English.

6. Course Details

No.	Date	Class Content	Instructor
1.	9:00-12:00	How to approach lower GI cancer	Woramin Riansuwan
2.	9:00-12:00	Pre and post operative care of lower GI cancer	Varut Lohsiriwat
3.	9:00-12:00	Important complications of lower GI cancer surgery	Atthaphorn Trakarnsanga
4.	9:00-12:00	Endoscopic treatment of Lower GI cancer	Thammawat Parakonthun
5.	9:00-12:00	Minimally invasive approach of lower GI cancer	Voraboot Taweerutchana

7. Assessment

Grades are determined based on lecture attendance and written and oral examination. Basic knowledge, surgery, patient care and attitude will be evaluated.

8. Prerequisite Reading

Reading materials will be announced and provided before the course.

9. Reference Materials

To be announced before the class.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Woramin Riansuwan, Division of General Surgery, Department of Surgery
E-mail: woramin.ria@mahidol.ac.th

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

The student who wish to continue his surgical career in lower GI cancer will have a chance to learn and understand lower GI cancer from basic knowledge to patient care. This is an elective course to be taken during joint Ph.D. program providing by Mahidol university.

This course is included in elective courses in joint Ph.D. program. Ph.D. student focusing in lower GI cancer is encouraged to take this course.

SISR 612 (4847) Hepatobiliary Pancreatic Surgery (MU)

(Code: 4847, 1st~2nd year, 4 units)
(Course ID: GS－c4847－S)

1. Instructors

Name	Position	Department	Contact Information
Yongyut Sirivatanauksorn	Chief Instrctor/ Associate Professor Dr.	Division of General Surgery, Department of Surgery	yongyut.sir@mahidol.ac.th
Somchai Limsrichamrern	Assistant Professor	Division of General Surgery, Department of Surgery	somchai96@hotmail.com
Prawej Mahawithitwong	Associate Professor	Division of General Surgery, Department of Surgery	Prawej.mah@mahidol.ac.th
Prawat Kositamongkol	Assistant Professor	Division of General Surgery, Department of Surgery	prawat.kos@mahidol.ac.th
Chutwichai Tovikkai	Associate Professor	Division of General Surgery, Department of Surgery	chutwichai.tov@mahidol.ac.th
Wethit Dumronggittigule	Assistant Professor	Division of General Surgery, Department of Surgery	Wethit.dum@mahidol.ac.th
Pholasith Sangserestid	Lecturer	Division of General Surgery, Department of Surgery	Pholasith.san@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture: Division of General Surgery, 12th floor Syamindra Building, Siriraj Hospital
Ward round: Surgical ward, 7th floor 72th year Building, Siriraj Hospital
Operating theatre: 5th floor Syamindra Building, Siriraj Hospital

3. Course Purpose and Outline

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

- Understand common diseases in the field of hepato-pancreato-biliary surgery
- Understand treatment and operations in treating HPB diseases
- Develop research questions relating to HPB diseases and their treatment.
- Generate idea in innovations relating treatment of HPB diseases

Obtain view of basic sciences including molecular biology and metabolomics methods in applying for research in HPB diseases

4. Course objectives

This course provides a general introduction to hepato-pancreato-biliary (HPB) surgery. Common HPB diseases as well as emergency HPB conditions will be thoroughly explored by means of lecture and clinical experience. Common HPB operations and procedures will be demonstrated through the course. Selected case studies will be discussed during group discussion. Integration of basic sciences including molecular biology and metabolomics methods to answer research questions relating to HPB diseases will also be covered in the course.

5. Format

- Lecture: essential topics in HPB surgery
- Clinical practice: participate in operating theatre, ward round and out-patient encounters in Hepato-Pancreato-Biliary and Transplant Surgery Unit, Siriraj Hospital
- Conference and journal club: presentation and participation in discussion
- Group discussion: in-depth discussion with supervisors

6. Course Details

Ward round (7^{th} floor 72yr building): Monday - Friday 7.00-8.00
Operating theater (OR, 5^{th} floor Syamindra building): Monday – Thursday 9.00-16.00
Grand round (12^{th} fl Syamindra building): Friday 9.00-12.00
Conference and group discussion: to be announced

7. Assessment

Grades are based on attendance of lectures, performances on assignments, and levels of attitude, skills and knowledge

8. Prerequisite Reading

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

9. Reference Materials

Jarnagin WR, Allen PJ, Chapman WC, D'Angelica MI, DeMatteo RP, Do RKG, Vauthey JN. Blumgart's Surgery of the Liver, Biliary Tract, and Pancreas. 6th Edition. Philadelphia, PA: Elsevier, 2017.

Further reference will be announced before class.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Dr. Yongyut Sirivatanauksorn, Division of General Surgery, Department of Surgery
E-mail: yongyut.sir@mahidol.ac.th Tel: +662-419-8005

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

The student who wish to continue his surgical career in lower GI cancer will have a chance to learn and understand lower GI cancer from basic knowledge to patient care. This is an elective course to be taken during joint Ph.D. program providing by Mahidol university.

This course is included in elective courses in joint Ph.D. program. Ph.D. student focusing in lower GI cancer is encouraged to take this course.

SISR 613 (4848) Vascular Surgery

(Code: 4848, 1st~2nd year, 4 units)
(Course ID: GS－c4848－S)

1. Instructors

Name	Position	Department	Contact Information
Chumpol Wongwanit	Chief Instrctor/ Associate Professor	Division of Vascular Surgery, Department of Surgery	Chumpol.won@mahidol.ac.th
Chanean Ruangsetakit	Professor	Division of Vascular Surgery, Department of Surgery	Cheanean.rua@mahidol.ac.th
Khamin Chinsakchai	Associate Professor	Division of Vascular Surgery, Department of Surgery	Khamin.chi@mahidol.ac.th
Nuttawut Sermsathanasawadi	Associate Professor	Division of Vascular Surgery, Department of Surgery	Nuttawut.ser@mahidol.ac.th
Suteekhanit Hahtapornsawan	Assistant Professor	Division of Vascular Surgery, Department of Surgery	Suteekhanit.hah@mahidol.ac.th
Kiattisak Hongku	Lecturer	Division of Vascular Surgery, Department of Surgery	kiattisak.hon@mahidol.ac.th
Nattawut Puangpunngam	Lecturer	Division of Vascular Surgery, Department of Surgery	Nattawut.pua@mahidol.ac.th
Tossapol Prapassaro	Lecturer	Division of Vascular Surgery, Department of Surgery	Tossapol.pra@mahidol.ac.th
Kanin Pruekprasert	Lecturer	Division of Vascular Surgery, Department of Surgery	Kanin.pru@mahidol.ac.th

2. **Classroom/Lab Lecture**

Lecture: Division of Vascular Surgery, 13th floor Syamindra Building, Siriraj Hospital
Lab: 7th floor SIMR building

3. **Course Purpose and Outline**

1. Investigation and research for the social needs identification of Vascular Surgery in the next generation of medical area
2. Medical equipment and development of treatment to meet the needs of Vascular Surgery in the next generation of medical field
3. Research and development of the education curriculum and evaluation methods of Vascular Surgery in the medical field
4. Development and operation of Vascular Surgery of industry-academia cooperation in the medical field
5. Development and operation of technology certification strategy of Vascular Surgery treatment

4. **Course objectives**

1. To learn the advanced technology of vascular surgery in the medical field.
2. To study education of advanced technology, to master the interdisciplinary education technology.
3. To overcome the advanced technology, to learn a new treatment method and technology that the medical device can be proposed and developed.

5. **Format**

Clinical Practice: Surgical tours of the patient's disease, and vascular surgery participation in Siriraj Hospital.
To delve deeper into the problems through discussions with supervisors, make a paper through a small group discussion and presentations at a large number conference.

6. **Course Details**

Check with the teacher in charge for the program which is not specifically scheduled.
<u>Lecture and conference:</u>
As well as understanding the current status of vascular surgery in each area that is required to consider a vascular surgery treatment in the next generation, extracts the challenges for the future.
Available programs: every Monday, Wednesday, and Friday 8.00-9.00
<u>Practice :</u>

To know the outline of the treatment through the case, to perform the acquisition of technology. State of the art technology to find the problem of the solution, for the treatment strategy, and exercises from the practical point of view.

Available programs:

Operating room every Monday- Thursday 9.00-15.00 at Operating room 504, 505

Ward round : every day except Thursday 7.00-8.00

Grand round : every Thursday 7.30-9.00

Lab :

Treatment methods for solving the problems of the vascular surgery, medical equipment, new developed educational method is verified through the animal laboratory and non-clinical trials and clinical trials, to create the paper.

Available programs: Research meeting: week 2 Friday 8.00-9.00

Date	Time	Topic/Details	Instructors
Friday 1 JUL 2022	9.00 - 12.00	Vascular outpatient clinic 1	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 4 JUL 2022	9.00 - 12.00	Ulcer clinic 1	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 5 JUL 2022	10.00 - 12.00	Vascular operation 1	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 6 JUL 2022	9.00 - 12.00	Vascular Ultrasonography 1	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 7 JUL 2022	9.00-12.00	Vascular operation 2	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday 8 JUL 2022	9.00 - 12.00	Vascular outpatient clinic 2	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 11 JUN 2022	9.00 - 12.00	Ulcer clinic 2	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 12 JUL 2022	10.00 - 12.00	Vascular operation 3	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 18 JUL 2022	9.00 - 12.00	Ulcer clinic 3	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 19 JUL 2022	10.00 - 12.00	Vascular operation 4	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 20 JUL 2022	9.00 - 12.00	Vascular Ultrasonography 2	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 21 JUL 2022	9.00-12.00	Vascular operation 5	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday	9.00 - 12.00	Vascular outpatient clinic 3	Assoc. Prof. Chumpol

22 JUL 2022			Wongwanit,M.D. and All Instructors
Monday 25 JUL 2022	9.00 - 12.00	Ulcer clinic 4	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 26 JUL 2022	10.00 - 12.00	Vascular operation 6	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 27 JUL 2022	9.00 - 12.00	Vascular Ultrasonography 3	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 1 AUG 2022	9.00 - 12.00	Ulcer clinic 5	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 2 AUG 2022	10.00 - 12.00	Vascular operation 7	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 3 AUG 2022	9.00 - 12.00	Vascular Ultrasonography 4	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 4 AUG 2022	9.00-12.00	Vascular operation 8	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday 5 AUG 2022	9.00 - 12.00	Vascular outpatient clinic 4	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 8 AUG 2022	9.00 - 12.00	Ulcer clinic 6	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 9 AUG 2022	10.00 - 12.00	Vascular operation 9	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 10 AUG 2022	9.00 - 12.00	Vascular Ultrasonography 5	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 11 AUG 2022	9.00-12.00	Vascular operation 10	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 15 AUG 2022	9.00 - 12.00	Ulcer clinic 7	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 16 AUG 2022	10.00 - 12.00	Vascular operation 11	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 17 AUG 2022	9.00 - 12.00	Vascular Ultrasonography 6	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 18 AUG 2022	9.00-12.00	Vascular operation 12	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday 19 AUG 2022	9.00 - 12.00	Vascular outpatient clinic 5	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 22 AUG 2022	9.00 - 12.00	Ulcer clinic 8	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday	10.00 - 12.00	Vascular operation 13	Assoc. Prof. Chumpol

23 AUG 2022			Wongwanit,M.D. and All Instructors
Wednesday 24 AUG 2022	9.00 - 12.00	Vascular Ultrasonography 7	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 25 AUG 2022	9.00-12.00	Vascular operation 14	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday 26 AUG 2022	9.00 - 12.00	Vascular outpatient clinic 6	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Monday 29 AUG 2022	9.00 - 12.00	Ulcer clinic 9	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Tuesday 30 AUG 2022	10.00 - 12.00	Vascular operation 15	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Wednesday 31 AUG 2022	9.00 - 12.00	Vascular Ultrasonography 8	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Thursday 1 SEP 2022	9.00-12.00	Vascular operation 16	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
Friday 2 SEP 2022	9.00 - 12.00	Vascular outpatient clinic 7	Assoc. Prof. Chumpol Wongwanit,M.D. and All Instructors
	9.00 - 12.00	Examination	Assoc. Prof. Chumpol Wongwanit,M.D.

7. Assessment

Lectures, exercises, external announcement of participation and research content to the research training (conference, paper)

Based on the situation, it is evaluated as a guide to the following proportions. (PhD.)

Lectures, exercises, participation in research and training: 90%

External presentation of research (conference, paper) Status: 10%

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Chumpol Wongwanit, Division of Vascular Surgery,

Department of Surgery
E-mail: wchumpol@gmail.com Tel: +662-4198021
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 615 (4849) Multidisciplinary Approach to Disease of Head Neck and Breast

(Code: 4849, 1st~2nd year, 4 units)
(Course ID: GS－c4849－S)

1. Instructors

Name	Position	Department	Contact Information
Suebwong Chutapisith	Associate Professor Dr.	Division of Head Neck and Beast, Department of Surgery	suebwong.chu@mahidol.ac.th
Pongthep Pisarnthurakit	Lecturer	Division of Head Neck and Beast, Department of Surgery	Pongthep.pis@mahidol.ac.th
Waraporn Imruetaicharoenchoke	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Waraporn Imr@mahidol.ac.th
Pradit Rushatamukayanunt	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Pradit.rus@mahidol.ac.th
Mongkhol Boonsripithayanont	Lecturer	Division of Head Neck and Beast, Department of Surgery	Mongkhol.boo@mahidol.ac.th
Visnu Lohsiriwat	Associate Professor	Division of Head Neck and Beast, Department of Surgery	Visnu.loh@mahidol.ac.th
Pradit Rushatamukaya nunt	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Pradit.rus@mahidol.ac.th

Doonyapat Sanguanraksa	Lecturer Dr.	Division of Head Neck and Beast, Department of Surgery	Doonyapat.san@mahidol.ac.th
Warapan Numprasit			

2. Classroom/Lab Lecture

Check the venues announced at the beginning of the academic year.

3. Course Purpose and Outline

[Course Purpose]

Multidisciplinary approach to management of diseases of head neck and breast is crucial to better outcome. Multidisciplinary Treatment planning will be educated.

[Course Outline]

The student will experience clinical approaches to diseases of head neck and breast. Various aspect of management including radio-diagnostic procedures, surgical approaches and adjuvant loco-regional or systemic therapy will be discussed and experienced.

4. Course objectives

Because the team approaches are the paramount important tools toward better outcome in management of disease of head neck and breast. The students will be able to understand treatment plan for the patients.

5. Format

The course includes lectures, seminars, clinical attachment to outpatient department and operating theatre.

6. Course Details

Time	Topic/Details	Instructors
8.00 – 9.00	Evidence-based in Head neck and Breast surgery conference 1	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Evidence-based in Head neck and Breast surgery conference 2	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Evidence-based in Head neck and Breast surgery conference 3	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Evidence-based in Head neck and Breast surgery	Assoc.Prof.Dr.Suebwong

	conference 4	Chuthapisith and All Staff
8.00 – 9.00	Evidence-based in Head neck and Breast surgery conference 5	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Perioperative care in Head neck and Breast surgery conference 1	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Perioperative care in Head neck and Breast surgery conference 2	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Perioperative care in Head neck and Breast surgery conference 3	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Perioperative care in Head neck and Breast surgery conference 4	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Perioperative care in Head neck and Breast surgery conference 5	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Head neck and Breast surgery Grand round 1	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Head neck and Breast surgery Grand round 2	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Head neck and Breast surgery Grand round 3	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Head neck and Breast surgery Grand round 4	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
8.00 – 9.00	Head neck and Breast surgery Grand round 5	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
9.00 – 12.00	Head neck and Breast surgery outpatient clinic 1	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
9.00 – 12.00	Head neck and Breast surgery outpatient clinic 2	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
9.00 – 12.00	Head neck and Breast surgery outpatient clinic 3	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
9.00 – 12.00	Head neck and Breast surgery outpatient clinic 4	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
9.00 – 12.00	Head neck and Breast surgery outpatient clinic 5	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
13.00 – 16.00	Head neck and Breast surgery operation 1	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
13.00 – 16.00	Head neck and Breast surgery operation 2	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
13.00 – 16.00	Head neck and Breast surgery operation 3	Assoc.Prof.Dr.Suebwong

		Chuthapisith and All Staff
13.00 – 16.00	Head neck and Breast surgery operation 4	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff
13.00 – 16.00	Head neck and Breast surgery operation 5	Assoc.Prof.Dr.Suebwong Chuthapisith and All Staff

7. Assessment

None.

8. Prerequisite Reading

None.

9. Reference Materials

None.

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact:, Associate Professor Dr.Suebwong Chutapisith, Division of Head Neck and Beast, Department of Surgery

E-mail: suebwong.chu@mahidol.ac.th

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 614 (4850) Urology

(Code: 4850, 1st~2nd year, 4 units)
(Course ID: GS－c4850－S)

1. Instructors

Name	Position	Department	Contact Information
Sittiporn Srinualnud	Associate Professor	Division of Urology Surgery, Department of Surgery	Sittiporn.sri@mahidol.ac.th
Siros Jitpraphai	Lecturer	Division of Urology Surgery, Department of Surgery	Siros.jit@mahidol.ac.th
Varat Woranisakul	Lecturer	Division of Urology Surgery, Department of Surgery	Varat.wor@mahidol.ac.th
Chalairat Suk-ouichai	Lecturer	Division of Urology Surgery, Department of Surgery	Chalairat.suk@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture: Division of Urology Surgery, 12th floor Syamindra Building, Siriraj Hospital
Ward round: Urology ward, 7th (North) floor Chalermphrakiet Building, Siriraj Hospital
Operating theatre: 5th floor Syamindra Building, Siriraj Hospital

3. Course Purpose and Outline

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

- Understand common diseases in Urology
- Understand treatment and operations in Urology
- Develop research questions relating to Urology
- Generate idea in innovations relating treatment of Urology

4. Course objectives

This course provides a general knowledge in the disease and treatment of Urology

5. Format

- Lecture: essential topics in Urology
- Clinical practice: participate in operating theatre, ward round and out-patient
- Conference and journal club: presentation and participation in discussion
- Group discussion: in-depth discussion with supervisors

6. Course Details

Ward round (7th (North) floor Chalermphrakiet Building, Siriraj Hospital):
Monday – Friday 7.00-8.00
Operating theater (OR, 5th floor Syamindra building): Monday – Friday 9.00-16.00
Grand round Friday 8.00-9.00
Conference and group discussion: to be announced

7. Assessment

Grades are based on attendance of lectures, performances on assignments, and levels of attitude, skills and knowledge

8. Prerequisite Reading

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

9. Reference Materials

Campbell-Walsh Urology Edition 11th

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM
Contact: Napaporn Sukhasem, Department of Surgery
E-mail: NPK712@Gmail.com Tel: +662-419-8010
Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Stem Cell Regulation

（Code：4861, 1st – 2nd year, 4 units）

(Course ID: GS－c4861－S)

1. Instructors

Name	Position	Department	Contact Information
TAGA Tetsuya	Chief Instructor / Professor	Department of Stem Cell Regulation	taga.scr@mri.tmd.ac.jp
TABU Kouichi	Junior Associate Professor	Department of Stem Cell Regulation	k-tabu.scr@mri.tmd.ac.jp
MUROTA Yoshitaka	Assistant Professor	Department of Stem Cell Regulation	muro.scr@mri.tmd.ac.jp

2. Classroom/Lab Lecture Location

Check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

The purpose of this course is for students to improve their ability 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. Through this course, students will comprehensively understand stem cells in normal and pathological conditions. 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.

4. Course Objectives

The objectives of this course are as follows: To help students absorb knowledge and research strategies 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 help students learn molecular biological, cell biological and histological methods for conducting research projects. To develop students' capacity to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve them, properly discuss experimental results and report their research summaries in English.

5. Format

This course is set up for a small number of students to allow for more intense discussion and in-depth participation.

6. Class Detail

In order to understand tissue development and regeneration from biological and clinical viewpoints, it is important to study the molecular regulation of stem cell maintenance and fate specification. We place particular focus not only on normal tissue stem cells (e.g. neural and hematopoietic stem cells) but also on cancer stem cells, which 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 cues such as epigenetic modifications as cell fate regulatory elements.

Research Meeting: Every Friday 15:00 – 16:30 PM

Check the schedules announced at the beginning of the academic year for lectures and special lectures.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Students should read advanced literature and papers published in international academic journals on stem cell regulations. They should also possess the necessary skills to run Word, Excel, and PowerPoint, which are used in lectures and practice.

9. 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/)

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon: 11:00 AM – 12:00 PM (make an appointment by e-mail)

Contact: TAGA Tetsuya, Department of Stem Cell Regulation
E-mail address: taga.scr@mri.tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

Participants are required to study on a voluntary basis.

Clinical Anatomy

（Code：4862, 1st – 2nd year, 4 units）
(Course ID: GS－c4862－S)

1. Instructors

Name	Position	Department	Contact Information
AKITA Keiichi	Chief Instructor / Professor	Department of Clinical Anatomy	akita.fana@tmd.ac.jp
NIMURA Akimoto	Professor	Department of Clinical Anatomy	nimura.orj@tmd.ac.jp
HARADA Masayo	Junior Associate Professor (Career Track)	Department of Clinical Anatomy	harada.fana@tmd.ac.jp
MUROU Satoru	Assistant Professor	Department of Clinical Anatomy	muro.fana@tmd.ac.jp

2. Classroom/Lab Lecture Location

Check the locations announced at the beginning of the academic year.

3. Course Purpose and Outline

Clinical Anatomy is a field of study that involves solving problems in clinical medicine through formulations of human anatomical and developmental biological diagnoses and surgical procedures. This course is aimed at understanding the structure of the human body based on the human anatomy and acquiring the ability to describe the human body structures clearly from observational findings.

4. Course Objectives

The course is aimed at understanding the spatial arrangements of human body structures from various angles and acquiring powers of observation as a medical worker, researcher and student of clinical anatomy.

5. Format

Small group instruction to facilitate free discussion, based on actual findings, between participants and instructors.

6. Course Details

Clinical anatomy is vital for proper diagnosis and treatment. In this course, students will observe the structure of the human body from diversified perspectives, learn how to read anatomical maps, which are crucial for understanding anatomy, and study the basic composition of the human body. Comparative anatomy and developmental biology are also applied for a better understanding of the spatial arrangement of organs, vessels and more. Furthermore, viewpoints from clinical anatomy and local anatomy, the foundations of clinical anatomy, will be considered, as well as the anatomy of the lymphatic system, autonomous nervous system, fascial system and central nervous system.

Check the schedule announced at the beginning of the academic year for research progress meetings, journal clubs, graduate school lectures and graduate school special lectures.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Reading should be completed to understand the basic anatomical structures and the developmental processes of the parts of the body that each student is interested in. Further, reading should be completed to pick up unclear or controversial issues on diagnoses and surgical procedures.

9. Reference Materials

Gray's Anatomy for Students, Third Edition, 2014, Elsevier, Langman's Medical Embryology, Thirteenth Edition, 2015, Wolters Kluwer Lippincott Williams & Wilkins, Principles of Development, Fourth Edition, 2011, Oxford University Press

10. Language used in class

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: AKITA Keiichi, Department of Clinical Anatomy
E-mail: akita.fana@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

No limit on number of participants.

Developmental and Regenerative Biology

(Code: 4863, 1st – 2nd year, 4 units)

(Course ID: GS－c4863－S)

1. Instructors

Name	Position	Department	Contact Information
NISHINA Hiroshi	Chief Instructor / Professor	Department of Developmental and Regenerative Biology	nishina.dbio@mri.tmd.ac.jp
KOFUJI Satoshi	Junior Associate Professor	Department of Developmental and Regenerative Biology	kofuji.dbio@mri.tmd.ac.jp
OKAMOTO Yoshimi	Assistant Professor	Department of Developmental and Regenerative Biology	okamoto.dbio@mri.tmd.ac.jp

2. Classroom/Lab Lecture Location

Check the venues announced at the beginning of the academic year.

3. Course Purpose and Outline

This course aims to facilitate acquisition of concepts and methods in cutting-edge biology and medicine.

4. Course Objectives

The objective of this course is for students to be able to discuss future developments by applying cutting-edge concepts and techniques to their research.

5. Format

The class size will be kept small, as either one-on-one or seminar format. Guidance for experiments will be provided individually.

6. Course Details

You will learn about mechanisms of signal transduction during “mouse and fish” development through lectures and small group discussions. Your goal is to obtain sufficient knowledge in this field to enable you to work on your research projects independently.

“Developmental and Regenerative Biology” seminar: Every Thursday 10:00 AM – 12:00 PM

Check the schedule announced at the beginning of the academic year for journal clubs, lectures, special lectures and seminars.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Please gather your thoughts on what interests you, or what you find strange in life phenomena.

9. Reference Materials

Molecular Cell Biology 8th edition by Lodish et al.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: NISHINA Hiroshi, Department of Developmental and Regenerative Biology

E-mail: nishina.dbio@mri.tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None

Biomechanics

(Code: 4864, 1st – 2nd year, 4 units)

(Course ID: GS－c4864－S)

1. Instructors

Name	Position	Department	Contact Information
NAKAJIMA Yoshikazu	Chief Instructor / Professor	Department of Biomedical Information	nakajima.bmi@tmd.ac.jp
ONOGI Shinya	Associate Professor	Department of Biomedical Information	onogi.bmi@tmd.ac.jp
ZHOU Dongbo	Assistant Professor	Department of Biomedical Information	zhou.bmi@tmd.ac.jp
SUGINO Takaaki	Assistant Professor	Department of Biomedical Information	sugino.bmi@tmd.ac.jp

2. Classroom/Lab Lecture Location

Department of Bioinformation, Institute of Biomaterials and Bioengineering 4F

3. Course Purpose and Outline

The purpose of this course is to learn the basic technologies of biomechanics, which is based on the study of body movements/structure from mechanical and informational points of view. The course will cover the basics of robotics, control engineering and statistical analysis of human body. By the end of this course, students will be capable of advancing the research and development of medical devices, especially devices and systems for minimally invasive surgeries.

4. Course Objectives

Students will acquire fundamental knowledge of biomechanics, and learn how to research and develop medical devices, especially devices and systems for minimally invasive surgery.

5. Format

The class size will be kept small, in order to focus on the acquisition of fundamental knowledge and skills.

6. Course Details

Learn about mechanical design and control engineering for medical devices based on biomechanics. Master the basic skills to develop devices through seminars by researchers and engineers working on medical devices and systems. Acquire basic knowledge of risk analysis and statistical analysis, which is required for evaluating robotic surgery systems.

Seminar: Every Monday 14:00 – 16:00 PM

Check the schedule announced at the beginning of the academic year for journal clubs, lectures, special lectures and seminars.

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

Basic knowledge of robotic surgery, mechanical and control engineering is recommended.

9. Reference Materials

None.

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: NAKAJIMA Yoshikazu, Department of Biomedical Information
E-mail: nakajima.bmi@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

All students interested in medical devices and robotics are welcome.

Clinical Oncology

（Code : 4865, 1st – 2nd year: 4 units）

(Course ID: GS－c4865－S)

1. Instructors

Name	Position	Department	Contact Information
Mori Takehiko	Chief Instructor / Professor	Department of Hematology	mori.hema@tmd.ac.jp

2. Classroom/Lab Lecture Location

Daigakuin Kogishitsu 3, M&D Tower 11F

3. Course Purpose and Outline

To provide an overview of the field of clinical oncology by acquiring systematic knowledge of palliative medicine, medical oncology and comprehensive cancer examination and treatment.

4. Course Objectives

1. To acquire comprehensive knowledge of oncology and the skills to explain it to others.
2. To facilitate discussion in the field of multi-disciplinary collaboration.
3. To acquire knowledge regarding methods to improve patients' QOL, and to be able to put them to practice.

5. Format

Class sizes are kept small to facilitate discussion and communication.

6. Class Detail

To be able to provide cross-sectional cancer examinations that take biological profiles, clinical and social medicine as well as cultural aspects into account, in addition to traditional organ-specific cancer diagnosis. While focusing on palliative medicine and cancer chemotherapy, students will learn about regional collaboration and team medical care, equipping them to become future leaders of comprehensive cancer examination and treatment.

Check the schedule announced at the beginning of the academic year for research progress meetings and journal clubs.

Conferences:
Monday 17:00 PM: Palliative care team conference
Thursday 18:00 PM – 19:00 PM: every third Thursday = Cancer board, every first, second and fourth Thursday = Genome cancer board

7. Assessment

An overall assessment comprising of class participation (knowledge and understanding of the specialty field, content of presentations and Q&A) (50%) and involvement in research (50%) will be made.

8. Prerequisite Reading

None.

9. Reference Materials

Oxford Textbook of Palliative Medicine

10. Language Used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Mori Takehiko, Department of Hematology,

E-mail: mori.hema@tmd.ac.jp

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

It is expected that anyone who is interested in the field of oncology will participate actively.

SISR 617 (4866) Principles in Systems Pharmacology

(Code: 4866, 1st~2nd year, 4 units)
(Course ID: GS－c4866－S)

1. Instructors

Name	Position	Department	Contact Information
Chief Instructor: Somponnat Sampattavanich	Lecturer	Department of Pharmacology	Somponnat.sam@mahidol.ac.th

2. Classroom/Lab Lecture

Lecture
Lecture Room 1119, Department of Pharmacology

3. Course Purpose and Outline

Systems-level reasoning of complex biological processes; advanced omics techniques for systems pharmacology research; Basics in handling big data from omics measurement; Computational concepts in biomolecular dynamics, signaling cascades, feedback regulations and biological noises.

4. Course objectives

By the end of the course, participants will be able to understand princiciples of systems pharmacology and research, ranging from data gathering to computational biology.

5. Format

Lectures, group discussion, report presentation
All programs will be conducted in English.
All class activities will be provided in an online format via Moodle platform

6. Course Details

No.	Date	Time	Topic	Lecturer
			Module I: Quantitative foundations for systems pharmacology	
1		09.00-12.00	What is systems approach + MATLAB tutorial	Somponnat
2		09.00-12.00	Mathematical representation of biological systems	Somponnat
3		09.00-12.00	Rate law and basic biomolecular dynamics	Somponnat
			Module II: Mechanistic approach	
4		09.00-12.00	Mechaelis Menten kinetics, avidity and cooperativity	Somponnat
5		09.00-12.00	Solving dynamic models: ode solvers	Somponnat
6		09.00-12.00	Stability and noise in biology	Somponnat
7		09.00-12.00	Important network motifs and synthetic biology	Pakpoom(Naresuan)
		09.00-12.00	Exam SIPM508 (I): 1 - 7	Faculty
			Module III: Data-driven approach	
8		09.00-12.00	Graph Theory basics	Metha
9		09.00-12.00	Surveying complex biological systems	Siwanon
10		09.00–12.00	Important databases and basics of data mining	Sira(CU)
11		09.00-12.00	Building regression models	Metha

Module IV: Applications in Pharmacology				
12		09.00-12.00	PK/PD modeling	Dr.Paul
13		09.00-12.00	Cancer drug discovery	Siwanon
14		09.00-12.00	Precision Medicine	Manop
15		09.00-12.00	Student Projects	Faculty
		09.00-12.00	Exam SIPM508 (II): 8 - 14	Faculty

7. Assessment

Scoring

Exam 50%

Student Project 40%j

Attendance 10%

Grade

A more than 80

B+ between 75-79

B between 70-74

Criterion-reference grading

A = 80 points or more

B+ = 70 - 79.99 points

B = 60 - 69.99 points

C = 50 - 59.99 points

D = 40 - 49.99 points

F = 0 - 39.99 points

8. Prerequisite Reading

When reading materials are given or specified in advance, participants are expected to study those materials before attending the class.

9. Reference Materials

To be announced before individual classes

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Lecturer Somponnat Sampattavanich, Department of Pharmacology
Email : Somponnat@gmail.com

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

SISR 618 (4867) Stem cell science

(Code: 4867, 1st~2nd year, 4 units)
(Course ID: GS－c4867－S)

1. Instructors

Name	Position	Department	Contact Information
Nuttawut Sermsathanasawadi	Chief Instrctor/ Associate Professor Dr.	Division of Vascular Surgery, Department of Surgery	Nuttawut.ser@mahidol.ac.th

2. Classroom/Lab Lecture

Laboratory Room, SiMR 5th Floor and Laboratory Room Srisavarindhira 10th Floor, Faculty of Medicine Siriraj hospital, Mahidol University

3. Course Purpose and Outline

Comprehensive view of the stem cell biology, the potential uses of stem cell in clinical practices, stem cell biology of both embryonic and adult stem cells including characteristics at cellular and molecular levels, signaling transduction, stem cell interactions with their microenvironment and their role in tissue homeostasis, basic technology involving in stem cell research, hematopoietic stem cell transplantation as a standard treatment for hematological disorders, potential uses and limitations of stem cells for the treatment of diseases other than hematological disorders, ethics in animal care and use for research and ethical issues of stem cell applications

4. Course objectives

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

1. Scientific principles which underlie stem cell biology and regulation of stem cells and human diseases connected to stem cell biology.
2. Describe various types of stem cells in the human body and their potential applications in regenerative medicine.
3. Understand the clinical, ethical and regulatory aspects of the applications of stem cell therapy.
4. Learn laboratory techniques that could be used in stem cell research.
5. Demonstrate a group working and responsibility for work assigned.
6. Demonstrate effective communication skills for scientific presentation.

7. Identify and critically address a scientific question in regenerative medicine.

5. Format

Lectures, group discussion, report presentation

All programs will be conducted in English.

All class activities will be provided in an online format via Moodle platform

6. Course Details

No.	Date	Time	Topic/Details	Instructors
1	Thu 07-01-2021	13.00-16.00	Introduction to Laboratory	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
2	Fri 08-01-2021	13.00-16.00	Basic Lab Instruments and Equipments	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
3	Thu 14-01-2021	13.00-16.00	Basic Lab Instruments and Equipments	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
4	Fri 15-01-2021	13.00-16.00	Basic Lab Instruments and Equipments	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
5	Thu 21-01-2021	13.00-16.00	Basic Lab Instruments and Equipments	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
6	Fri 22-01-2021	13.00-16.00	Good Lab Practice	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
7	Thu 28-01-2021	13.00-16.00	Blood Perfusion and Laser Doppler	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
8	Fri 29-01-2021	13.00-16.00	Blood Perfusion and Laser Doppler	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
9	Thu 04-02-2021	13.00-16.00	Basic Cell Culture	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
10	Fri 05-02-2021	13.00-16.00	Basic Cell Culture	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut

				Sermsathanasawadi
11	Thu 11-02-2021	13.00-16.00	Basic Flow Cytometrty	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
12	Fri 12-02-2021	13.00-16.00	Basic Flow Cytometrty	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
13	Thu 18-02-2021	13.00-16.00	Hand on operation Flow Cytometer	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
			Midterm Examination Presentation	
14	Fri 19-02-2021	13.00-16.00	QQMNC cultivation	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
15	Thu 25-02-2021	13.00-16.00	Phenotypic and characterization of Cells	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
16	Fri 26-02-2021	13.00-16.00	Apoptosis test by Flowcytometry	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
17	Thu 04-03-2021	13.00-16.00	Colony forming assay	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
18	Fri 05-03-2021	13.00-16.00	Tube formation	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
19	Thu 11-03-2021	13.00-16.00	Insight of Confocal Microscopy	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
20	Fri 12-03-2021	13.00-16.00	IPS Derived EPC	Dr.Nuttapol Chruewkamlow,
21	Thu 18-03-2021	13.00-16.00	IPS Derived EPC	Dr.Nuttapol Chruewkamlow,
22	Fri 19-03-2021	13.00-16.00	IPS Derived EPC	Dr.Nuttapol Chruewkamlow,
23	Thu 25-03-2021	13.00-16.00	IPS Derived EPC	Dr.Nuttapol Chruewkamlow,

24	Fri 26-03-2021	13.00-16.00	Lab Discussion	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
25	Thu 01-04-2021	13.00-16.00	Lab Discussion	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
26	Fri 02-04-2021	13.00-16.00	Lab Discussion	Dr.Nuttapol Chruewkamlow, Assoc.Prof.Dr. Nuttawut Sermsathanasawadi
			Final Examination	

7. Assessment

Scoring

Direct observation	60**%**
Case Presentation	40%

8. Prerequisite Reading

When reading materials are given or specified in advance, participants are expected to study those materials before attending the class.

9. Reference Materials

To be announced before individual classes

10. Language used

All classes are conducted in English.

11. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: Associate Professor Dr.Nuttawut Sermsathanasawadi, Division of Vascular Surgery, Department of Surgery

Email: Nuttawut.ser@mahidol.ac.th Tel +662-4198021

Please contact the instructor regarding questions or consultations.

12. Note(s) to Students

None.

Experiments and Thesis Writing at TMDU

(Code: 4870, 2nd – 4th year, 24 units)

(Course ID: GS－c4870－T)

1. **Instructors**
   As stated in the accompanying sheet

2. **Classroom/Lab Lecture**
   The lecture room may vary according to the program or classroom event.
   Consult with your instructor regarding the appropriate research laboratory or research guidance room before attending the lecture.

3. **Course Purpose and Outline**
   Each student will explore a specific research topic in the specialized surgical field or in the field of medical science related to surgery of his/her own initiative. To help students write highly original and practical dissertations on the results of their research based on scientific grounds, instructors at both universities will instruct them using various methods such as a video conference system and e-mail meetings.

4. **Course Objectives**
   Each student explores a specific research topic of his/her own initiative and writes a dissertation on the results of the research. Participants are to complete their dissertation in order to be assessed for their degree and evaluation through final examination.

5. **Format**
   Classes are conducted in small groups.

6. **Course Description and Timetable**
   - Experiments and data collection
   - Data analysis
   - Evaluating the adequacy of data collection and data analysis
   - Writing a dissertation and preparing a dissertation presentation

7. **Assessment**
   Students are graded according to their dissertation presentation and the assessment of it towards their degree.

8. **Prerequisite Reading**
   None

9. **Reference Materials**
   None

10. **Language Used**
    All classes are conducted in English.

11. Office Hours

Please contact the chief instructor and associate instructor. Problems that emerge in carrying out research will be addressed by the program steering committee.

12. Note(s) to Students

None

No.	Name	Position	Department	Contact
1	AKITA Keiichi	Professor	Clinical Anatomy	akita.fana@tmd.ac.jp
2	ASAKAGE Takahiro	Professor	Head and Neck Surgery	tasakage.hns@tmd.ac.jp
3	MORI Hiroki	Professor	Plastic and Reconstructive Surgery	moriplas@tmd.ac.jp
4	TANAKA Kentaro	Professor	Plastic and Reconstructive Surgery	kenta.plas@tmd.ac.jp
5	NAKAJIMA Yoshikazu	Professor	Biomedical Information	nakajima.bmi@tmd.ac.jp
6	KINUGASA Yusuke	Professor	Gastrointestinal Surgery	kinugasa.srg1@tmd.ac.jp
7	TAGA Tetsuya	Professor	Stem Cell Regulation	taga.scr@mri.tmd.ac.jp
8	TAKADA Kazuki	Professor	Professional Development in Health Sciences	takada.rheu@tmd.ac.jp
9	TANAKA Shinji	Professor	Molecular Oncology	tanaka.monc@tmd.ac.jp
10	TANAKA Toshihiro	Professor	Human Genetics and Disease Diversity	ttana.brc@tmd.ac.jp
11	TANABE Minoru	Professor	Hepatobiliary and Pancreatic Surgery	tana.msrg@tmd.ac.jp
12	NAKAMURA Keiko	Professor	Global Health Entrepreneurship	nakamura.ith@tmd.ac.jp
13	NISHINA Hiroshi	Professor	Developmental and Regenerative Biology	nishina.dbio@mri.tmd.ac.jp
14	FUJII Yasuhisa	Professor	Urology	y-fujii.uro@tmd.ac.jp
15	FUJIWARA Takeo	Professor	Global Health Promotion	fujiwara.hlth@tmd.ac.jp
16	MIURA Masahiko	Professor	Oral Radiation Oncology	masa.mdth@tmd.ac.jp
17	OKAMOTO Ryuichi	Professor	Department of Gastroenterology and Hepatology	rokamoto.gast@tmd.ac.jp
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19	YOSHIDA Masayuki	Professor	Life Sciences and Bioethics	masa.vasc@tmd.ac.jp
20	TAKAHASHI Kunihiko	Professor	Department of Biostatistics	kunihikot.dsc@tmd.ac.jp
21	MORI Takehiko	Professor	Department of Hematology	mori.hema@tmd.ac.jp

22	KUDO Toshifumi	Associate Professor	Specialized Surgeries	t-kudo.srg1@tmd.ac.jp
23	YOSHIDA Soichiro	Associate Professor	Urology	s-yoshida.uro@tmd.ac.jp
24	TAKAGI Masatoshi	Professor	Pediatrics and Developmental Biology	m.takagi.ped@tmd.ac.jp
25	TOKUNAGA Masanori	Associate Professor	Gastrointestinal Surgery	tokunaga.srg1@tmd.ac.jp
26	MICHI Yasuyuki	Associate Professor	Department of Oral and Maxillofacial Surgical Oncology	y-mic.mfs@tmd.ac.jp
27	NAMIKI Takeshi	Associate Professor	Dermatology	tnamderm@tmd.ac.jp
28	TABU Kouichi	Junior Associate Professor	Stem Cell Regulation	k-tabu.scr@mri.tmd.ac.jp
29	ARIIZUMI Yosuke	Junior Associate Professor	Head and Neck Surgery	ariizumi.hns@tmd.ac.jp
30	NAKAMURA Yuki	Assistant Professor	Urology	nakamura.uro@tmd.ac.jp
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33	OKADA Takuya	Associate Professor	Gastrointestinal Surgery	t-okada.srg1@tmd.ac.jp
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36	KUDO Atsushi	Associate Professor	Hepatobiliary and Pancreatic Surgery	kudomsrg@tmd.ac.jp
37	KURATA Morito	Junior Associate Professor	Comprehensive Pathology	kurata.pth2@tmd.ac.jp
38	SEINO Kaoruko	Junior Associate Professor	Global Health Entrepreneurship	seino.ith@tmd.ac.jp
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40	ONO Hiroaki	Junior Associate Professor	Hepatobiliary and Pancreatic Surgery	ono.msrg@tmd.ac.jp
41	AKAHOSHI Keiichi	Junior Associate Professor	Hepatobiliary and Pancreatic Surgery	akahoshi.msrg@tmd.ac.jp
42	KOFUJI Satoshi	Junior Associate Professor	Developmental and Regenerative Biology	kofuji.dbio@mri.tmd.ac.jp

43	MORITA Ayako	Junior Associate Professor/ Associate Professor (Career Track)	Global Health Promotion	morita.hlth@tmd.ac.jp
44	ITO Takashi	Assistant Professor	Human Pathology	t.ito.pth1@tmd.ac.jp
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46	SUGINO Takaaki	Assistant Professor	Biomedical Information	sugino.bmi@tmd.ac.jp
47	OKAMOTO YOSHIMI	Assistant Professor	Developmental and Regenerative Biology	okamoto.dbio@mri.tmd.ac.jp
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49	HARUKI Shigeo	Junior Associate Professor	Gastrointestinal Surgery	s.haruki.srg1@tmd.ac.jp
50	AKIYAMA Yoshimitsu	Junior Associate Professor	Molecular Oncology	yakiyama.monc@tmd.ac.jp
51	MUROU Satoru	Assistant Professor	Clinical Anatomy	muro.fana@tmd.ac.jp
52	FUJIWARA Hisashi	Assistant Professor	Gastrointestinal Surgery	hfujiwara.srg1@tmd.ac.jp
53	HARADA Masayo	Assistant Professor/ Junior Associate Professor (Career Track)	Clinical Anatomy	harada.fana@tmd.ac.jp
54	TAKAOKA Ayumi	Assistant Professor	Gastrointestinal Surgery	takaoka.srg1@tmd.ac.jp
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56	MATSUYAMA Yusuke	Associate Professor	Global Health Promotion	matsuyama.hlth@tmd.ac.jp
57	ONOGI Shinya	Associate Professor	Biomedical Information	onogi.bmi@tmd.ac.jp
58	YAMAUCHI Shinichi	Assistant Professor	Gastrointestinal Surgery	s-yamauchi.srg2@tmd.ac.jp
59	YAMAMOTO Kohei	Junior Associate Professor	Comprehensive Pathology	yamamoto.pth2@tmd.ac.jp
60	TANAKA Hajime	Junior Associate Professor	Urology	hjtauro@tmd.ac.jp

SISR 799 (4871) Experiments and Thesis Writing at MU

(Code: 4871, 2nd – 4th year, 24 units)

(Course ID: GS－c4871－T)

1. Instructors

As stated in the accompanying sheet

No.	Name	Position	Department	Contact
1	Vitoon Chinswangwatanakul	Associate Professor Dr.	Division of General Surgery, Department of Surgery	Vitoon.chi@mahidol.ac.th
2	Thawatchai Akaraviputh	Professor	Division of General Surgery, Department of Surgery	Thawatchai.aka@mahidol.ac.th
3	Manop Pithukpakorn	Professor		
4	Pornprom Muangman	Professor	Traumatology Surgery	Pornprom.mua@mahidol.ac.th
5	Chanean Ruangsetakit	Professor	Division of Vascular Surgery, Department of Surgery	Chanean.rua@mahidol.ac.th
6	Sittiporn Srinualnud	Associate Professor	Division of Urology Surgery, Department of Surgery	Sittiporn.sri@mahidol.ac.th
7	Asada Methasate	Associate Professor Dr.	Division of General Surgery, Department of Surgery	asada.met@mahidol.ac.th
8	Atthaphorn Trakarnsanga	Associate Professor	Division of General Surgery, Department of Surgery	Atthaphorn.tra@mahidol.ac.th
9	Cherdsak Iramaneerat	Associate Professor Dr.	Division of General Surgery, Department of Surgery	Cherdsak.ira@mahidol.ac.th
10	Chumpol Wongwanit	Associate Professor	Division of Vascular Surgery, Department of Surgery	Chumpol.won@mahidol.ac.th
11	Khamin Chinsakchai	Associate Professor	Division of Vascular Surgery, Department of Surgery	Khamin.chi@mahidol.ac.th
12	Nuttawut Sermsathanasawadi	Associate Professor Dr.	Division of Vascular Surgery, Department of Surgery	nuttawut@gmail.com
13	Prawej Mahawithitwong	Associate Professor	Division of General Surgery, Department of Surgery	Prawej.mah@mahidol.ac.th
14	Suebwong Chutapisith	Associate Professor Dr.	Division of Head Neck and Beast, Department of Surgery	suebwong.chu@mahidol.ac.th
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2. Classroom/Lab Lecture

The lecture room may vary according to the program or classroom event.
Consult with your instructor regarding the appropriate research laboratory or research guidance room before attending the lecture.

3. Course Purpose and Outline

Each student will explore a specific research topic in the specialized surgical field or in the field of medical science related to surgery of his/her own initiative. To help students write highly original and practical dissertations on the results of their research based on scientific grounds, instructors at both universities will instruct them using various methods such as a video conference system and e-mail meetings.

4. Course Objectives

Each student explores a specific research topic of his/her own initiative and writes a dissertation on the results of the research. Participants are to complete their dissertation in order to be assessed for their degree and evaluation through final examination.

5. Format

Classes are conducted in small groups.

6. Course Description and Timetable

- Experiments and data collection
- Data analysis
- Evaluating the adequacy of data collection and data analysis
- Writing a dissertation and preparing a dissertation presentation

7. **Assessment**
   Students are graded according to their dissertation presentation and the assessment of it towards their degree.

8. **Prerequisite Reading**
   None

9. **Reference Materials**
   None

10. **Language Used**
    All classes are conducted in English.

11. **Office Hours**
    Please contact the chief instructor and associate instructor. Problems that emerge in carrying out research will be addressed by the program steering committee.

12. **Note(s) to Students**
    None