

For students admitted in 2022 and before
The Graduate School of Medical Sciences
Kumamoto University
(Doctoral Course)

AY2026 Syllabus

Compulsory subjects and Elective subjects • • • • • • • • Page 3 - 48

- A1 Medical Informatics and Medical Ethics
- B1 Pathophysiology and structural biochemistry of biomolecules
- B2 Cell Biology
- B3 Hematopoietic and Immune System
- B4 Infection and Immune Control
- B5 Human brain functional science
- B6 Neuroscience
- B7 Developmental and Regenerative Medicine
- B8 Environmental and Sociomedical Sciences
- C1 Current Theory of Medical Diagnosis
- C2 Advanced therapeutics
- C3 Metabolic and Circulatory Regulations
- C4 Reproductive and Developmental Medicine
- C5 Advances in Oncologic Medicine
- C6 The Forefront of Clinical Oncology
- C7 Restorative Medicine
- C8 Cancer therapeutics
- C10 The Theory of Clinical Research
- C11 Training of biostatistics in clinical study
- C12 Overview of clinical study
- D1 Medical and Life science Seminar
- D2 Learning from Experienced Doctors Seminar
- D3 Medicine and Life Science Training
- D5 International Biomedical Research Seminars

Practice (Jissen) I, II • Practice (Jissen) III Timetable Code List • • • Page 49

Course Work subject **Page 50 - 51**
Medical Experiment Course

Educational Program for Advanced Research in Infectious Diseases and AIDS
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- F1 Special Lecture I on Infectious Diseases and AIDS
- F2 Special Lecture II on Infectious Diseases and AIDS
- Training I on Infectious Diseases and AIDS
- Training II on Infectious Diseases and AIDS
- Practice I on Infectious Diseases and AIDS
- Practice II on Infectious Diseases and AIDS
- Practice III on Infectious Diseases and AIDS
- Practice IV on Infectious Diseases and AIDS
- Research on Infectious Diseases and AIDS
- Special Research I on Infectious Diseases and AIDS
- Special Research II on Infectious Diseases and AIDS

Endocrinology and Metabolism Course **Page 67 - 68**
Practical Training of Metabolic Medicine

Educational Program for extension of healthy life expectancy . . . **Page 69 - 85**

- G1 Special Lecture I on CMHA
- G2 Special Lecture II on CMHA
- Special Lecture on Bioethics
- Special Practice
- Practice I on CMHA
- Practice II on CMHA
- Practice III on CMHA

Compulsory subjects and Elective subjects

A1

B1 ~ B8 · C1 ~ C12

D1 ~ D3 · D5

Practice (Jissen) I, II , III

Timetable Code List

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-000-81-2	2026whole year	Graduate School of Medical Sciences (20010)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Medical Informatics and Medical Ethics (For students admitted in 2022 and before)(A1 Medical Informatics and Medical Ethics)			KADOOKA Yasuhiro, KASAOKA Shunji, NAKAMURA Taishi, USUKU Koichiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……25% 3.Global perspective and ability to take initiative action ……25% 4.Social leadership drive ……25%					
Type of Class(授業の形態)	Lecture and Seminar				
Teaching Method(授業の方法)	The course is provided by lecture and discussion or e-Learning using the moodle or CITI Japan.				
Course Goals(授業の目的)	Medical Informatics and Medical Ethics aims at proper management of health information and ethical problems arose from medical practice. In this course, you learn basic concepts used in this filed, including electronic health records, protection of computer-processed personal data, health care system in Japan and other countries, evaluation of medical care and DPC, problems of abortion, euthanasia and death with dignity, informed consent, principle of ethics. This course serves as introductory for all students as you obtain essential knowledge on medical informatics and medical ethics, and emergency medicine.				
Course Learning goals(学修目標)	【A level (A水準)】 To be able to handle or manage health information and ethical problems arose from medical practice. 【C level (C水準)】				
Course Outline(授業の概要)	In order to explain basic principles of medical informatics and medical ethics, it is discussed how the problems are managed. Basic concepts are introduced. More specifically, you are expected to understand the followings: (1) electronic health records; (2) protection of computer-processed personal data; (3) information literacy; (4) ethical issues at the beginning of life; (5) ethical issues at the end of life; (6) informed consent, privacy and principle of ethics, (7) research, high technology medicine and ELSIs, (8) emergency medical service system and (9)disaster medicine. Participants are requested to learn medical ethics through e-learning system offered by the project of Collaborative Institutional Training Initiative (CITI) Japan, or submit a short comment on some lectures, which will be helpful to provide positive feed back to the next session.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Yasuhiro Kadooka 【eEJ-0】 Class Orientation and eAPRIN	<ul style="list-style-type: none"> • Introduction and orientation of this course • Responsible Conduct of Research_RCR • Research Misconduct_RCR • Data Handling_RCR 		
2		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Rules for Collaborative Research_RCR • Conflicts of Interest_RCR • Authorship_RCR 		
3		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • What Is Plagiarism?_RCR • Communicating Information to the Public_RCR • Peer Review(Biomedical)_RCR 		
4		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Mentoring_RCR • Managing Public Research Funds_RCR • Research Integrity and Research Security_RCR 		
5		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Appropriate Use of AI in Research, etc._RCR • Ethics of Medical and Health Research Involving Human Subjects I • Ethics of Medical and Health Research Involving Human Subjects II 		
6		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Review by an Institutional Review Board (IRB)_HSR • Handling Personal Information in Research_HSR • Genomic and Genetic Analysis Studies in Human Populations_HSR 		
7		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Group Harm Arising from Research_HSR • Informed Consent in Research_HSR • Research Subjects Who Merit Special Considerations_HSR 		
8		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Records-Based Research_HSR • Social and Behavioral Research for Biomedical Researchers_HSR • International Studies_HSR 		
9		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • The Ethics of Pluripotent Stem Cell Research I_HSR • The Ethics of Pluripotent Stem Cell Research II_HSR • Medical and Health Research Involving Human Subjects_HSR 		
10		Taishi Nakamura and Koichiro Usuku 【eEJ-0】	Health care system in Japan and in the world		
11		Taishi Nakamura and Koichiro Usuku 【eEJ-0】	Future prospects of Electronic medical records, Clinical research and data ware house		
12		Shunji Kasaoka 【eE-0】 【eJ-0】	Emergency Medical Service System, Post-Cardiac Arrest Syndrome		
13		Shunji Kasaoka 【eE-0】 【eJ-0】	Disaster Medicine, Triage		
14		Yasuhiro Kadooka 【eE-0】 【eJ-0】	Step up Lecture for Research Ethics (1)		

15		Yasuhiro Kadooka [eE-0] [eJ-0]	Step up Lecture for Research Ethics (2)
Estimated out-of-class study time	This subject requires 90 hours of study, and the class is 30 hours. Therefore pre- and post-study on tasks equivalent to 60 hours is necessary to deepen the understanding of the class.		
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed by the moodle system.		
Reading List(参考文献)	Provided in the lectures.		
Enrollment Conditions(履修条件)	No prerequisite.		
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries, and the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and questions related to the topics dealt with in class to be scored from grade 1 to 5. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.		
Language Used in Instruction(使用言語)	Japanese and English		
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English		
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable		

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-001-79-2	2026whole year	Graduate School of Medical Sciences (20020)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Pathophysiology and Structural Biochemis (For students admitted in 2022 and before)(B1)			ARIMA Yuichiro, YAMANAKA Kunitoshi, YAMAGATA Kazuya, BABA Masaya, MIHARADA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals(授業の目的)	(1)To understand the pathophysiology of hypertension, cardiac hypertrophy, and atherosclerosis, and the therapeutic strategy of these cardiovascular diseases. (2)To understand the basic knowledge of glucose/lipid metabolism and its dysregulation in diabetes mellitus, metabolic syndrome, and lipid metabolism disorder. (3) Molecular basis, various cellular functions, and roles of ATPases, especially AAA family proteins, in human diseases will be learnt. (4) To understand the mechanisms for protein quality control in cells and its implications in diseases (5) To understand the role of hypoxia signaling pathway, mTOR signaling pathway and metabolite signaling in diseases				
Course Learning goals(学修目標)	【A level (A水準)】 To understand the detailed findings of the structure, function, physiological role, role in various diseases, and clinical application of biomolecule, and to be able to apply them to the study. 【C level (C水準)】 To understand the structure, function, physiological role, role in various diseases, and clinical application of biomolecule.				
Course Outline(授業の概要)	(1) You will learn the mechanism for the regulation of oxidative stress and its signaling cascades. (2) You will learn fundamental metabolic pathways under normal conditions and its relationship to pathology. (3) Proteins are biopolymers containing functional motifs and domains. Molecular chaperones and ATP-dependent proteases are related to life of proteins and consist of several different types of ATPases. Their functions will be discussed from the point of view of ATPases. In particular, common molecular basis and various cellular functions of AAA family proteins will be discussed. In addition, human genetic diseases and developmental disorders of model animals caused by mutations in AAA family proteins will be described. (4) You will learn how quantity and quality of functional proteins is maintained at the desired levels, and molecular mechanisms of unfolded protein response. Furthermore, you will learn how its disruption is implicated in various diseases. (5) You will learn the role of hypoxia signaling pathway, mTOR signaling pathway and metabolite signaling in diseases				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		ARIMA Yuichiro [eEJ-0]	Pathophysiology of cardiovascular diseases (1)		
2		ARIMA Yuichiro [eEJ-0]	Pathophysiology of cardiovascular diseases (2)		
3		ARIMA Yuichiro [eJ-0]	Pathophysiology of cardiovascular diseases (3)		
4		YAMAGATA Kazuya [eEJ-0]	Pathophysiology of glucose/lipid metabolism (1)		
5		YAMAGATA Kazuya [eEJ-0]	Pathophysiology of glucose/lipid metabolism (2)		
6		YAMAGATA Kazuya [eEJ-0]	Pathophysiology of glucose/lipid metabolism (3)		
7		YAMANAKA Kunitoshi [eEJ-0]	ATPases related to life of proteins		
8		YAMANAKA Kunitoshi [eEJ-0]	Various functions of AAA proteins		
9		YAMANAKA Kunitoshi [eEJ-0]	Human diseases caused by AAA proteins		
10		MIHARADA Kenichi [eJ-0]	Growth factors and receptors in cancer		
11		MIHARADA Kenichi [eJ-0]	Cell signaling in cancer		
12		MIHARADA Kenichi [eJ-0]	Molecular targeted therapy in cancer		
13		BABA Masaya [eJ-0]	Hypoxia signaling pathway and disease		
14		BABA Masaya [eJ-0]	mTOR signaling pathway and disease		
15		BABA Masaya [eJ-0]	metabolite signaling and disease		
Estimated out-of-class study time					
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed in some classes.				
Reading List(参考文献)	“Harper’s Illustrated Biochemistry” by Robert K. Murray, Daryl K. Granner, Victor W. Rodwell, The McGraw-Hill Companies, 2006 “Handbook of Lipoprotein Testing” by Nader Rifal et al., AACCC Press, 2000				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	The students’ understanding will be evaluated comprehensively based on the quality of report. Students must select one area from all attended courses and submit its report to the Student Affairs Section.				

Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-002-79-2	2026whole year	Graduate School of Medical Sciences (20030)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Cell Biology(B2)			IWAMOTO Kazuya, TOMIZAWA Kazuhito, BUNDO Miki, ONO Yusuke, TATEISHI Satoshi, HINO Shinjiro, NOMURA Takushi, NAKACHI Yutaka, TAKAHASHI Yuta		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……75% 2.Profound inter-disciplinary knowledge ……20% 3.Global perspective and ability to take initiative action ……5%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	E-learning lecture				
Course Goals(授業の目的)	The students understand the various biological phenomena such as development/regeneration, cancer, aging, psychiatric disorders, molecular genetics, and stem cells based on cellular functions.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 The students can understand the various biological phenomena including development/regeneration, cancer, aging, psychiatric disorders, molecular genetics, and stem cells at the molecular level. In addition, they can understand and discuss the latest topics.</p> <p>【C level (C水準)】 The students can understand the various biological phenomena including development/regeneration, cancer, aging, psychiatric disorders, molecular genetics, and stem cells at the molecular level.</p>				
Course Outline(授業の概要)	The topics of this course include development/regeneration, cancer, aging, psychiatric disorders, molecular genetics, and stem cells. The teachers give lectures on basic knowledge and current status of each topic, based on their specialty.				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Kazuhito Tomizawa [eE-0, eJ-0]	Regulation in physiology and pathophysiology		
2		Kazuhito Tomizawa [eE-0, eJ-0]	Regulation by protein phosphorylation		
3		Shinjiro Hino [eE-0, eJ-0]	Cross talk between metabolism and epigenome		
4		Yusuke Ono [eE-0, eJ-0]	Stem cells and tissue regeneration/adaptation I		
5		Yusuke Ono [eE-0, eJ-0]	Stem cells and tissue regeneration/adaptation II		
6		Yutaka Nakachi [eE-0, eJ-0]	Osteoblasts and Osteoclasts I		
7		Yutaka Nakachi [eE-0, eJ-0]	Osteoblasts and Osteoclasts II		
8		Miki Bundo [eE-0, eJ-0]	Single cell analysis of brain functions		
9		Yuta Takahashi [eEJ-0]	Epigenetic regulation in embryonic development		
10		Takushi Nomura [eE-0]	Analysis of immune responses to viral infection using animal models		
11		Kazuya Iwamoto [eE-0, eJ-0]	Neuroepigenetics I		
12		Kazuya Iwamoto [eE-0, eJ-0]	Neuroepigenetics II		
13		Satoshi Tateishi [eEJ-0]	Cell growth and cell cycle		
14		Satoshi Tateishi [eEJ-0]	About Mitosis and Meiosis		
15		Satoshi Tateishi [eEJ-0]	DNA repair and recombination		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the class is 30 hours, 60 hours of pre- and post-study (including assignments) is necessary to understand the class.				
Required Textbook(テキスト)	Not specified.				
Reading List(参考文献)	Not specified.				
Enrollment Conditions(履修条件)	Should have the basic knowledge of cell biology.				
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on the understanding of the course subject matter. The understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目ナンバ-)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-003-79-2	2026whole year	Graduate School of Medical Sciences (20040)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Hematopoietic and Immune Systems(B3 Hematopoietic and Immune Systems)			OSHIUMI Hiroyuki, OGUCHI Hiroto, OKADA Seiji, SASHIDA Goro, SATO Yorifumi, KOGA Saori, OGAWA Minetaro, IRIE Atsushi, SUZU Shinya, TAKIZAWA Hitoshi, NOMURA Takushi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……35% 2.Profound inter-disciplinary knowledge ……35% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	Omnibus lectures. E-learning contents are available in some lectures in both English and Japanese.				
Course Goals(授業の目的)	The goal of this lecture series is to understand the basis of hematopoietic and immune systems, and disruption of these systems (malignancy, immunodeficiency, and immune disorders).				
Course Learning goals(学修目標)	<p>[A level (A水準)] Understand the basics of hematopoietic and immune systems, their development, function, disruption, and related diseases and discuss about recent progress.</p> <p>[C level (C水準)] Understand the basics of hematopoietic and immune systems, their development, function, disruption, and related diseases.</p>				
Course Outline(授業の概要)	<p>The aims of this lecture series are to understand the followings:</p> <p>(1) The mechanisms how the homeostasis of hematopoietic system is maintained as a stem cell system, (2) The origin of hematopoietic system and the mechanisms of development of hematopoietic stem cells, (3) The animal model bearing human hematopoietic system and applications of this animal model, (4) Aging and tumorigenesis of hematopoietic system, (5) Cell-cell interaction in the immune system, (6) The mechanism of antigen-recognition and the immune response</p>				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Minetaro Ogawa [eJ-0]	Ontogeny of hematopoietic system-1		
2		Minetaro Ogawa [eJ-0]	Ontogeny of hematopoietic system-2		
3		Saori Koga [eJ-0]	Ontogeny of hematopoietic system-3		
4		Seiji Okada [eJ-0,eE-0]	Differentiation of immune cells		
5		Seiji Okada [eJ-0,eE-0]	Application of Humanized mice		
6		Goro Sashida [eEJ-0]	Molecular mechanism of myeloid malignancies		
7		Shinya Suzu [eEJ-0]	Regulation of Hematopoiesis		
8		Hitoshi Takizawa [eE-0]	Role of inflammation on hematopoiesis		
9		Yorifumi Sato [eEJ-0]	T-cell and retroviral infection		
10		Hiroto Ohguchi [eEJ-0]	Molecular pathogenesis of plasma cell neoplasm		
11		Hiroyuki Oshiumi [eJ-0]	Role of innate immune cells during viral infection		
12		Takushi Nomura [eEJ-0]	Flow cytometric analysis for T-cells		
13		Hiroyuki Oshiumi [eJ-0]	Development and function of innate lymphoid cells		
14		Takushi Nomura [eEJ-0]	T-cell responses in SARS-CoV-2 infection		
15		Atsushi Irie [eJ-0]	B cell development and function		
Estimated out-of-class study time					
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.				
Reading List(参考文献)	<ul style="list-style-type: none"> ・ "The Immune System" by Peter Parham. Garland Publishing Inc. New York and London, 2007 ・ "Janeway's Immunobiology Seventh Edition" by Kenneth Murphy, Paul Travers, Mark Walport. Garland Science, Taylor & Francis Group LLC. New York and Abingdon, 2008. ・ The Immune System, 4th Edition [Peter Parham] Garland Science ・ WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. WHO, 2017. ・ The Science of Stem Cells. Jonathan M. W. Slack. Wiley Blackwell, 2018 ・ Williams Hematology, 9th ed. MCGRAW-HILL EDUCATION. 2016 				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Achievement of the Objectives will be evaluated by active class participation and the reports, of which the theme will be specified after the lectures. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of the reports and brief examinations. Final grades will be based on the average of the best 10 scores of the reports and brief examinations as well as the participation in class discussions.				
Language Used in Instruction(使用言語)	English				

Textbook/Material Language(教科書・資料の言語)	English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-004-99-2	2026whole year	Graduate School of Medical Sciences (20050)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Infection and Immune Control(B4 Infection and Immune Control)			UENO Takamasa, IKEDA Masanori, KUBOTA Ryuji, OKADA Seiji, Yasunaga Jiyunichirou, SATO Yorifumi, OSHIUMI Hiroyuki, MOTOZONO Chihiro, SAWA Tomohiro, SUZU Shinya, MONDE Kazuaki, NAKATA Hiroto, IKEDA Terumasa, TANAKA Yasuhito		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……20%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons. (Before starting this course students will be informed of the individual lecture style of instructors in detail.)				
Course Goals(授業の目的)	The aim of this lecture series “Special Lecture I on Infectious Diseases and AIDS” is to learn following topics important for basic and clinical research of infectious diseases: (1) interaction between pathogen and host response, (2) molecular pathogenesis of viral infection, (3) immune control and vaccine research, (4) management of nosocomial/opportunistic infection, (5) diagnosis and treatment of emerging/re-emerging infectious diseases, (6) pathogenesis and treatment of infectious diseases.				
Course Learning goals(学修目標)	<p>[A level (A水準)] Students will learn following topics important for basic and clinical research of infectious diseases. Students will learn following topics important for basic and clinical research of infectious diseases. (1) interaction between pathogen and host response, (2) molecular pathogenesis of viral infection, (3) immune control and vaccine research, (4) management of nosocomial/opportunistic infection, (5) diagnosis and treatment of emerging/re-emerging infectious diseases, (6) Pathogenesis and treatment of HIV-1 infection.</p> <p>[C level (C水準)] Understanding for the following points. (1) interaction between pathogen and host response (2) molecular pathogenesis of viral infection (3) immune control and vaccine research (4) management of nosocomial/opportunistic infection (5) diagnosis and treatment of emerging/re-emerging infectious diseases (6) Pathogenesis and treatment of HIV-1 infection</p>				
Course Outline(授業の概要)	The course addresses the introduction (bacteriology, virology) and particulars of various pathogenic organisms (including gram-positive and negative bacteria, a DNA or RNA viruses) focusing on topics of pathogenesis, control and prevention of infectious diseases and emerging and reemerging infectious diseases. The course addresses protective immunity of host against infectious diseases including HIV-1 infection. Especially, recent topics such as the mechanism of T-cell recognition of the viral antigens, differentiation of immune cells from hematopoietic stem cells and the strategy for the development of effective vaccine against HIV-1 infection will be discussed.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Terumasa Ikeda [eE-O]	Retrovirus life cycle		
2		Tomohiro Sawa [eE-O]	Bacterial infection and pathogenesis		
3		Hiroyuki Oshiumi [eE-O]	Innate immune responses to pathogens		
4		Chihiro Motozono [eE-O]	Cellular immune responses to pathogens		
5		No Class	No class		
6		Kazuaki Monde [eE-O]	Adaptive evolution of viral genes		
7		Jun-ichirou Yasunaga [eE-O]	Emerging/re-emerging infectious diseases		
8		Shinya Suzu [eE-O]	Retroviruses-host interaction		
9		Yorifumi Sato [eE-O]	Retroviral infections and latency		
10		Masanori Ikeda [eE-O]	Molecular pathogenesis of hepatitis viruses		
11		Yasuhito Tanaka [eE-O]	Hepatitis viruses and Liver cancer		
12		Kouki Matsuda [eE-O]	Development of therapeutic approaches toward curing HIV infection		
13		Seiji Okada [eE-O]	Animal model research in infectious diseases		
14		Masahiro Ono	CD4 T Cell Immunity to Infection: Mechanisms of Host Defense and Pathogenesis		
15		Hiroto Nakata [eE-O]	Nosocomial/opportunistic infection		
Estimated out-of-class study time	· This course consists of content that requires hours (90 hours) of study. Since the class is 30 hours (2h x 15 frames) , 60 hours of pre- and post-study (including assignments) is necessary to understand the class. It is necessary to deepen.				
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.				
Reading List(参考文献)	“Atlas of AIDS” edited by Gerald L. Mandell and Donna Mildvan. Current Medicine, Inc. Philadelphia, 2001. “Infectious Diseases and Medical Microbiology” 2nd Edition, Abraham I. Braude et al., W.B. Saunders Company				

Enrollment Conditions(履修条件)	Have basic knowledge concerning what is taught in this course.
Assessment Methods and Criteria(評価方法・基準)	This class consisted of a series of omnibus lectures by 15 lecturers as listed in the schedule. Evaluation will be done based on active class participation, examination test and/or report for subjects by each lecturer. In order to get credits students have to take more than 2/3 lectures. Grading will be based on the average of top 10 scores among ones obtained by the student.
Language Used in Instruction(使用言語)	English
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-005-79-2	2026whole year	Graduate School of Medical Sciences (20060)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Human Brain Functional Science (For students admitted in 2022 and before)(B5 Human brain function science)			SHIMAMURA Kenji, BOKU Shiyuken, IWAMOTO Kazuya, BUNDO Miki, Sou Bunketsu, TAKEBAYASHI Minoru, FUJISE Noboru, ESUMI Shigeyuki, HASHIMOTO Mamoru		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……80% 2.Profound inter-disciplinary knowledge ……19% 3.Global perspective and ability to take initiative action ……1%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint and/or OHP will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	A highly complex structure, human brain is developed from a simple central nervous system (CNS) that detects environmental information and uses the information directly for its body response. Human brain achieved memory, cognition, spirit and identity in its structure by increasing number of neurons and number of subtypes of neurons. In this lecture series, 'Human brain functional Science', students will be able to understand how mental activity appears from 'gene expression', neuron electrical activity, information convergence and divergence in the neuronal circuit. Students will understand the mechanisms underlying brain function as well as mental and psychiatric disorders.				
Course Learning goals(学修目標)	【A level (A水準)】 Fully understand the contents and points that the lecturers set. 【C level (C水準)】 Understand about 60% of the contents and points that the lecturers set.				
Course Outline(授業の概要)	We will describe and discuss following issues: cellular and molecular mechanisms of induction of neural plate and regionalization, neural differentiation and process of morphogenesis, histogenesis, circuit formation, and synaptogenesis. You will learn how environmental information is conveyed to human brain region and processed. You will also learn genetic and neuronal bases of mental activity and disorders.				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		SHIMAMURA [eE-0,eJ-0]	Neural induction		
2		SHIMAMURA [eE-0,eJ-0]	Regionalization of embryonic brain		
3		SHIMAMURA [eE-0,eJ-0]	Regionally distinct histogenesis in brain		
4		ESUMI [eEJ-0]	Neuronal diversity and network formation		
5		ESUMI [eEJ-0]	Neuronal network in the neocortex		
6		SONG [eE-0,eJ-0]	Action potential		
7		SONG [eE-0,eJ-0]	Synapse and synaptic transmission		
8		SONG [eE-0,eJ-0]	Neurotransmitter		
9		SONG [eE-0,eJ-0]	Synaptic plasticity		
10		FUJISE [eE-0,eJ-0]	Neurotransmitter and mental symptom		
11		IWAMOTO [eE-0]	Genetics and epigenetics of psychiatric disorders		
12		BUNDO [eE-0]	Somatic mutations and psychiatric disorders		
13		HASHIMOTO [eEJ-0]	Neural basis of dementia		
14		TAKEBAYASHI [eJ-0]	Multiple approaches to mental disorder		
15		BOKU [eJ-0]	Neural basis of mental disorder		
Estimated out-of-class study time	60 hours				
Required Textbook(テキスト)	Not specified.				
Reading List(参考文献)	Not specified				
Enrollment Conditions(履修条件)	attending 60% of lectures and taking short tests in each lecture				
Assessment Methods and Criteria(評価方法・基準)	Rate of finished e-Learning. Points earned by passing short examinations.				
Language Used in Instruction(使用言語)	Japanese and English (e-learning contents are either in English, Japanese, or mixture of them.)				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English (e-learning contents are either in English or Japanese)				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-006-79-2	2026whole year	Graduate School of Medical Sciences (20070)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Neuroscience (For students admitted in 2022 and before)(B6)			SHIODA Norifumi, MIZUNO Hidenobu, ERA Takumi, ORITA Yoriyisa, FUKUDA Takaichi, Itou Yasuhiro, INOUE Toshihiro, TAKEMOTO Makoto, YAMASHITA Satoshi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability・・・80% 2.Profound inter-disciplinary knowledge・・・20%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures.				
Course Goals(授業の目的)	In this course, you learn structure and function of several brain regions, postnatal development of somatosensory cortex, malformation of the brain due to the abnormalities in development, pathophysiology in the sensory systems, and neurodegenerative disorders. Recent advances in the therapeutic approaches including regenerative medicine are discussed.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Students can explain the structure and function of the central nervous system and its abnormalities, new therapeutic approaches to the neural disorders using stem cells and gene targeting, pathophysiology in the somatosensory, visual, and auditory systems and their treatments. Students can also find unresolved issues in the presented topics and explain their ideas to investigate the issues.</p> <p>【C level (C水準)】 Students can explain the basic knowledge about the structure and function of the central nervous system and its abnormalities, new therapeutic approaches to the neural disorders using stem cells and gene targeting, pathophysiology in the somatosensory, visual, and auditory systems and their treatments.</p>				
Course Outline(授業の概要)	(1) general structure of the brain; (2) Structure and function of the neocortex and hippocampus; (3) Postnatal development of somatosensory cortex; (4) Morphology and function of the visual cortex; (5) Morphology and function of the basal ganglia; (6) Neural crest cells and pluripotency; (7) Nerve growth factor and apoptosis; (8) Gene abnormality and the resultant congenital insensitivity to pain; (9) Deformity of central nervous system and treatment; (10) Pathophysiology and treatment of retinal diseases; (11) Glaucoma pathophysiology and treatment; (12) Hearing impairment and treatment; (13) Regenerative medicine for neurodegenerative diseases; (14) State-of-the-art therapies for Parkinson's diseases				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		FUKUDA Takaichi [eEJ-0]	General structure of the brain		
2		FUKUDA Takaichi [eEJ-0]	Structure and function of the neocortex and hippocampus		
3		MIZUNO Hidenobu [eEJ-0]	Postnatal development of the somatosensory forex		
4		FUKUDA Takaichi [eEJ-0]	Structure and function of the visual system		
5		FUKUDA Takaichi [eEJ-0]	Structure and function of the basal ganglia		
6		ERA Takumi [eJ-0,eE-0]	Development and differentiation of neural crest cell, pluripotency		
7		ERA Takumi [eJ-0,eE-0]	New medical application to diseases of the nervous system using stem cell		
8		TAKEMOTO Makoto [eE-0]	Learning, memory, and emotion		
9		SHIODA Norifumi [eE-0]	The potential of nucleic acid structures as a therapeutic target for neurological diseases		
10		ITOU Yasuhiro [eE-0]	Pathology and treatment of retinal diseases		
11		INOUE Toshihiro [eE-0]	Glaucoma pathophysiology and therapy		
12		ORITA Yoriyisa [eJ-0]	Olfaction impairment and the treatment		
13		YAMASHITA Satoshi [eE-0]	Regenerative medicine for neurodegenerative diseases		
14		YAMASHITA Satoshi [eE-0]	State-of-the-art therapies for Parkinson's diseases		
15					
Estimated out-of-class study time					
Required Textbook(テキスト)					
Reading List(参考文献)					
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	The students' understanding will be evaluated on the basis of quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average of the 10 highest scores out of 15 quizzes.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				

語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable (Fourteen out of fifteen classes are lectured by teachers with practical work experience in clinical medicine.)

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-007-79-2	2026whole year	Graduate School of Medical Sciences (20080)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Developmental and Regenerative Medicine(B7)			NISHINAKAMURA Ryuichi, OKAE Hiroyuki, YABUKI Yasushi, MIHARADA Kenichi, NAKAMURA Akira, NODA Taichi, ERA Takumi, OKI Shinya, ONO Yusuke, NIWA Hitoshi, KOGA Saori, TAKEO Toru, ARIMA Yuichiro, KOBAYASHI Akio		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……50% 2.Profound inter-disciplinary knowledge ……25% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……5%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals(授業の目的)	Developmental and regenerative medicine aims at curing diseases by revealing molecular mechanisms of organ development. In this course, you learn basic concepts and techniques used in this filed, including knockout mice, which have now become essential for any area of research. This course serves as introductory for those in the Developmental and Regenerative Researcher Program, and will also be useful for those in other programs, as you obtain essential knowledge on genetic engineering techniques.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Master basic concepts and techniques used in this filed, and is able to explain the disease mechanisms and treatments based on the knowledge.</p> <p>【C level (C水準)】 Master basic concepts and techniques used in this filed, and is able to understand the disease mechanisms and treatments.</p>				
Course Outline(授業の概要)	(1) Establishment and application of stem cells including ES and iPS cells; (2) Reproductive engineering including in vitro fertilization, freezing of embryos and sperms, embryo transfer, intracytoplasmic sperm injection, and nuclear transfer; (3) Genome editing technology and knockout mice; (4) Maintenance and differentiation of stem cells; (5) Placental development and fetomaternal relationship; (6) Organ development and disease including the kidney, liver, pancreas, muscle, neuron, gonad, blood, heart and vasculature; (7) Regenerating organs from stem cells				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Ryuichi NISHINAKAMURA [eE-0]	Overview & Kidney development		
2		Toru TAKEO [eE-0]	Reproductive engineering		
3		Taichi NODA [eE-0]	Generation of genetically modified mice and their application		
4		Hitoshi NIWA [eE-0]	Molecular basis of embryonic stem cells I		
5		Hitoshi NIWA [eE-0]	Molecular basis of embryonic stem cells II		
6		Takumi ERA [eE-0]	iPS cells, their applications for the medicine		
7		Hiroaki OKAE [eE-0]	Pregnancy in mammals		
8		Kenichi MIHARADA [eE-0]	Fetal-maternal crosstalk: maternal metabolism and fetal development		
9		Yuichiro ARIMA [eE-0]	Differentiation, Maturation, and Regeneration of the Heart and Blood Vessels		
10		Saori KOGA [eE-0]	Development of the blood system		
11		Akio KOBAYASHI [eE-0]	Development of the urogenital system		
12		Akira NAKAMURA [eE-0]	germ cell formation: preformation and epigenesis		
13		Yusuke ONO [eE-0]	Muscle development and regeneration		
14		Yasushi YABUKI [eE-0]	iPS cells and neurodegeneration		
15		Shinya OKI [eE-0]	Bioinformatics in developmental biology		
Estimated out-of-class study time		60 hrs			
Required Textbook(テキスト)					
Reading List(参考文献)		<ul style="list-style-type: none"> “Developmental Biology, 12th edition” by Barresi MJF& Gilbert S 2019. “Essential Developmental Biology, 4th edition” by Slack JMW & Dale L, Blackwell Publishing 2021 “Manipulating the Mouse Embryo: A Laboratory Manual, 4th edition” by Nagy A., Gertsenstein M., Vintersten K., Behringer R., Cold Spring Harbor Laboratory Press, 2014. “Larsen’s Human Embryology, 5th edition” by Shoenwolf GC, Bleyl SB, Brauer PR, Francis-West PH. Churchill Livingstone, 2014. 			
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)		The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes, as well as the final report and active participation in class discussions.			
Language Used in		English			

Instruction(使用言語)	English
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-008-81-2	2026whole year	Graduate School of Medical Sciences (20090)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Environmental and Sociomedical Sciences(B8)			SANO Rie, Katou Takahiko, MATSUI Kunihiro, SOEJIMA Hirofumi, Oomori Hisamitsu, Lu Xi, MASUDA Shota		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……25% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……40%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint and/or OHP will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	The purpose of this course is to develop the logic of the broad field of Social Medicine from the viewpoints of preventive and environmental medicine (hygiene), public health, health medicine, forensic medicine and neuropsychiatry.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Social Medicine is an important field of medical science in studying various aspects of the interaction between medicine and society in the human life cycle. The health of the humans is regulated in the ecosystem, and, as the medical social application, it is also supported by the comprehensive health and welfare system. In this course, students are expected to understand the relationship between the environment and health, the concept of total medical care service including disease prevention & health promotion, and individuals' basic human rights. Students will also comprehensively learn the role of medicine and law in maintaining social safety.</p> <p>【C level (C水準)】</p>				
Course Outline(授業の概要)	There will be practical lectures in the Department of preventive and environmental medicine (hygiene) on the structure of the environment, the relationship between people and the environment, environmental indices and evaluation, and the setting and maintenance of environmental standards, and lectures in the Department of Public Health on the concept of health and the construction of a healthy society based on preventive medicine and epidemiology. In the Department of Forensic Medicine, there will be general lectures on the purposes of forensic medicine, as well as the causes of the death and its classification from the medical, legal and social perspectives, and forensic medicine's contribution to society. In the Department of Clinical Behavioral Medicine, students will learn about the epidemiology of mental diseases and the relationship between life-events, social support, personality, recognition pattern, nurture experience and mental disease.				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Takahiko Katoh [eE-0, eJ-0]	Public health : Meaning of social medicine		
2		Takahiko Katoh [eE-0, eJ-0]	Public health : Epidemiology		
3		Hisamitsu Omori [eEJ-0]	Public health : Medical Screening		
4		Rie Sano [eE-0, eJ-0]	Definition and purpose of forensic medicine		
5		Rie Sano [eE-0, eJ-0]	Forensic medicine & forensic science		
6		Rie Sano [eE-0, eJ-0]	Social aspect of human death (1)		
7		Xi Lu [eE-0]	Medical Statistics		
8		Xi Lu [eE-0]	Research Design of Epidemiology		
9		Hirofumi Soejima [eE-0, eJ-0]	General Medicine: Atherosclerosis		
10		Rie Sano [eE-0, eJ-0]	Social aspect of human death (2)		
11		Kunihiko Matsui [eJ-L]	General Medicine: Clinical studies, interpretation for results		
12		Shota Masuda [eE-0]	Public Health: Sets of statistics of a population in Japan		
13		Shota Masuda [eE-0]	Public Health : Social Security System and Medical Insurance System in Japan		
14		Hirofumi Soejima [eE-0, eJ-0]	Blood Coagulation and Fibrinolysis		
15		Hirofumi Soejima [eE-0, eJ-0]	Lifestyle and Coronary Artery Disease		
Estimated out-of-class study time					
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.				
Reading List(参考文献)	<ul style="list-style-type: none"> ・ “Public Health & Preventive Medicine” by Maxy-Rosenan-Last: (14 edit) Appleton & Lange. 1998, ・ “Forensic Pathology” by Bernard Knight, 2nded., Arnold, London, Sydney and Auckland, 1996. 				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries, and the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions				
Language Used in Instruction(使用言語)	Japanese and English				

Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable (A teacher with practical work experience in Public Health, Regional Medicine, or Forensic Medicine will lecture.)

Course Coding(科目ナンバ)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-009-82-2	2026whole year	Graduate School of Medical Sciences (20100)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Current Theory of Medical Diagnosis(C1 Current Theory of Medical Diagnosis)			HIRAI Toshinori, MIKAMI Yoshiki, GOTO Hiroki, SHIRAIISHI Shinya, KOMOHARA Yoshihiro, UEDA Mitsuharu, Jiyouno Hirofumi, SHINRIKI Satoru, Misumi Youhei, SATO Yonosuke		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……45% 2.Profound inter-disciplinary knowledge ……45% 3.Global perspective and ability to take initiative action ……5% 4.Social leadership drive ……5%					
Type of Class(授業の形態)	Other				
Teaching Method(授業の方法)	PowerPoint files will be used for giving the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures will be considered for those who are regularly absent due to unavoidable reasons.				
Course Goals(授業の目的)	The lecture series “Current Theory of Medical Diagnosis” afford fundamental and current general views of modern medical diagnostic techniques and their application in practical medicine and medical research.				
Course Learning goals(学修目標)	<p>[A level (A水準)] Students are expected to understand cutting-edge advanced method for disease diagnosis. Students are also expected to find devise a method to discover unsolved problems and lead to solutions.</p> <p>[C level (C水準)] Students are also expected to find devise a method to discover unsolved problems and lead to solutions.</p>				
Course Outline(授業の概要)	<p>In the field of Pathology, current morphology and its application for cancer diagnosis will be introduced. In addition, molecular approaches for a research in cancer cell differentiation, proliferation and invasion, blood coagulation system and immune reaction (especially on macrophage) will be shown.</p> <p>In the field of laboratory medicine, we will outline advanced diagnostic approaches through genome analysis and databases in the post-genome era, and introduce the basics and practices of "cancer genomic medicine" that are currently being practiced.</p> <p>In the field of Radiology, detailed implication of CT and MRI images and their application for researchers will be presented.</p> <p>In the field of Isotope Science, basic research such as SPECT and immuno-PET using mouse models, as well as RI molecular imaging and nuclear medicine treatments are outlined.</p> <p>In the field of Neurology, recent advances in the neurological diagnosis will be given to the students.</p>				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Sato Y (Pathol Exp Med) [eJ-0]	Tumor diagnosis with immunohistochemistry.		
2		Komohara Y (Cell Pathol) [eJ-0]	pathology and immunity; Cancer Immunotherapy and PD-L1		
3		Komohara Y (Cell Pathol) [eJ-0]	Pathology and Immunity: The Microenvironment of Cancer		
4		Komohara Y (Cell Pathol) [eJ-0]	Pathology and Immunity: Cancer Immunity and Lymph Nodes		
5		Mikami Y (Pathol Diagnosis) [eJ-0]	Histopathologic approach to diagnostic oncology: a logic for interpretation of morphology.		
6		Ueda M (Neurology) [eJ-L0]	Recent advances in diagnostic methods for intractable neurological diseases		
7		Misumi Y (Neurology) [eJ-0]	Advanced diagnostic approaches for rare and inherited diseases		
8		Shinriki S (Laboratory Medicine) [eJ-0]	Application of next generation sequencing for clinical diagnosis		
9		Shinriki S (Laboratory Medicine) [eJ-0]	Practice and prospect of clinical diagnostic medicine		
10		Jono H (Clin Pharm Sci) [eJ-0]	Drug discovery research based on basic and clinical evidence		
11		Hirai T (Diag Radiology) [eJ-0]	Forefront of MR imaging and research approaches		
12		Hirai T (Diag Radiology) [eJ-0]	Forefront of CT imaging and research approaches		
13		Goto H (RI Science) [eJ-0]	Molecular Imaging Using RI [Basics]		
14		Shiraishi S (RI Imaging) [eJ-0]	Molecular Imaging Using RI [Clinical]		
15		Not open this year			
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the classes will be 30 hours long (2 hours x 15 sessions), 60 hours worth of prior and post-work studies (including assignments, etc.) will be required to deeply understand the classes.				
Required Textbook(テキスト)	Each instructor will specify as needed.				
Reading List(参考文献)	Each instructor will specify as needed.				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries and the final reports. Even if the attendance in this course is very poor or none, the students can obtain credits for this course through e-learning system that are prepared in some classes, or a supplemental class. Grading will be based on the student's understanding of				

Assessment Methods and Criteria(評価方法・基準)	the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics and be scored from 0 to 100.
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English (We will use documents and materials in English whenever possible.)
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable (Faculty members engaged in the clinical practice of Pathology, Radiology and Laboratory medicine will lecture disease diagnostics from the basics to actual levels in an omnibus style.)

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-010-82-2	2026whole year	Graduate School of Medical Sciences (20110)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Advanced Therapeutics(C2)			SAKAGAMI Takuro, KANBA Tomomi, MURAKAMI Daizou, MIYAMARU Satoru, FUKUSHIMA Satoshi, MIYAMOTO Hideaki, ISE Momoko, Hibi Taizou, TANAKA Yasuhito		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability・・・80% 2.Profound inter-disciplinary knowledge・・・20%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals(授業の目的)	Basic concept of molecular targeting and clinical application using antibody, peptide will be reviewed. Because the relation between immune disorders and pathogenesis has been revealed, immune modulation serve as a therapeutic strategy for viral infectious diseases, auto-immune diseases, and cancer. This course provides a rationale, current evaluation and problems of immune-modulation therapy. On the other hand, this course will introduce the basic research and progress to the establishment of organ transplantation, cell transplantation and artificial organs, and also focus on the current efficacy and limitations. In addition, progress in endoscopic treatments will be reviewed. Future therapeutic strategies will be also discussed.				
Course Learning goals(学修目標)	<p>[A level (A水準)] To understand a rationale, current evaluation and problems of immune-modulation therapy. In addition, to comprehend the basic research and progress to the establishment of organ transplantation, cell transplantation and artificial organs, and also to know the current efficacy and limitations. Finally, progress in endoscopic treatments will be recognized.</p> <p>[C level (C水準)]</p>				
Course Outline(授業の概要)	Recent advances in molecular biology and medical engineering provide a new era in the treatment of various diseases. In this regard, the molecules, which play central roles in the pathogenesis of chronic inflammation and carcinogenesis, have been identified, leading to the development of molecular targeting therapies. In addition, it has been described how immune systems of the body contribute to pathogenesis of diseases, and immune-modulation has been employed in the clinical setting. Furthermore, organ transplantation, cell transplantation and artificial organs have been introduced to complement organ failures. On the other hand, progresses in endoscopic machinery have established endoscopic treatment, and serve as less invasive treatments. This course will focus on progress in treatments and future orientation of medicine.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Miyamoto Hideaki [eJ-0]	Progress in endoscopic treatment and diagnosis of gastrointestinal diseases		
2		Tanaka Yasuhito [eJ-0]	State-of the art in diagnosis and treatment of hepatic disease		
3		Tanaka Yasuhito [eJ-0]	Molecular targeting therapy in gastrointestinal & hepatic diseases		
4		Sakagami Takuro [eJ-0]	Progress in diagnosis and treatment of respiratory diseases		
5		Sakagami Takuro [eJ-0]	Topics of allergic respiratory diseases		
6		Sakagami Takuro [eJ-0]	Topics of diagnosis and treatment of lung cancer		
7		Miyamaru Satoru [eJ-0]	The diagnosis and management of dysphagia		
8		Ise Momoko [eJ-0]	Treatment using cochlear implant for severe sensorineural hearing loss		
9		Murakami Daizo [eJ-0]	Endoscopic treatment of head and neck diseases		
10		Hibi Taizo [eJ-0]	Organ transplantation; the past and the present		
11		Hibi Taizo [eJ-0]	Liver transplantation; basis and clinical application		
12		Kamba Tomomi [eJ-0]	Current therapeutic strategy for urogenital cancers		
13		Kamba Tomomi [e-0]	Endoscopic treatments for urinary diseases		
14		Fukushima Satoshi [eJ-0]	Molecular targeting therapy for autoimmune diseases in skin		
15		Fukushima Satoshi [eJ-0]	Immune therapy in skin cancer		
Estimated out-of-class study time					
Required Textbook(テキスト)		Textbooks are not specified, and handouts will be distributed.			
Reading List(参考文献)		1) Molecular Cell Biology, sixth edition, by Lodish H, et al. W.H.Freeman, 2008 2) Carithers RL Jr. Liver transplantation. American Association for the Study of Liver Diseases. Liver Transpl 2000 Jan;6 (1):122-35.			
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)		Grading will be based on active class participation, understanding, paper summaries, and the final report.The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100.			

Assessment Methods and Criteria(評価方法・基準)	Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions
Textbook/Material Language(教科書・資料の言語)	Japanese
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-011-82-2	2026whole year	Graduate School of Medical Sciences (20120)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Metabolic and Circulatory Regulations(C3)			KUBOTA Naoto, MATSUMURA Takeshi, YOKOI Hideki, Gotou Tomomi, SUGITA Michiko, Oike Yuuichi, ADACHI Masataka, TSUJITA Kenichi, Yamamoto Eiichirou, IZUMI Yuichiro, HIRATA Naoyuki, MATSUZAWA Yasushi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint/Zoom will be used in the lectures, and active participation in the discussion is encouraged. Extra classes and e-learning are considered for those who are not able to attend regular classes for unavoidable reasons. Please be sure to refer to the syllabus change as it will be announced on the website of the Graduate school of Medical Sciences.				
Course Goals(授業の目的)	Metabolic and Circulatory Regulations aim at learning the following items: (1) the pathogenesis of acute coronary syndrome and related factors, (2) the molecular mechanisms and therapeutic strategies of chronic heart failure, (3) the pathogenesis of metabolic disorders including diabetes mellitus and diabetic vascular complications, and its therapeutic strategy, (4) the molecular mechanisms of actions and secretion of insulin, (5) the molecular mechanisms and therapeutic strategy for metabolic syndrome and the development of obesity, (6) the relation between the progression of atherosclerosis or obesity, and inflammatory cells, (7) the molecular basis of renal physiology, and the functional differentiation/regulation of each segment of the nephron, (8) the pathogenesis of major renal diseases and the underlying mechanisms causing the pathological conditions, (9) the influence and mechanisms of surgical stress to the metabolism and circulation, and the therapeutic strategy for controlling these influences.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 In this lecture, you are expected not only to learn the followings but also to apply them to research study or clinical activity: 1. Mechanisms of atherosclerosis evaluated by coronary imaging and the therapeutic strategies. 2. Basic mechanisms of myocardial ischemia/reperfusion injury and cardiac remodeling in experimental acute myocardial infarction. 3. Molecular mechanisms and therapeutic strategies of chronic heart failure; 4. Pathogenic mechanisms of diabetes mellitus, diabetic complications, and the actions and secretion of insulin; 5. Molecular mechanisms and therapeutic strategy for metabolic syndrome and obesity, one of the main pathogenesis of atherosclerotic diseases. 6. Molecular basis of water-electrolyte balance by channels and transporters, and the regulation along the nephron. 7. Regulation and dysregulation of renal blood flow and blood pressure, and the pathophysiological mechanisms of proteinuria and renal dysfunction. 8. Various influences of surgical stress (i.e. activation of the sympathetic nervous system, pain, inflammatory reactions, etc.) to the metabolism and circulation, and the therapeutic strategy based on understanding these influences.</p> <p>【C level (C水準)】 You are required to roughly understand each item listed above; otherwise you are regarded not having reached to the level to apply them to research study or clinical activity.</p>				
Course Outline(授業の概要)	1. Mechanisms of atherosclerosis evaluated by coronary imaging and the therapeutic strategies. 2. Basic mechanisms of myocardial ischemia/reperfusion injury and cardiac remodeling in experimental acute myocardial infarction. 3. Molecular mechanisms and therapeutic strategies of chronic heart failure; 4. Pathogenic mechanisms of diabetes mellitus, diabetic complications, and the actions and secretion of insulin; 5. Molecular mechanisms and therapeutic strategy for metabolic syndrome and obesity, one of the main pathogenesis of atherosclerotic diseases. 6. Molecular basis of water-electrolyte balance by channels and transporters, and the regulation along the nephron. 7. Regulation and dysregulation of renal blood flow and blood pressure, and the pathophysiological mechanisms of proteinuria and renal dysfunction. 8. Various influences of surgical stress (i.e. activation of the sympathetic nervous system, pain, inflammatory reactions, etc.) to the metabolism and circulation, and the therapeutic strategy based on understanding these influences.				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Yasushi Matsuzawa 【eE-0】	Endothelial Dysfunction and Atherosclerosis: From Molecular Mechanisms to Clinical Management		
2		Eiichiro Yamamoto 【eE-0】	Molecular mechanisms and therapeutic strategies of chronic heart failure		
3		Kenichi Tsujita 【eE-0】	Mechanisms of atherosclerosis and therapeutic strategies		
4		Michiko Sugita 【eE-0】	Perioperative Stress and Invasive Control Mechanisms		
5		Tomomi Gotoh 【eE-0】	NO and nitrogen metabolism disorders		
6		Naoto Kubota 【eE-0】	Insulin and its actions—their molecular basis		
7		Takeshi Matsumura 【eE-0】	Diabetic complications and their therapeutic approaches		
8		Naoyuki Hirata 【eE-0】	Mechanisms and therapeutic strategies of perioperative organ injury		

9		Naoyuki Hirata [eE-0]	Mechanisms and therapeutic strategies of Postoperative cognitive decline
10		Masataka Adachi [eE-0]	Renal potassium handling
11		Hideki Yokoi [eE-0]	Structure and function of nephron
12		Yuichiro Izumi [eE-0]	Sodium and water handling by the kidney
13		Tomomi Gotoh [eE-0]	ER stress-related diseases
14		Naoto Kubota [eE-0]	Pathogenesis and therapies of metabolic diseases
15		Yuichi Oike [eE-0]	Clarification of molecular and cellular mechanisms underlying aging and its associated diseases
Estimated out-of-class study time		This course consists of contents which requires 90 hours of work. As the total of in-class hours becomes 30 hours (two hours x15 classes), additional 60 hours of pre-post study including some task will be required in order to improve comprehension of the course.	
Required Textbook(テキスト)		Textbooks are not specified, and handouts will be distributed.	
Reading List(参考文献)		<ul style="list-style-type: none"> ・ Braunwald' s Heart Disease: A Textbook of Cardiovascular Medicine, 12th edition, edited by Libby P, et al. Saunders, Philadelphia, 2021. ・ Miller' s Anesthesia, 9th edition, edited by Miller RD. Elsevier Churchill Livingstone, Philadelphia, 2019. ・ Brenner & Rector' s The Kidney, 11th edition, Elsevier, Philadelphia, 2020. ・ Comprehensive Clinical Nephrology, 6th edition, Mosby, 2019. 	
Enrollment Conditions(履修条件)		no limitation	
Assessment Methods and Criteria(評価方法・基準)		Grading will be based on active class participation, paper summaries, and the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and tests as well as participation in class discussions	
Language Used in Instruction(使用言語)		English (English)	
Textbook/Material Language(教科書・資料の言語)		English (English)	
Course Based on Practical Work Experience(実務経験を活かした授業)		Not applicable	

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-012-82-2	2026whole year	Graduate School of Medical Sciences (20130)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Reproductive and Developmental Medicine(C4 Reproductive and Developmental Medicine)			NAKAMURA Kimitoshi, KONDO Eiji, NAKAZATO Hitoshi, MATSUMOYO Shiro, KIDO Jun, YAMAGUCHI Munekage, KURAOKA Shohei, ANAN Kotaro, OZASA a Shiro, SAWADA Takaaki, ISONO Kaori, IWAGOI Yutaka, NAKAMURA Miwa, Hibi Taizou, MURAYAMA Kei		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	-----				
Course Goals(授業の目的)	The lecture of “Reproductive and developmental medicine” aims to understand followings: (1) Basic knowledge for physiology and pathology of human fertilization and pregnancy. (2) Medical interventions before and during pregnancy, and social issues related to these interventions. (3) Basic knowledge for physiology and pathology of development and growth of man. (4) Basic knowledge for disorders which affects children including genetic and neuromuscular diseases, pediatric surgery and organ transplantation.				
Course Learning goals(学修目標)	[A level (A水準)] The participants will learn basic knowledge for developmental and growth medicine and issues of physiology, pathology, treatment, technology and ethical aspects in advanced medicine. They will also learn pregnancy, birth, newborn intensive care and assisted reproductive medicine, prenatal diagnosis and rare diseases, surgical diseases and organ transplantation. [C level (C水準)]				
Course Outline(授業の概要)	This class will introduce the most recent and important progress in the field of reproductive and developmental medicine. The lecture related to pregnancy and delivery will discuss medical and social issues in addition to the physiology of reproductive system. We will discuss biological and medical aspect of the reproductive system, and social and ethical problems. The ethical problems of assisted fertilization including in vitro fertilization, ICSI (Intra Cytoplasmic Sperm Injection), oocyte donation, cryopreservation of embryos, cryopreservation of sperm will be discussed. The class for neonatal medicine, we introduce principal physiology of newborn infants and various pathological conditions of this period. The participant will learn many different disorders. One of the important topics of this course is normal development of brain function during childhood. The normal development of young brain is supported by surrounding environment of children which included social conditions. The participant will also learn neonatal surgical disorders and abdominal organ transplantation for children. We will discuss the social problems which affect healthy development of children in recent years.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Kimitoshi Nakamura [eE-0]	Inborn errors of metabolism		
2	10/08	5th period Yutaka Iwagoi	Clinical Pathophysiology of Perinatal Disorders		
3		Hitoshi Nakazato [eJ-0]	Hereditary Nephropathy		
4	10/22	5th period Miwa Nakamura	Assisted reproductive technology and Oncofertility		
5		Kei Murayama [eE-0]	Enzyme replacement therapy and gene therapy for inherited diseases during childhood		
6	11/05	5th period Shohei Kuraoka	Modeling Kidney Disease with Pluripotent Stem Cells		
7		Takaaki Sawada [eE-0]	Congenital abnormalities and genetic counseling		
8		Kotaro Anan [eE-0]	Molecular basis and therapeutic strategies for pediatric disorders in children		
9		Shiro Ozasa [eE-0]	The Molecular Pathogenesis and Therapeutic Strategies of Pediatric Neuromuscular disorders – Duchenne Muscular Dystrophy and Spinal Muscular Atrophy –		
10		Shiro Matsumoto [eE-0]	Amino acid metabolism and Disorders		
11		Jun Kido [eE-0]	New diagnostics and treatments for rare pediatric diseases		
12		Eiji Kondoh [eE-0]	Management of preeclampsia		
13		Munekage Yamaguchi [eJ-0]	Villous macrophages in the human placenta: a variety of functions and perinatal complications		
14		Kaori Isono [eJ-0]	Relationship between macrophages and microbiota in maintaining intestinal homeostasis		
15		Taizo Hibi [eE-0]	Indications and outcomes of abdominal organ transplantation for children		
Estimated out-of-class study time					
Required Textbook(テキスト)					
Reading List(参考文献)					

Enrollment Conditions(履修条件)	
Assessment Methods and Criteria(評価方法・基準)	The participants should submit a report including what they learned through the contents of lecture, and will be evaluated by score.
Language Used in Instruction(使用言語)	Japanese and English
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-013-83-2	2026whole year	Graduate School of Medical Sciences (20140)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Advances in Oncologic Medicine(C5)			SUZUKI Makoto, ARAKI Norie, NAKAYAMA Hideki, YOSHIDA Ryoji, HIROSUE Akiyuki, IWATSUKI Masaaki, Ikeda Kouei, Miyamoto Yuuji, IDA Satoshi, HAYASHI Hiromitsu, OKABE Hirohisa,		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……45% 2.Profound inter-disciplinary knowledge ……35% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	To understand advances in oncologic medicine, this course serves evidences and recent findings of medical oncology as follows:				
Course Learning goals(学修目標)	【A level (A水準)】 To understand advances in oncologic medicine, this course serves evidences and recent findings of medical oncology as follows: (1) Overview of tumor biology and genetics; (2) Recent advances in gastroenterological surgery; (3) Recent advances in oral and maxillofacial surgery; (4) Recent advances in thoracic surgery 【C level (C水準)】				
Course Outline(授業の概要)	This course overviews landmark findings in mechanism of tumor genesis and recent developments, and serves some of leading-edge research and our data. We focus on following topics: molecular mechanisms of tumor-related genes, cell cycle, cell death, cell differentiation; therapeutic agents based on tumor biology; molecular diagnostic tools, genome, transcriptome and proteomics; cancer stem cell. Many people suffer from gastroenterological cancers (esophageal, gastric, colon, pancreas, liver, biliary tract and gastrointestinal stromal tumor). We explain not only standard treatment for gastroenterological cancer but also cutting-edge treatment for refractory or metastatic, or recurrent gastroenterological cancer.				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Araki Norie [eEJ-L]	Tumor Genetics and biology (introduction)		
2		Araki Norie [eEJ-L]	Tumor Genetics and biology 1		
3		Araki Norie [eEJ-L]	Tumor Genetics and biology 2		
4		Iwatsuki Masaaki [eEJ-0]	Gastroenterological surgery (introduction)		
5		Okabe Hirohisa [eE-0]	Gastroenterological surgery 1		
6		Hayashi Hiromitsu [eE-0]	Gastroenterological surgery 2		
7		Ida Satoshi [eE-0]	Gastroenterological surgery 3		
8		Iwatsuki Masaaki [eE-0]	Gastroenterological surgery 4		
9		Miyamoto Yushi [eE-0]	Gastroenterological surgery 5		
10		Nakayama Hideki [eEJ-0]	The role of immunotherapy in multimodal treatment of oral cancer and treatment strategies using immune checkpoint inhibitors.		
11		Yoshida Ryoji [eEJ-0]	Advancements in oral cancer treatment and research: progressing toward a truly multidisciplinary approach.		
12		Hirosue Akiyuki [eEJ-0]	Tumor microenvironment and cellular regulation via epigenomic alterations in oral cancer.		
13		Suzuki Makoto [eE-0]	General discussion of Thoracic Surgery		
14		Suzuki Makoto [eEJ-0]	Specific discussion of Thoracic Surgery, Lung Cancer -----		
15		Ikeda Koei [eE-0]	Medistinal tumor -----		
Estimated out-of-class study time					
Required Textbook(テキスト)					
Textbooks are not specified.					
Reading List(参考文献)					
“Natural obsessions:The search for the oncogene” by Angier. N, Houghton Mifflin Co, 1988. “Cancer: principles & practice of oncology, 7th ed” by DeVita VT, Lippincott Williams & Wilkins.2004 “The biology of cancer” by Weinberg RA Garland Science, 2007. “Clinical Oncology.” by Abeloff MD, Churchill Livingstone, . “ACS surgery: principles and practice” by Wilmore DW, WebMD. ・ “Thoracic Surgery, 2nd edition” by Pearson FG, Churchill Livingstone, 2002					
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)					
Grading will be based on active class participation, paper summaries, and final report.					
Language Used in Instruction(使用言語)					
Japanese and English					

Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を 活かした授業)	Applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-014-83-2	2026whole year	Graduate School of Medical Sciences (20150)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
The Forefront of Clinical Oncology(C6)			OYA Natsuo, MUKASA Akitake, Yasunaga Jiyunichirou, MURAKAMI Ryuji, NOSAKA Kisato, YAMAMOTO Yutaka, Saitou Fumitaka, MOTOHARA Takeshi, IWANAGA Eisaku		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……70% 2.Profound inter-disciplinary knowledge ……10% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	Video lectures or e-learning programs may be considered for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	In Lecture Series “Riron” : C6 The Forefront of Clinical Oncology II, you learn basic concepts and novel techniques in the most advanced clinical oncology, including (1) radiation oncology, (2) breast and endocrine oncology, (3) gynecological oncology, (4) neurooncology, (5) hematological oncology.				
Course Learning goals(学修目標)	[A level (A水準)] You learn basic concepts and novel techniques in the most advanced clinical oncology, including (1) radiation oncology, (2) breast and endocrine oncology, (3) gynecological oncology, (4) neurooncology, (5) hematological oncology. [C level (C水準)]				
Course Outline(授業の概要)	(1) The forefront of radiation oncology, especially the development in 3-D conformal external beam radiotherapy techniques is lectured. (2) The forefront of breast and endocrine oncology is lectured, especially regarding surgery, chemotherapy, and molecular target therapy for breast cancer and thyroid cancer. (3) The forefront of gynecological oncology, especially the recent development and therapeutic modalities, is explained, including brachytherapy, external beam radiotherapy and chemoradiotherapy for uterine cervical cancer. (4) The forefront of neurooncology is explained especially regarding the molecular biology in malignant brain tumors. (5) The forefront of hematological oncology is lectured especially regarding the mechanisms in tumor development and suppression.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Natsuo Oya [eJ-0]	“Radiation biology and physics”		
2		Natsuo Oya [eJ-0]	“Stereotactic radiotherapy and intensity-modulated radiotherapy”		
3		Ryuji Murakami [eJ-0]	“Image-guided radiotherapy and adaptive radiotherapy”		
4		Yutaka Yamamoto [eJ-0]	“Biological features of breast cancer”		
5		Yutaka Yamamoto [eJ-0]	“Paradigm shift in breast cancer treatment”		
6		Yutaka Yamamoto [eJ-0]	“Molecular target therapy for breast cancer”		
7		Takeshi Motohara [eJ-0]	“Epidemiology of gynecological malignancies”		
8		Takeshi Motohara [eJ-0]	“Radiation therapy for gynecological malignancies”		
9		Fumitaka Saito [eJ-0]	“Paradigm shift of the treatment for gynecological malignancies”		
10		Akitake Mukasa [eJ-0]	“Character of brain tumor”		
11		Akitake Mukasa [eJ-0]	“Brain tumor diagnosis”		
12		Akitake Mukasa [eJ-0]	“Brain tumor therapy”		
13		Eisaku Iwanaga [eJ-0]	“Hematological oncology I - leukocytes”		
14		Kisato Nosaka [eJ-0]	“Hematological oncology II - lymphocytes”		
15		Jun-chirou Yasunaga [eJ-0]	“Hematological oncology III - Hematological malignancies induced by viruses”		
Estimated out-of-class study time					
Required Textbook(テキスト)					
Reading List(参考文献)					
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries, or the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100.Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions				
Language Used in Instruction(使用言語)	Japanese				
Textbook/Material Language(教科書・資料の言語)	Japanese				

語)	Japanese
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-015-83-2	2026whole year	Graduate School of Medical Sciences (20160)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Restorative Medicine(C7 Restorative Medicine)			FUKUI Toshihiro, FUKUSHIMA Satoshi, MIYAMOTO Takeshi, NISHIKAWA Takeshi, MATSUMURA Takeshi, Yasunaga Jiyunichiro, KAWANO Hiroaki, NAKATA Hiroto, Hiroto, Hiroto,		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……50% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint and/or OHP will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	The objectives of this course are for you to understand the following: (1) pathology and therapeutic strategies of sepsis, the mechanisms of organ failure developed from sepsis, (2) risk factors for coronary syndrome, the latest knowledge regarding cardiovascular diseases and their surgical treatment; (3) the latest knowledge regarding cardiovascular diseases and their surgical treatment; (4) the mechanisms of skin wound healing, differences in body surface blood flow distribution between anatomical locations, and plastic surgery procedures and regenerative medical techniques; (5) disorders of bone and joint function and the reconstruction thereof; (6) basic knowledge required to plan out and implement clinical studies.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Who could understand and explain, (1) pathogenesis underlying and strategy to treat sepsis and organ failures due to sepsis; (2) risk factors for coronary syndrome; (3) latest knowledges regarding cardiovascular diseases and their surgical treatments; (4) mechanisms underlying dermal wound healing, distribution of body surface blood flow, techniques for plastic surgery and regenerative medicine; (5) mechanisms underlying and ways of treatment for bone and joint diseases; (6) basic knowledges for planning and conducting clinical studies.It is recommended for you to review the handout materials distributed in the lectures and your notebooks well. If you want to ask any questions to the lecturers, "Office Hour" is available for you. It is also recommended to review the lectures by using e-learning contents if available.</p> <p>【C level (C水準)】 Who could understand, (1) pathogenesis underlying and strategy to treat sepsis and organ failures due to sepsis; (2) risk factors for coronary syndrome; (3) latest knowledges regarding cardiovascular diseases and their surgical treatments; (4) mechanisms underlying dermal wound healing, distribution of body surface blood flow, techniques for plastic surgery and regenerative medicine; (5) mechanisms underlying and ways of treatment for bone and joint diseases; (6) basic knowledges for planning and conducting clinical studies.</p>				
Course Outline(授業の概要)	<p>In this class, the current situation and problems of restorative medicine are explained in terms of both life support and vital function.</p> <p>With continued progress in the field of medicine, critical care medicine has produced a steady flow of successful results and its functional prognosis has also improved dramatically. We will introduce new definition and therapeutic strategies of international sepsis guidelines with outline of new clinical research. We will also provide the mechanisms of organ failure from sepsis in basic and clinical viewpoint.</p> <p>Moreover, we will provide lectures regarding risk factors for acute coronary syndrome, which needs urgent therapy, and the progress of surgical treatments for heart failure, ischemic heart diseases, and valvular heart diseases.</p> <p>Although disorders of the skin, bones, and joints are rarely directly life-threatening conditions, they greatly affect a patient's vital functions. We will explain the theory of skin wound healing and the latest molecular biological knowledge, and we will also provide lectures regarding the progress made in the area of skin flaps through studies of blood flow in human skin and discuss reconstructive medicine for the blood vessels, lymph vessels, and nerves in terms of the development of microsurgery.</p>				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Satoshi Fukushima [eJ-0]	Mechanism of Wound healing		
2		Satoshi Fukushima [eJ-0]	Reconstruction by local flap		
3		Satoshi Fukushima [eJ-0]	Reconstruction with microsurgery		
4		Takeshi Miyamoto [eJ-0]	Pathophysiology of bone metabolism		
5		Takeshi Miyamoto [eJ-0]	Physiology and biology of articular cartilage		
6		Takeshi Miyamoto [eJ-0]	Inflammatory arthritis		
7		Takeshi Nishikawa [eJ-0]	Hypothesis and Design of Clinical Researches		
8		Junichiro Yasunaga [eJ-0]	Hematopoiesis in the bone marrow and hematopoietic stem cell transplantation therapy		
9		Hiroto Nakata [eJ-0]			
10		Hiroaki Kawano [eJ-0]	Risk factors for acute coronary syndrome and gender difference		
11		Toshihiro Fukui [eJ-0]	Surgical treatment of heart failure		
12		Toshihiro Fukui [eJ-0]	Surgical treatment of ischemic heart disease		
13		Toshihiro Fukui [eJ-0]	Surgery of valvular heart disease		
14		Takeshi Matsumura [eJ-0]	Hypothesis and design from the perspective of diabetic complications researches		
15		Hiroaki Kawano [eJ-0]	X Y chromosome related disease		
Estimated out-of-class					

study time	
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.
Reading List(参考文献)	
Enrollment Conditions(履修条件)	
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries, and the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers as well as participation in class discussions.
Language Used in Instruction(使用言語)	Japanese
Textbook/Material Language(教科書・資料の言語)	Japanese
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-016-83-2	2026whole year	Graduate School of Medical Sciences (20170)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Cancer therapeutics(C8 Cancer therapeutics)			SUZUKI Makoto, MUKASA Akitake, SAKAGAMI Takuro, OYA Natsuo, Kanba Tomomi, ORITA Yori-hisa, NAKAYAMA Hideki, NOSAKA Kisato, YAMAMOTO Yutaka, FUKUSHIMA Satoshi, IWATSUKI Masaaki, MOTOHARA Takeshi, Hibi Taizou, MIYAMOTO Takeshi, TANAKA Yasuhito		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……60% 2.Profound inter-disciplinary knowledge ……35% 3.Global perspective and ability to take initiative action ……5%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	We deal with a student by intensive lecture of power point or e-learning.				
Course Goals(授業の目的)	In the current lecture, we lead to comprehend the fundamental knowledge of therapy for cancer such as surgery, radiotherapy, chemotherapy and immunotherapy and the historical change, standard treatment and future directions of cancer therapy. Furthermore, the aims of the current lecture are to understand thoroughly the leading-edge medical treatment for various types of cancer as follows: (1) gastroenterological tumor (2) respiratory tract tumor (3) brain and nervous system neoplasm (4) head and neck tumor (5) otolaryngological neoplasia (6) breast endocrine tumor (7) genitourinary system tumor (8) gynecological tumor (9) orthopaedic and neuro-musculoskeletal tumor (10) skin tumor (11) hematopoietic tumor (12) pediatric tumors.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 To comprehend the fundamental knowledge of therapy for cancer such as surgery, radiotherapy, chemotherapy and immunotherapy and the historical change, standard treatment and future directions of cancer therapy. To understand thoroughly the leading-edge medical treatment for various types of cancer as follows: (1) gastroenterological tumor (2) respiratory tract tumor (3) brain and nervous system neoplasm (4) head and neck tumor (5) otolaryngological neoplasia (6) breast endocrine tumor (7) genitourinary system tumor (8) gynecological tumor (9) orthopaedic and neuro-musculoskeletal tumor (10) skin tumor (11) hematopoietic tumor (12) pediatric tumors.</p> <p>【C level (C水準)】</p>				
Course Outline(授業の概要)	The aims of current lecture are to understand the up-to date treatment for the various types of cancer in addition to standard cancer therapy such as surgery, radiotherapy, chemotherapy and immunotherapy. In late years a guideline is devised every each organ, and maintain the balance of therapy is planned about the cancer. A number of clinical trials are promoted to attempt the standardization of the cancer therapy. You can learn how the standard treatments are confirmed from the results of various clinical trials.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Yasuhito Tanaka [eJ-0]	Medical treatment of the gastrointestinal cancer		
2		Masaaki Iwatsuki [eJ-0]	Surgical cure of the digestive cancer		
3		Takuro Sakagami [eJ-0]	Medical treatment of the lung cancer		
4		Makoto Suzuki [eJ-0]	Surgical treatment of the lung cancer		
5		Hideki Nakayama [eJ-0]	The treatment of the Oral cancer The lecture will be performed on the effectiveness and clinical application of surgery, radiotherapy, chemotherapy, and immunotherapy in oral cancer patients.		
6		Yori-hisa Orita [eJ-0]	The treatment of the head and neck cancer		
7		Takeshi Miyamoto [eJ-0]	The treatment of the bone soft part tumor		
8		Yutaka Yamamoto [eJ-0]	Treatment of breast cancer		
9		Takeshi Motohara [eJ-0]	The treatment of the gynecologic malignant tumor		
10		Tomomi Kamba [eJ-0]	The treatment of genitourinary cancers		
11		Satoshi Fukushima [eJ-0]	Skin cancer therapy__		
12		Taizo Hibi [eJ-0]	Pediatric Solid Cancer Therapy		
13		Akitake Mukasa [eJ-0]	The treatment of the brain tumor		
14		Kisato Nosaka [eJ-0]	The treatment of the hematologic malignancies		
15		Natsuo Ohya [eJ-0]	Radiotherapy of the cancer		
Estimated out-of-class study time					
Required Textbook(テキスト)		We distribute in particular the print which we summarized the point of the lecture in without appointing it.			
Reading List(参考文献)		<ul style="list-style-type: none"> • A new clinical oncology • Cancer principles & practice of oncology, V.T. DeVita, S.Hellman, S.A.Rosenberg, Lippincott Williams & Wilkins • Clinical Oncology, M.D.Abeloff, J.O. Armitage, J.E.Niederhuber, M.B.Kastan, W.G.McKenna, Elsevier • Cancer Medicine, Holland-Frei, AACR • The biology of Cancer, R.A.Weinberg, Garland Science • NCCN guideline 			
Enrollment Conditions(履修条件)					

Assessment Methods and Criteria(評価方法・基準)	We evaluate the attendance situation to a lecture, lecturing questions and answers and the lecture understanding degree about the matter which we raised to the [the aim of the class] by reports about a theme shown at being finished.Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100.Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.
Language Used in Instruction(使用言語)	Japanese
Textbook/Material Language(教科書・資料の言語)	Japanese
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable

Course Coding(科目ナンパー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-018-83-2	2026whole year	Graduate School of Medical Sciences (20190)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
The Theory of Clinical Research(C10Learning of The Theory of Clinical Research)			YAMAMOTO Yutaka, SUZUKI Makoto, MUKASA Akitake, MATSUI Kunihiko, Kanba Tomomi, Jiyouno Hirofumi, Miyamoto Yuuji, IDA Satoshi, HAYASHI Hiromitsu		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……45% 2.Profound inter-disciplinary knowledge ……35% 4.Social leadership drive ……20%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint presentation will be usually provided in the lectures. Video lectures or e-learning programs will be provided for those who are regularly absent for unavoidable reasons.				
Course Goals(授業の目的)	To comprehend necessary knowledge in order to conduct intervention studies/clinical trials				
Course Learning goals(学修目標)	<p>【A level (A水準)】</p> <p>1) To conduct scientifically rational and ethical research</p> <p>2) To play a role as a project member in a large-scale or multicenter clinical study</p> <p>3) To interpret research findings enough to apply into clinical practice</p> <p>4) To broaden knowledge about clinical researches and standard treatments for malignancies</p> <p>【C level (C水準)】</p> <p>1) To comprehend scientific rationale clinical research</p> <p>2) To comprehend methods to conduct clinical research</p> <p>3) To comprehend development and strategies of anti-cancer drugs</p>				
Course Outline(授業の概要)	You will learn about bases of research ethics, epidemiology, biostatistics, study design, and drug kinetics/dynamics needed for clinical trials. And also, you will learn about the biochemical characters and the treatments based on evidence of the clinical trial (EBM; evidence based medicine) in various kinds of cancers, including lung cancer, gastric cancer, colorectal cancer, liver cancer, breast cancer, urinary organ cancer and malignant brain tumor. In addition, the latest topics of the translational study and prospects of the molecular biology will be discussed.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Yamamoto Yutaka, eEJ-O	Basic of clinical research 1(Clinical trials and observational studies)		
2		Yamamoto Yutaka, eEJ-O	Basic of clinical research 1(Clinical research using biomarkers)		
3		Matsui Kunihiko, eEJ-O	Details of ethical guideline for clinical research		
4		Jono Hirofumi, eEJ-O	Basics of Pharmacokinetics/Pharmacodynamics		
5		Jono Hirofumi, eEJ-O	Clinical Application of Pharmacokinetics/Pharmacodynamics		
6		Yutaka Yamamoto, eEJ-O	Design and Assessment of clinical trails		
7		Makoto Suzuki, eE-O	Clinical trials on lung cancer (1)		
8		Makoto Suzuki, eE-O	Clinical trials on lung cancer (2)		
9		Satoshi Ida, eE-O	Clinical trials on gastric cancer		
10		Yuji Miyamaoto, eE-O	Clinical trials on colorectal cancer		
11		Hiromitsu Hayashi, eE-O	Clinical trials on hepatic cell carcinoma		
12		Yutaka Yamamoto, eEJ-O	Clinical trials on breast cancer (1)		
13		Yutaka Yamamoto, eEJ-O	Clinical Trials on breast cancer (2)		
14		Tomomi Kamba, eEJ-O	Clinical Trials on urinary organ cancer		
15		Akitake Mukasa, eEJ-O	Clinical Trials on malignant brain tumor		
Estimated out-of-class study time	60 hours of self-learning (out-of-class study) is recommended in addition to 30-hours lecture (2 hours x 15 times).				
Required Textbook(テキスト)					
Reading List(参考文献)	Emanuel EJ. et al. The Oxford Textbook of Clinical Research Ethics. Oxford University Press., 2008 Breast Cancer, Molecular Genetics, Pathogenesis, and Therapeutics” edited by Bowcock, HUMANA PRESS, 2004 Cheson BD,et al. Revised recommendations of the International Working Group for Diagnosis, Standardization of Response Criteria, Treatment Outcomes, and Reporting Standards for Therapeutic Trials in Acute Myeloid Leukemia. J Clin Oncol. 2003 Dec 15;21(24):4642-9. American Society of Clinical Oncology Clinical Practice Guideline, National Comprehensive Cancer Network Clinical (NCCN) Guidelines for the Treatment of Cancer by Site, which are available on the internet.				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	We evaluate the attendance at a lecture, lecturing questions and answers and the lecture understanding degree about the matter which we raised to the [the aim of the class] by reports about a theme shown at being finished. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.				

Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English (Japanese and English)
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable (Each instructor has experiences as a primary investigator and a collaborator of clinical research projects, or a member of review boards.)

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-156-99-1	2026whole year	Graduate School of Medical Sciences (25240)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Training of biostatistics in clinical study(C11)			TOMIZAWA Kazuhito, HASHIMOTO Kenyu		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……50% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture and Seminar				
Teaching Method(授業の方法)	Lecture (Q & A style), Practical use of PC & statistical software (EZR).				
Course Goals(授業の目的)	Knowledge about basic statistical methods is important for researchers to plan and execute biological/clinical study. Therefore, the aim of this course is to learn about how researchers use statistical tests through carrying out biological experiments and/or clinical studies.				
Course Learning goals(学修目標)	[A level (A水準)] Understanding study design. Performing basic statistical tests (comparing two groups, three or more groups, multivariate analysis etc). [C level (C水準)] Understanding basic statistical theory.				
Course Outline(授業の概要)	In this class, students will learn about study design, basic statistical theories, and practice basic tests using statistical software "EZR".				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		HASHIMOTO Kenyu, [ej-0]	Data representation		
2		HASHIMOTO Kenyu, [ej-0]	Dataset construction		
3		HASHIMOTO Kenyu, [ej-0]	Comparing two groups		
4		HASHIMOTO Kenyu, [ej-0]	Comparing three or more groups		
5		HASHIMOTO Kenyu, [ej-0]	Correlation and simple linear regression		
6		HASHIMOTO Kenyu, [ej-0]	Contingency table analysis		
7		HASHIMOTO Kenyu, [ej-0]	Fundamentals of statistical inference		
8		HASHIMOTO Kenyu, [ej-0]	Statistical design 1		
9		HASHIMOTO Kenyu, [ej-0]	Statistical design 2		
10		HASHIMOTO Kenyu, [ej-0]	Sample size determination		
11		HASHIMOTO Kenyu, [ej-0]	Multivariate analysis 1		
12		HASHIMOTO Kenyu, [ej-0]	Multivariate analysis 2		
13		HASHIMOTO Kenyu, [ej-0]	Multivariate analysis 3		
14		HASHIMOTO Kenyu, [ej-0]	Survival analysis 1		
15		HASHIMOTO Kenyu, [ej-0]	Survival analysis 2		
Estimated out-of-class study time					
Required Textbook(テキスト)	Handout / sample data for statistical analysis				
Reading List(参考文献)	Indicated in each lecture.				
Enrollment Conditions(履修条件)	Bring own personal computer for statistical practice (Windows).				
Assessment Methods and Criteria(評価方法・基準)	Attendance at lectures, Q&A, and score of reports.				
Language Used in Instruction(使用言語)	Japanese				
Textbook/Material Language(教科書・資料の言語)	Japanese				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目ナンバ)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-157-99-1	2026whole year	Graduate School of Medical Sciences (25250)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Overview of clinical study(Overview of clinical study (C12))			TSUJITA Kenichi, SAKAGAMI Takuro, YAMAZAKI Hajime, KAWAGUCHI Takayoshi, MATSUI Kunihiko, SANUKI Tetsuji, NOSAKA Kisato, NAKAMURA Taishi, MIYASHITA Azusa, Morinaga Jiyun, NAGAOKA Katsuya, YAMASAKI Akira		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……80% 2.Profound inter-disciplinary knowledge ……10% 3.Global perspective and ability to take initiative action ……5% 4.Social leadership drive ……5%					
Type of Class(授業の形態)	Lecture and Seminar				
Teaching Method(授業の方法)	Face-to-face or e-learning lectures using handouts.				
Course Goals(授業の目的)	The purpose of this lecture is to provide young researchers who are about to start clinical research with the basic knowledge necessary to plan and conduct their research.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Acquire sufficient knowledge to plan and conduct clinical research, in addition to concepts related to the framework of observational and interventional research, research ethics, statistics, regulations, practices, big data construction and utilization, leveraging AI in research, intellectual property, etc.</p> <p>【C level (C水準)】 Acquire essential knowledge to plan and conduct clinical research, in addition to concepts related to the framework of observational and interventional research, research ethics, statistics, regulations, practices, big data construction and utilization, leveraging AI in research, intellectual property, etc.</p>				
Course Outline(授業の概要)	The course provides an overview of observational and intervention research, research ethics, statistical concepts, study design, regulations and practices, and big data construction and utilization, leveraging AI in research, as well as the essence of knowledge about intellectual property.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		SAKAGAMI Takuro, [eJ-O]	Introduction to clinical research: Translational research(Active Learning)		
2		HONDA Munenori, [eJ-O]	Research Ethics: Protecting participants in clinical research		
3		MORINAGA Jun, [eJ-O]	Statistical principles in clinical research		
4		MORINAGA Jun, [eJ-O]	Introduction of study design in clinical research		
5		MIYASHITA Azusa, [eJ-O]	Understanding guidelines and laws in clinical research		
6		MIYASHITA Azusa, MORINAGA Jun, [eJ-O]	Introduction of protocol writing in clinical research		
7		MATSUI Kunihiko, [eJ-O]	Promotion and practice of observational study		
8		TSUJITA Kenichi, [eJ-O]	Promotion and practice of interventional study		
9		NAKAMURA Taishi, [eJ-O]	Construction and application of medical big data		
10		NOSAKA Kisato, [eJ-O]	Clinical Trial Regulations and Project Management		
11	12/10	Thu. 4th period. SANUKI Tetsuji, [eJ-L]	Management of medical device development		
12	12/17	NAGAOKA Katsuya, [eJ-L]	Potential for AI Applications in Clinical Research		
13		KAWAGUCHI Takayoshi, [eJ-O]	Importance of intellectual property in clinical development		
14	01/14	Thu. 3th period. YAMAZAKI Hajime, [eJ-L]	Practice of study design in clinical research 1 (Active Learning)		
15	01/14	Thu. 4th period. YAMAZAKI Hajime, [eJ-L]	Practice of study design in clinical research 2 (Active Learning)		
Estimated out-of-class study time	This course consists of material requiring 90 hours of study. The course comprises 30 hours of class time (15 sessions of 2 hours each).				
Required Textbook(テキスト)	Textbooks are not specified.				
Reading List(参考文献)	Provided in the lectures.				
Enrollment Conditions(履修条件)	No prerequisite.				
Assessment Methods and Criteria(評価方法・基準)	The level of understanding of the lectures will be evaluated by examining the reports and scores in quizzes related to the lectures.				
Language Used in Instruction(使用言語)	Japanese				
Textbook/Material Language(教科書・資料の言語)	Japanese				
Course Based on Practical Work Experience(実務経験)	Applicable				

Academic Year 2026, D1 Medicine & Life Science Seminar [eE-L]

Place: Lecture room 2, Medical Education & Library Building 3F. Time & Date: From 17:30 (Usually on Wednesday)

No	Schedule	Speaker	Title	Affiliation	Host Dept.
1	Apr 22 (Wed)	Kozo Tomita	Structure and mechanism of RNA processing machinery	Professor / Department of Computational Biology and Medical Sciences, The University of Tokyo	Molecular Physiology
2	May 13 (Wed)	Kei Sato	Evolution of sarbecoviruses including SARS-CoV-2	Professor / The Institute of Medical Science, The University of Tokyo	Hematology, Rheumatology and Infectious Disease
3	Jul 1 (Wed)	Daisuke Nanba	Analysis of Human Epidermal Stem Cell Dynamics and Application to Regenerative Medicine	Professor / Division of Regenerative Medicine and Therapeutics, Department of Genomic Medicine and Regenerative Therapy, School of Medicine, Faculty of Medicine, Tottori University	Immunology
4	Aug 18 (Tue)	Toshiyuki Ko	Single cell RNA seq analysis of cardiovascular diseases.	Assistant Professor / Department of Frontier Cardiovascular Science, Graduate School of Medicine, The University of Tokyo	Anatomy
5	Sep 9 (Wed)	Ayuko Hoshino	Exosomes in pathophysiological conditions	Professor / RCAST, University of Tokyo	Neuropsychiatry
6	Oct 2 (Fri)	Kunimasa Ota	Regulation of neural stem cells by extracellular factors (Tsukushi and Akhirin)	Professor / Department of Stem Cell Biology, Faculty of Arts and Science, Kyushu University	Histology
7	Oct 16 (Fri)	Motohiro Yamauchi	Roles of mRNA splicing factors in DNA repair and the maintenance of genome integrity	Division Head / Central Radioisotope Division, National Cancer Center Research Institute	Radioisotope and Tumor Pathobiology
8	Oct 21 (Wed)	Yusuke Kishi	The role of epigenetics in neurons and brain function	Associate Professor / Institute for Quantitative Biosciences, The University of Tokyo	Molecular Brain Science
9	Nov 18 (Wed)	Nobuaki Takahashi	Life and Stress: An Evolutionary Journey Through Adaptive Strategies	Professor / Synthetic Chemistry and Biological Chemistry, Kyoto University	Microbiology

Note: The date, time or place of these lectures are subject to change.

Please check the details with the seminar guide leaflet distributed to each department beforehand.

Also please check our website for the latest information.

We might add a seminar other than the above. (<http://www.medphas.kumamoto-u.ac.jp/en/medgrad/gakunai/seminar/>)

***** Each seminar will be held in English *****

*Only those who have registered for D1 Seminar can take the e-learning course.

However, some seminar sessions may not be recorded due to the content of the seminar or the instructor's availability.

An announcement will be made if a lecture will not be recorded. For details, please contact the Student Affairs Office.

*Face-to-face seminars can be taken by students who have not registered for the course.

Academic Year 2026, D2 Learning from Experienced Doctors Seminar [eJ-L]

Place: Lecture room 2, Medical Education & Library Building 3F. Time & Date: From 17:30 (Usually on Wednesday)

No	Schedule	Speaker	Title	Affiliation	Host Dept.
1	May 20 (Wed)	Noriko Osumi	Exploring molecular pathogenesis of microcephaly	Executive Director / Japan Society for the Promotion of Science	Molecular Brain Science
2	Jun 5 (Fri)	Koki Ueda	Platelets as a Readout of Stem Cell Dysfunction in Myeloproliferative Neoplasms	Associate Professor / Department of Blood Transfusion and Transplantation Immunology, School of Medicine, Fukushima Medical University	Radioisotope and Tumor Pathobiology
3	Jun 24 (Wed)	Makoto Yamagishi	Integrated multi-omics for HTLV-1-associated diseases: from analysis to therapeutic discovery	Associate Professor / Laboratory of Viral Oncology and Genomics, Department of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, The University of Tokyo	Hematology, Rheumatology and Infectious Disease
4	Jul 8 (Wed)	Seitaro Nomura	Single-cell omics analysis for the development of precision cardiovascular medicine	Associate Professor / Department of Frontier Cardiovascular Science, The University of Tokyo Graduate School of Medicine	Molecular Genetics
5	Jul 15 (Wed)	Kamimoto, Kenji	Decode, predict, and control biological systems through omics and AI modeling approaches.	Professor / Research Institute for Microbial Diseases, Osaka University	Functional Genomics
6	Jul 29 (Wed)	Takahiro A. Kato	Multidimensional Approach toward Hikikomori and Modern-Type Depression: From Psychoanalysis to Digital Intervention	Professor / Department of Psychiatry, Hokkaido University Graduate School of Medicine	Psychiatry and Neuroscience
7	Aug 5 (Fri)	Shinji Kume	Metabolism and Kidney Diseases	Professor / Department of Medicine, Division of Diabetology, Endocrinology and Nephrology, Shiga University of Medical Science	Anatomy
8	Sep 16 (Wed)	ODA, Jun	Medicine at Mass Gatherings: Establishing Healthcare Systems and Clinical Outcomes: The Case of Osaka-Kansai Expo 2025	Professor / The University of Osaka Graduate School of Medicine	Disaster and Critical Care Medicine
	Dec 2 (Wed)	Shingo Iwami	Analyzing Clinical Data through Data Science	Graduate School of Science, Nagoya University	Neuropsychiatry
9	Jan 15, 2027 (Fri)	Mitsutoshi Nakada	Neuroscience conducted by neurosurgeon	Professor / Department of Neurosurgery, Kanazawa University	Histology

Note: The date, time or place of these lectures are subject to change.

Please check the details with the seminar guide leaflet distributed to each department beforehand.

Also please check our website for the latest information.

We might add a seminar other than the above. (<http://www.medphas.kumamoto-u.ac.jp/en/medgrad/gakunai/seminar/>)

***** Each seminar will be held in Japanese *****

*Only those who have registered for D2 Seminar can take the e-learning course.

However, some seminar sessions may not be recorded due to the content of the seminar or the instructor's availability.

An announcement will be made if a lecture will not be recorded. For details, please contact the Student Affairs Office.

*Face-to-face seminars can be taken by students who have not registered for the course.

Approval of Credits of Elective Subject in Doctoral Course,

creditD3 Medicine and Life Science Training

(Subject code 22220)

1. In the wake of realization of doctoral course lessons in the graduate school, presentations at academic meetings, such as academic conferences and lecture meetings, under the sponsorship of academic societies and universities, but not under the sponsorship of private organizations will be approved as credits.

2. “D3 Medicine and Life Science Training” is an elective subject in the doctoral course and up to a maximum of 2 credits can be awarded from presentations at academic conferences. (Refer to the list of lecture course/subject and credit in the syllabus.)

3. The criteria for credit approval are stipulated below. In addition, academic meetings that meet the above criteria such as academic conferences, lecture meetings and symposiums, will be judged by the committee of the postgraduate education.

1) In international academic meetings such as conferences, meetings, and symposiums, which are held domestically and abroad, or in national conferences and study meetings, which are held domestically, attendance as a leading presenter of a poster or an oral presentation as the first author of the abstract will be approved for a maximum of 2 credits.

2) In local academic meetings, such as conferences, lecture meetings and seminars, leading a poster or oral presentation as the first author of the abstract will be approved for a maximum of 1 credit.

For relation of the term of academic meetings and the number of credits to be approved, refer to the detailed regulations as shown in the next page.

4. How to apply for credits and the process of approving credits (The stipulations of this matter and the necessary forms are published on the website for the Graduate School of Medical Sciences and can be downloaded from the website).

1) Graduate students should record and submit the necessary information. Record in the prescribed application form (Refer to Format 1) the names of academic meetings, the term of the meetings and reports. Submit the written form to the Educational Affairs Planning Section (Ext. 5029) with 1) a certificate of participation (a copy is acceptable), 2) a copy of the program in which the presentation is published in and 3) a copy of the abstract that the student has published as a leading presenter. In principle, submit the forms within the same academic year as conference participation. The application form will be examined by the committee of the postgraduate education (generally held on every third Wednesday).

2) The committee of the postgraduate education will review all submissions and calculate credit based on the detailed regulations (Attachment 1). The credits will be calculated, and when they reach 2 or more, they will be given to SOSEKI by the Educational Affairs Planning Section. Students need to view SOSEKI to check their acquired credits. If the number of credits doesn't reach 2, it will not be approved (0 credits).

- 3) For the credit application, “Kumamoto University” shall be indicated as your affiliation. If your affiliation is not Kumamoto University, your academic supervisor shall be included in your co-speakers.
- 4) A credit application would be accepted by attending a meeting online as well, only when the school educational committee accepts it. A participant certification of such meeting or an approval from the academic supervisor can be submitted for the required submission, 1)-1).

The Detailed Regulations for Approving the Number of Credits in D3 Medicine and Life Science Training

In a faculty meeting on May 28, 2008, it was approved that beginning from the academic year of 2009, students can acquire up to a maximum of 2 credits as D3 Medicine and Life Science Training (which is an elective subject in the doctoral course) by participating in academic meetings as a leading presenter. The detailed regulations of credit approval are stipulated below.

1. Presentations at academic meetings given in 2008 by students who entered in the academic year of 2008 can be approved for credit. However, the application form and the documents that show proof of the students' presentations must be submitted within the 2008 academic year.

2. The relation between the term of academic meetings and the number of credits to be approved is based on the following criteria.

1) The maximum credits will be given for participation in three (3) day academic meetings. "Riron" lecture-style classes, are lecture courses in a subject that consist of fifteen (15) 90-minute sessions (32.5 hours in total). These are worth 2 credits. Academic meetings are generally held from 8 a.m. to 6 p.m. It can be considered that three days participation in academic meetings is equivalent to about thirty (30) hours of study in a regular class.

2) An academic meeting, which is held for half a day should be counted one sixth ($1/6$) of one credit. For example, one third ($1/3$) of the stipulated maximum credits should be given by an academic meeting held for one (1) day, a half ($1/2$) for one and a half ($1\ 1/2$) days and two thirds ($2/3$) for two (2) days.

3) Specific examples of calculating credits:

When a student gives a presentation as the leading presenter at international meetings or domestic national academic meetings held for three days or more, 2 credits should be given. When meetings are held for one day, two thirds ($2/3$) of one credit will be given, when they are held for one and a half days, one (1) credit should be given, and when they are held for two days, four thirds ($4/3$) should be given.

When a student gives a presentation as the leading presenter at local academic meetings held for two days, two thirds ($2/3$) of one credit should be given, when meetings are held for one day, one third ($1/3$) of one credit should be given and when they are held for half a day, one sixth ($1/6$) of one credit should be given.

3. When the number of days a student participate in does not match the stipulations above, credits to be awarded will be decided, after deliberations, by the committee of the postgraduate education.

(Format 1)

**Application Form for Credits of
D3 Medicine and Life Science Training: (Presentations at academic meetings)**

Application date: (year/month/day)

Name:	__ Year	Student number:	Affiliation :
Course name (if applicable):		Phone number:	
E-mail address:			
Name of academic meeting:			
Date of meeting (y/m/d): ~		City and venue of meeting:	
Date when the applicant participated in the meeting(y/m/d): ~ (_____ days)			
Presenters' names (all):			
Title of the presentation: (circle one) oral poster			
The number of credits to be applied for approval (Refer to the detailed regulations in Attachment 1 about how to calculate): _____ credits			
Report about what you have learned through participating in the academic meeting (Write 200 words or more below.)			

Submit 1) a certificate of participation in the academic meeting (a copy is acceptable), 2) a copy of the program in which the presentation is published in, 3) a copy of the abstract that the student has published as a leading presenter in written form together with this application form to Student Affairs Section. (Screening for approval of credits will be conducted in the committee of the postgraduate education, which is held on every third Wednesday.)

If you have lost the participant certification of the meeting to submit or the meeting was held online, you shall submit Form 2. "Appeal for D3 Medicine and Life Science Training (Conference Presentation)"

(Format 2)

Appeal for D3 Medicine and Life Science Training (Conference Presentation)

Student ID No.: _____

Affiliation: _____

Name (hand-writing): _____

Academic supervisor (hand-writing): _____

Name of Conference:

Appeals:

Academic Year 2026, D5: International Biomedical Research Seminars

- Place: Meeting Lounge, IRCMS 1F or online
- Time & Date: From 16:00 (usually on Wednesday; may be adjusted due to time difference)

The “D5 International Biomedical Research Seminars” course will be offered by International Research Center for Medical Sciences (IRCMS). It will run from April 2026 to March 2027, with lectures given by scientists who are affiliated with IRCMS or in collaboration with researchers at IRCMS. The lectures will be given in English, and by leading scientists in the relevant research field. Students will be taught: 1) how normal physiological functions are maintained in the human body; 2) how these systems become abnormal under certain pathophysiologic conditions; 3) why stem cells are important in animal development and homeostasis; 4) how stem cell-based approaches can help us understand disease mechanisms and find potential cure for diseases related to stem cell malfunction (e.g., cancer, aging).

No	Schedule	Lecturer	Research Field/The title for the lecture	Title / Affiliation
1.	May (Online)	Junren Chen	AI in diagnosis and treatment of hematological malignancies	Institute of Hematology & Blood Diseases Hospital, Chinese Academy of Medical Sciences (IHCAMS), China
2.	June (Onsite)	Mitinori Saitou	Germ cells	Director / PI, ASHBI, Kyoto University
3.	July (Online)	Carlos Lois	Neural science	Professor, Division of Biology and Biological Engineering, Caltech, USA
4.	August (Onsite)	Koji Hase	Mucosal barrier dysfunction	Professor, Faculty of Pharmacy, Department of Pharmaceutical Sciences, Keio University
5.	September (Online)	Alejandro Aguilera Castrejon	In vitro development	Group Leader, HHMI, Janelia Research Campus, USA
6.	October (Onsite)	Hiroki Ueda	Systems biology	Professor, Graduate School of Medicine, Department of Systems Pharmacology, The University of Tokyo
7.	November (Online)	Louise E Purton	Blood stem cell biology	Professor, St. Vincent's Institute of Medical Research in Melbourne, Australia
8.	December (Onsite)	Yoshiko Takahashi	Developmental biology	Professor, Department of Zoology, Graduate School of Science, Kyoto University
9.	January (Online)	Satoshi Toda	Synthetic biology	Associate Professor, Institute for Protein Research, The University of Osaka
10.	February (Onsite)	Azusa Inoue	Epigenome inheritance	Team Director, RIKEN IMS
11.	March (Online)	Qianfei Wang	Genomics and precision medicine	Professor, Application Development Department, Beijing Institute of Genomics, Chinese Academy of Sciences, China
12.	TBD	Maki Mizukai	World peace from the perspective of medicine and health	Lecturer, Center for Student Development, Haboromo University of International Studies

Note: The schedule or venue of these lectures are subject to change. Please check the details with the seminar guide leaflet distributed to each department beforehand. Also, please check our website for the latest information. We might add a seminar other than the above.

<http://www.medphas.kumamoto-u.ac.jp/medgrad/gakunai/seminar/seminar3/>

A report format of “D5: International Biomedical Research Seminars”

Write 2 essays based on 2 talks chosen from the seminar “D5: International Biomedical Research Seminars”. Length of the essays should be 250-500 words. “D5: International Biomedical Research Seminars” requires students to attend more than 10 lectures as well as to submit at least 2 reports for credit before completion of their thesis research. Send each essay to the IRCMS within one month by E-mail (ircms@jimu.kumamoto-u.ac.jp, not by hard copy or any other digital media). The file of the essay should be included in the E-mail both in an attached file and in the text. A carbon copy E-mail should be also sent to Medical Faculty Educational Affairs Planning Section (iyg-igaku-3@jimu.kumamoto-u.ac.jp). Attendance will be taken in every talk by signing your name at the entrance of the lecture room.

Graduate School of Medical Sciences, Medical Course (Doctor) “D5: International Biomedical Research Seminars” Report

Student : Grade	Registered number	Division	Name
Title of talk:			
Talker:			
Date:			
Place:			
A body of essay: Fill this A4 sheet with 250-500 words			

Practice (Jissen) I, II · Practice (Jissen) III Timetable Code List

Please refer to the URL below for further details of "Departmental Course Practice (Jissen) I, II · Practice (Jissen) III".

<http://syllabus.kumamoto-u.ac.jp/>

Field	Subject	Practice I	Practice II	Field	Subject	Practice I	Practice II
Basic Medicine	1 Anatomy	20380	21190	Surgery	50 Urology	22820	22950
	2 Histology	20280	21090		51 Ophthalmology	22830	22960
	3 Sensory and Cognitive Physiology	20390	21200		52 Otolaryngology-Head and Neck Surgery	22840	22970
	4 Molecular Physiology	20250	21060		53 Oral and Maxillofacial Surgery	22860	22990
	5 Molecular and Medical Pharmacology	26055	26056		54 Dermatology and Plastic Surgery	22570	22690
	6 Medical Biochemistry	20500	21310		55 Anesthesiology	22870	23000
	7 Molecular Genetics	20240	21050		56 International Medical Cooperation	20950	21760
	8 Pathology and Experimental Medicine				57 Molecular Cell Biology	22480	22600
	9 Cell Pathology	20510	21320		58 Kidney Development	22490	22610
	10 Microbiology	20480	21290		59 Brain Morphogenesis	22500	22620
	11 Immunology	20290	21100		60 Cell Modulation	22510	22630
	12 Molecular Brain Science	25070	25080		61 Cell Maintenance	22520	22640
	13 Molecular Biology of Aging and Longevity	25260	25270		62 Cell Differentiation	22530	22650
	14 Lifelong Health Education	25860	25870		63 Stem Cell Biology	22550	22670
	15 Medical Oncology and Translational Research	22890	23020		64 Medical Cell Biology	22560	22680
	16 Neuroscience for Metabolic Control	26053	26054		65 Chromosome Biology	25190	25200
	17 Medical Education	26059	26060		66 Muscle Development and Regeneration	25690	25700
Environmental and Socio Medical Sciences	18 Public Health	23060	23070	67 Trophoblast Research	26057	26058	
	19 Forensic Medicine	21010	21820	68 Hematopoiesis	25300	25310	
	20 Bioethics	21020	21830	69 Infection and Hematopoiesis	25320	25330	
	21 Clinical Ethics	21040	21850	70 Infection and Immunity	25340	25350	
	22 Clinical Psychology	21030	21840	71 AIDS Therapeutics	25360	25370	
	23 Regulatory Science	23040	23050	72 Vaccine	25380	25390	
	24 Respiratory Medicine	22790	22920	73 Genomics and Transcriptomics	25400	25410	
Internal Medicine and Pediatrics	25 Cardiology	22800	22930	74 Molecular Virology & Genetics	25750	25760	
	26 Endocrinology and Metabolism	20700	21510	75 Virology and Pathology	26000	26010	
	27 Nephrology	20720	21530	76 Reproductive Engineering	20370	21180	
	28 Gastroenterology and Hepatology	20690	21500	77 Disease Epigenetics	25560	25570	
	29 Hematology, Rheumatology and Infectious Disease	25130	25140	78 Radioisotope and Tumor Pathobiology	26061	26062	
	30 Neurology	25420	25430	80 Stem Cell Stress	25440	25450	
	31 Pediatrics	20740	21550	81 Transcriptional Regulation in Leukemogenesis	25460	25470	
	32 Diagnostic Medicine	23080	23090	82 Developmental Morphogenesis	25480	25490	
	33 Diagnostic Radiology	20630	21440	83 Multi-dimensional Imaging	25520	25530	
	34 Radiation Oncology	20620	21430	84 Proteostasis in Stem Cell	25900	25910	
	35 Neuropsychiatry	22810	22940	85 Developmental Cardiology	25920	25930	
	36 Disaster and Critical Care Medicine	25960	25970	86 Chromatin Organization in Immune Cell Development	25940	25950	
	37 General Medicine and Clinical Epidemiology	25980	25990	87 Epigenetic Inheritance	26063	26064	
	38 Health Care Science	21000	21810	89 Metabolomics practice II		21860	
	39 Medical Information Sciences	20660	21470	90 Metabolic information epidemiology practice II		21870	
	40 Diagnostic Pathology	25540	25550			practice III	
	41 Physiological Function Assessment	22230	22240	91 Diagnostic Image Analysis practice III		21880	
42 Advanced Cardiovascular Medicine	22730	22750	92 Surgical therapeutics for Cancer practice III		21890		
Surgery	43 Gastroenterological Surgery	20870	21680	93 Radiation Oncology practice III		21900	
	44 Thoracic Surgery and Breast Surgery	25880	25890	94 Cancer Chemotherapy practice III		21910	
	45 Cardiovascular Surgery	20860	21670	95 Palliative Care practice III		21920	
	46 Pediatric Surgery and Transplantation	22880	23010	96 Clinical metabolic informatics practice III		21930	
	47 Neurosurgery	20920	21730				
	48 Orthopaedic Surgery	22850	22980				
	49 Obstetrics and Gynecology	22580	22700				

Course Work subject

(Medical Experiment Course)

【Timetable code : 10170 (Master's Elective Subject)】 【Timetable code : 20200 (Doctoral Compulsory Subject)】

*Note that the codes are different for master's and doctoral students.

Academic Year 2026 Graduate School's Medical Experiment Course

Location: Lecture Room 2(Medical Education & Library Building 3F)

Date	AM		PM	
April 6 (Mon.)	1	8:45 ~ 10:15 Introduction to recombinant DNA technique 【eEJ-L】 (Molecular Genetics: TERADA Kazutoyo)	3	13:15 ~ 14:45 Fundamentals and Applications of PCR 【eEJ-L】 (Medical Biochemistry: SATO Yoshifumi)
	2	10:30 ~ 12:00 Gene Trasfer Technique 【eEJ-L】 (Molecular Physiology: CHUJO Takeshi)	4	15:00 ~ 16:30 Practice and Guidance for Biological Laboratory Safety 【eEJ-L】 (Clinical Microbiology: TSUTSUKI Hiroyasu)
April 7 (Tue.)	5	8:45 ~ 10:15 Introduction to Cell Imaging and Image Analysis 【eEJ-L】 (Gastroenterological Surgery: OKABE Hirohisa)	6	13:15 ~ 14:45 Analysis of Transcriptional Regulation 【eEJ-L】 (Molecular and Medical Pharmacology: SAKAMOTO Yasuhisa)
		10:30 ~ 12:00	7	15:00 ~ 16:30 Pharmacokinetics 【eEJ-L】 (Pharmacology and Therapeutics: SARUWATARI Junji)
April 8 (Wed.)	8	8:45 ~ 10:15 Production of polyclonal and monoclonal antibodies 【eEJ-L】 (Immunology: IRIE Atsushi)	10	13:15 ~ 14:45 Analytical methods for intracellular signaling 【eEJ-L】 (Infection and Hematopoiesis: SUZU Shinya)
	9	10:30 ~ 12:00 How to use ChIP-Atlas 【eEJ-L】 (Institute of Resource Development and Analysis: OKI Shinya)		15:00 ~ 16:30
April 9 (Thu.)	11	8:45 ~ 10:15 Immunohistochemistry 【eEJ-L】 (Tumor Pathology: YANO Hiromu)		13:15 ~ 14:45
	12	10:30 ~ 12:00 Basic Methods in Immunology 【eEJ-L】 (Immunology: IRIE Atsushi)	13	15:00 ~ 16:30 Proteomics 【eEJ-L】 (Tumor Genetics and Biology: ARAKI Norie)
April 10 (Fri.)	14	8:45 ~ 10:15 Experimental animals and animal Experimentations I 【eEJ-L】 (Division of Microbiology and Genetics: TORIGOE Daisuke)		13:15 ~ 14:45
	15	10:30 ~ 12:00 Experimental animals and animal Experimentations II 【eEJ-L】 (Division of Microbiology and Genetics: TORIGOE Daisuke)		15:00 ~ 16:30
April 13 (Mon.)		8:45 ~ 10:15	17	13:15 ~ 14:45 Reproductive Engineering Techniques (Reproductive Engineering: TAKEO Toru)
	16	10:30 ~ 12:00 Introduction to flowcytometry 【eEJ-L】 (Immunology : IRIE Atsushi)		15:00 ~ 16:30
e-learning only	18	Experiment study and safety control 【eEJ-0】 (Environmental Safety Center: YAMAGUCHI Yoshihiro)		

Educational Program for Advanced
Research in Infectious
Diseases and AIDS

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-004-99-2	2026whole year	Graduate School of Medical Sciences (25580)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Lecture I on Infectious Diseases and AIDS(B4 Infection and Immune Control)			UENO Takamasa, IKEDA Masanori, KUBOTA Ryuji, OKADA Seiji, Yasunaga Jiyunichirou, SATO Yorifumi, OSHIUMI Hiroyuki, MOTOZONO Chihiro, SAWA Tomohiro, SUZU Shinya, MONDE Kazuaki, NAKATA Hiroto, IKEDA Terumasa, TANAKA Yasuhito		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……20%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons. (Before starting this course students will be informed of the individual lecture style of instructors in detail.)				
Course Goals(授業の目的)	The aim of this lecture series “Special Lecture I on Infectious Diseases and AIDS” is to learn following topics important for basic and clinical research of infectious diseases: (1) interaction between pathogen and host response, (2) molecular pathogenesis of viral infection, (3) immune control and vaccine research, (4) management of nosocomial/opportunistic infection, (5) diagnosis and treatment of emerging/re-emerging infectious diseases, (6) pathogenesis and treatment of infectious diseases.				
Course Learning goals(学修目標)	<p>[A level (A水準)] Students will learn following topics important for basic and clinical research of infectious diseases. Students will learn following topics important for basic and clinical research of infectious diseases. (1) interaction between pathogen and host response, (2) molecular pathogenesis of viral infection, (3) immune control and vaccine research, (4) management of nosocomial/opportunistic infection, (5) diagnosis and treatment of emerging/re-emerging infectious diseases, (6) Pathogenesis and treatment of HIV-1 infection.</p> <p>[C level (C水準)] Understanding for the following points. (1) interaction between pathogen and host response (2) molecular pathogenesis of viral infection (3) immune control and vaccine research (4) management of nosocomial/opportunistic infection (5) diagnosis and treatment of emerging/re-emerging infectious diseases (6) Pathogenesis and treatment of HIV-1 infection</p>				
Course Outline(授業の概要)	The course addresses the introduction (bacteriology, virology) and particulars of various pathogenic organisms (including gram-positive and negative bacteria, a DNA or RNA viruses) focusing on topics of pathogenesis, control and prevention of infectious diseases and emerging and reemerging infectious diseases. The course addresses protective immunity of host against infectious diseases including HIV-1 infection. Especially, recent topics such as the mechanism of T-cell recognition of the viral antigens, differentiation of immune cells from hematopoietic stem cells and the strategy for the development of effective vaccine against HIV-1 infection will be discussed.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Terumasa Ikeda [eE-O]	Retrovirus life cycle		
2		Tomohiro Sawa [eE-O]	Bacterial infection and pathogenesis		
3		Hiroyuki Oshiumi [eE-O]	Innate immune responses to pathogens		
4		Chihiro Motozono [eE-O]	Cellular immune responses to pathogens		
5		No Class	No class		
6		Kazuaki Monde [eE-O]	Adaptive evolution of viral genes		
7		Jun-ichirou Yasunaga [eE-O]	Emerging/re-emerging infectious diseases		
8		Shinya Suzu [eE-O]	Retroviruses-host interaction		
9		Yorifumi Sato [eE-O]	Retroviral infections and latency		
10		Masanori Ikeda [eE-O]	Molecular pathogenesis of hepatitis viruses		
11		Yasuhito Tanaka [eE-O]	Hepatitis viruses and Liver cancer		
12		Kouki Matsuda [eE-O]	Development of therapeutic approaches toward curing HIV infection		
13		Seiji Okada [eE-O]	Animal model research in infectious diseases		
14		Masahiro Ono	CD4 T Cell Immunity to Infection: Mechanisms of Host Defense and Pathogenesis		
15		Hiroto Nakata [eE-O]	Nosocomial/opportunistic infection		
Estimated out-of-class study time	· This course consists of content that requires hours (90 hours) of study. Since the class is 30 hours (2h x 15 frames) , 60 hours of pre- and post-study (including assignments) is necessary to understand the class. It is necessary to deepen.				
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.				
Reading List(参考文献)	“Atlas of AIDS” edited by Gerald L. Mandell and Donna Mildvan. Current Medicine, Inc. Philadelphia, 2001. “Infectious Diseases and Medical Microbiology” 2nd Edition, Abraham I. Braude et al., W.B. Saunders Company				

Enrollment Conditions(履修条件)	Have basic knowledge concerning what is taught in this course.
Assessment Methods and Criteria(評価方法・基準)	This class consisted of a series of omnibus lectures by 15 lecturers as listed in the schedule. Evaluation will be done based on active class participation, examination test and/or report for subjects by each lecturer. In order to get credits students have to take more than 2/3 lectures. Grading will be based on the average of top 10 scores among ones obtained by the student.
Language Used in Instruction(使用言語)	English
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-028-81-1	2026whole year	Graduate School of Medical Sciences (25590)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Lecture II on Infectious Diseases and AIDS(Special Lecture II on Infectious Diseases and AIDS (F2))			UENO Takamasa, MIZUSHIMA Daisuke, SUGIURA Wataru, YAMAMOTO Hiroyuki, TOYODA Mako, TOKUNAGA Kenzo, MAEDA Kenji, WATANABE Koji, NAKAHATA Shingo, TAKAHASHI Naofumi, NOMURA Takushi, SUGETA Kenji		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……35% 3.Global perspective and ability to take initiative action ……35% 4.Social leadership drive ……5%					
Type of Class(授業の形態)	Lecture				
Teaching Method(授業の方法)	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons. (Before starting this course students will be informed of the individual lecture style of instructors in detail.)				
Course Goals(授業の目的)	The aim of this lecture series “Special Lecture II on Infectious Diseases and AIDS” is to learn following topics important for clinical, epidemiological and social science research of infectious diseases: (1) diagnosis and treatment of infections, (2) pathogenesis and complications in infectious diseases, (3) principles in medical statistics, (4) Surveillance and epidemiology in infections at domestic and global levels, (5) prevention of transmission and educational approaches to high risk groups, (6) antiviral drugs and viral resistance to drugs.				
Course Learning goals(学修目標)	<p>[A level (A水準)] Students will learn following topics important for clinical, epidemiological and social science research of infectious diseases: (1) diagnosis and treatment of infections, (2) pathogenesis and complications in infectious diseases, (3) principles in medical statistics, (4) Surveillance and epidemiology in infections at domestic and global levels, (5) prevention of transmission and educational approaches to high risk groups, (6) antiviral drugs and viral resistance to drugs.</p> <p>[C level (C水準)] Students will learn following topics important for clinical, epidemiological and social science research of infectious diseases: (1) diagnosis and treatment of infections, (2) pathogenesis and complications in infectious diseases, (3) principles in medical statistics, (4) Surveillance and epidemiology in infections at domestic and global levels, (5) prevention of transmission and educational approaches to high risk groups, (6) antiviral drugs and viral resistance to drugs.</p>				
Course Outline(授業の概要)	It would not be an overstatement if we say the history of mankind has been a long history of fight against infectious diseases. Researches on infectious diseases have been contributed enormously to the health and longevity of the life in developed nations at present. Development of diagnosis and treatment strategy against infectious diseases, management of comorbidities and complication, surveillance of infections, understanding epidemics provided a big impact to our society. These accomplishments have been made possible by accumulation and collaboration of research studies in clinical sciences, epidemiology, and social sciences. The up-to-date research results including the lecturers’ own experiences will be presented. In addition, students are expected to learn principles of statistical approaches in medical sciences.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Daisuke Mizushima [eE-0]	Diagnosis and treatment of HIV infection2		
2		Daisuke Mizushima [eE-0]	Prevention of HIV and sexually transmitted infections3		
3		Wataru Sugiura [eE-0]	Current issues in global infections		
4		Wataru Sugiura [eE-0]	Genomics in Infectious diseases		
5		Watanabe Koji [eE-0]	opportunistic infection among progressed HIV infected patients		
6		Watanabe Koji [eE-0]	Epidemiological strategy based on the size of transmission source		
7		Hiroyuki Yamamoto [eE-0]	Antiviral immunity: defense versus perturbation		
8		Hiroyuki Yamamoto [eE-0]	Adaptive immune responses in HIV/SIV infection		
9		Mako Toyoda [eE-0]	Current Status and Challenges of Viral Infections in Mothers and Children		
10		Kenzo Tokunaga [eE-0]	Molecular mechanisms of host factors inhibiting viral replication 11		
11		Kenji Maeda [eE-0]	Development of antiviral therapy against viral infection		
12		Shingo Nakahata [eE-0]	Oncology in the area of viral infectious diseases		
13		Takushi Nomura [eE-0]	Animal models for control of infectious diseases		
14		Kenji Sugata [eE-0]	Antigen presentation and T cell response of infectious disease		
15		Naoumi Takahashi [eE-0]	Issues regarding viral persistence		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the class is 30 hours long, the equivalent of 60 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed.				
Reading List(参考文献)	“AIDS info Web site; http://AIDSinfo.nih.gov . Atlas of AIDS 3rd edition; Current Medicine, Inc.,2001. (edited by G.L.Mandelland D.Mildvan.) Harrison’ s principles of internal medicine 16th ed.				

Enrollment Conditions(履修条件)	
Assessment Methods and Criteria(評価方法・基準)	Evaluation will be done based on active class participation, examination test and/or report for subjects by each lecturer. In order to get credits students have to take more than 2/3 lectures. Grading will be based on the average of top 5 scores among ones obtained by the student.
Language Used in Instruction(使用言語)	English
Textbook/Material Language(教科書・資料の言語)	English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-158-82-1	2026whole year	Graduate School of Medical Sciences (25600)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Training I on Infectious Diseases and AIDS(Practice I on Infectious Diseases and AIDS)			SUZU Shinya, Yasunaga Jiyunichirou		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……40% 3.Global perspective and ability to take initiative action ……25% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Training				
Teaching Method(授業の方法)	Attend a 1-week training course as an observer, and lectures related to the diagnosis of infectious diseases, at Kumamoto University Hospital				
Course Goals(授業の目的)	It is very important for basic researchers to know actual clinical practice. Especially on the infectious diseases field to see the advance of treatment allows their research motivations upward. The aim of this course is to visit clinic and see patients with infectious diseases.				
Course Learning goals(学修目標)	[A level (A水準)] Students can learn importance of feedback of basic research outputs to clinics. [C level (C水準)]				
Course Outline(授業の概要)	Attend a 1-week training course as an observer, that includes lectures on the following topics: 1. Introduction to Infectious Diseases 2. Overview on opportunistic infections 3. Patient support 4. Outpatient clinic and ward building tours 5. Clinical conference				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		July 8 - July12 1. Introduction to Infectious Diseases 2. Overview on opportunistic infections 3. Patient support 4. Outpatient clinic and ward building tour 5. Clinical conference	Attend practical training courses (as an observer) and lectures		
Estimated out-of-class study time					
Required Textbook(テキスト)		Nothing in particular			
Reading List(参考文献)		Nothing in particular			
Enrollment Conditions(履修条件)		Japanese Medical License holders will be allowed to see patients. Those that do not have a license, will focus on lectures, tours and rounds			
Assessment Methods and Criteria(評価方法・基準)		Evaluation will be performed considering active participation and contribution during the course, in addition to the report			
Language Used in Instruction(使用言語)		Japanese and English			
Textbook/Material Language(教科書・資料の言語)		Combination of Japanese and English			
Course Based on Practical Work Experience(実務経験を活かした授業)		Not applicable			

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-159-82-1	2026whole year	Graduate School of Medical Sciences (25610)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Training II on Infectious Diseases and AIDS(Training II on Infectious Diseases and AIDS)			SUZU Shinya, GATANAGA Hiroyuki		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……40% 3.Global perspective and ability to take initiative action ……25% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Training				
Teaching Method(授業の方法)	Attend a 1-week training course on HIV clinical practice, the as an observer, at the Center Hospital of the National Center for Global Health and Medicine				
Course Goals(授業の目的)	It is very important for basic researchers to know actual clinical practice. Especially on the HIV/AIDS field to see the advance of treatment allows their research motivations upward. The aim of this course is to visit HIV/AIDS clinic and see patients with HIV infection.				
Course Learning goals(学修目標)	[A level (A水準)] Students can learn importance of feedback of basic research outputs to clinics. [C level (C水準)]				
Course Outline(授業の概要)	During the 1-week course, you also receive lectures below. 1. HIV review 2. Opportunistic infections associated with HIV infection 3. Patient support 4. Meeting for out-patients 5. Meeting for in-patients				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		1. Introduction to HIV infection 2. Overview on opportunistic infections 3. Patient support 4. Outpatient clinic and ward building tours 5. Clinical conference	Attend practical training courses (as an observer) and lectures		
Estimated out-of-class study time					
Required Textbook(テキスト)		Nothing in particular			
Reading List(参考文献)		Nothing in particular			
Enrollment Conditions(履修条件)		Only Japanese Medical License holders			
Assessment Methods and Criteria(評価方法・基準)		Evaluation will be performed considering active participation and contribution during the course, in addition to the report.			
Language Used in Instruction(使用言語)		Japanese			
Textbook/Material Language(教科書・資料の言語)		Japanese			
Course Based on Practical Work Experience(実務経験を活かした授業)		Not applicable			

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-160-79-1	2026whole year	Graduate School of Medical Sciences (25620)	1, 2, 3, 4	8	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice I on Infectious Diseases and AIDS(Practice I on Infectious Diseases and AIDS)			UENO Takamasa, GATANAGA Hiroyuki, TACHIKAWA Ai, YAMAMOTO Hiroyuki, MIZUSHIMA Daisuke, MACHIDA Shinichi, YASUNAGA Junichiro, OSHIUMI Hiroyuki, SAWA Tomohiro, SUZU Shinya, IKEDA Terumasa, TANAKA Yasuto, MOTOZONO Chihiro, NOMURA Takushi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30%					
Type of Class(授業の形態)	Practice				
Teaching Method(授業の方法)	Journal club				
Course Goals(授業の目的)	Students will participate in a journal club held in each laboratory listed above to critically evaluate recent articles in scientific literature (written in English). Students will be given opportunities to present and discuss the latest findings in the form of a journal review.				
Course Learning goals(学修目標)	[A level (A水準)] Students will get the ability to critically evaluate recent articles also by having opportunity to present articles related to their research [C level (C水準)] Students will get the ability to critically evaluate recent articles also by having opportunity to present articles related to their research				
Course Outline(授業の概要)	The format of each journal club may vary. Students are expected to follow the guidelines set forth by each laboratory.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Acquire knowledge related to own research topic	Acquire knowledge related to research topic during the reading meetings		
Estimated out-of-class study time	This course consists of content that requires 360 hours of study. Since the class is 240 hours long, the equivalent of 120 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grades will be determined based on active participation and understanding of journal club materials				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-160-79-1	2026whole year	Graduate School of Medical Sciences (25620)	1, 2, 3, 4	8	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice I on Infectious Diseases and AIDS(Practice I on Infectious Diseases and AIDS)			UENO Takamasa, GATANAGA Hiroyuki, TACHIKAWA Ai, YAMAMOTO Hiroyuki, MIZUSHIMA Daisuke, MACHIDA Shinichi, YASUNAGA Junichiro, OSHIUMI Hiroyuki, SAWA Tomohiro, SUZU Shinya, IKEDA Terumasa, TANAKA Yasuto, MOTOZONO Chihiro, NOMURA Takushi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30%					
Type of Class(授業の形態)	Practice				
Teaching Method(授業の方法)	Journal club				
Course Goals(授業の目的)	Students will participate in a journal club held in each laboratory listed above to critically evaluate recent articles in scientific literature (written in English). Students will be given opportunities to present and discuss the latest findings in the form of a journal review.				
Course Learning goals(学修目標)	[A level (A水準)] Students will get the ability to critically evaluate recent articles also by having opportunity to present articles related to their research [C level (C水準)] Students will get the ability to critically evaluate recent articles also by having opportunity to present articles related to their research				
Course Outline(授業の概要)	The format of each journal club may vary. Students are expected to follow the guidelines set forth by each laboratory.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Acquire knowledge related to own research topic	Acquire knowledge related to research topic during the reading meetings		
Estimated out-of-class study time	This course consists of content that requires 360 hours of study. Since the class is 240 hours long, the equivalent of 120 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grades will be determined based on active participation and understanding of journal club materials				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-161-79-1	2026whole year	Graduate School of Medical Sciences (25630)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice II on Infectious Diseases and AIDS(Practice II on Infectious Diseases and AIDS)			MOTOZONO Chihiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Seminar				
Teaching Method(授業の方法)	Gain insight on the latest progress in the research of infectious diseases and AIDS, by attending the International Symposium "Kumamoto AIDS Seminar"				
Course Goals(授業の目的)	1. Learn about the latest progress by listening to the presentations of leading foreign and Japanese researchers in related fields 2. Learn about presentation techniques, by presenting your own work in the form of a poster or oral presentation 3. Learn about discussion techniques, by actively participating in poster or oral presentations				
Course Learning goals(学修目標)	【A level (A水準)】 1. To be able to understand the latest advance in the research of infectious diseases and AIDS, and to be able to further discuss on the topic 2. Learn how to clearly explain the content of your research project to others, and to establish a scientific discussion 【C level (C水準)】 Understand the contents of invited lecture and summarize the point of lecture.				
Course Outline(授業の概要)	Learn about global status of infectious diseases by joining Kumamoto AIDS seminar. Also, learn about discussion skill by making presentation in the international seminar.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		The 27th Kumamoto AIDS seminar (Tentative: 14-15th September 2026)	Learn about global status of infectious diseases by joining the Kumamoto AIDS seminar. Also, learn about discussion skills by making presentations in the international seminar.		
Estimated out-of-class study time	Pre-study is needed for better understanding the invited lectures. Carefully Read the "Abstract book" in advance.				
Required Textbook(テキスト)	Abstract book of Kumamoto AIDS seminar				
Reading List(参考文献)	NONE				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Evaluation will be done by reports about presentation. The report contains abstract of the presentation, Q & A, and discussion. Students should submit the report within 2 weeks after the seminar. Please be sure to include your student ID number and name in the subject line of the email.				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-162-79-1	2026whole year	Graduate School of Medical Sciences (25640)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice III on Infectious Diseases and AIDS(Practice III on Infectious Diseases and AIDS (WYIS))			IKEDA Terumasa		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30%					
Type of Class(授業の形態)	Practice				
Teaching Method(授業の方法)	Attend the Weely Young Investigator Seminar (WYIS) which involves across laboratories, ask questions and perform presentations related to your research.				
Course Goals(授業の目的)	Gain skills and experience in making presentations and conducting scientific discussions, by attending the Weekly Young Investigator Seminar (WYIS)				
Course Learning goals(学修目標)	[A level (A水準)] Improve skills and techniques in making presentations and conducting scientific discussions, by attending the Weekly Young Investigator Seminar (WYIS) [C level (C水準)] Improve skills and techniques in making presentations and conducting scientific discussions, by attending the Weekly Young Investigator Seminar (WYIS)				
Course Outline(授業の概要)	Presentations in English (15minutes) and debates (5 minutes) will be conducted, in relation to research topics (including introduction, data interpretation, significance and discussion)				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Conduct research presentations and discussion at the WYIS seminar	Research presentations and scientific discussion by each student		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the class is 60 hours long, the equivalent of 30 hours of prior and post-course study is required.				
Required Textbook(テキスト)					
Reading List(参考文献)					
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Evaluation will be performed based on attendance, active participation, frequency with which students ask questions, content of research presentations, technical improvement. 15 or attendances, and 2 or more presentations are required				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-163-79-1	2026whole year	Graduate School of Medical Sciences (25650)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice IV on Infectious Diseases and AIDS(Practice IV on Infectious Diseases and AIDS)			SUZU Shinya		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……40% 3.Global perspective and ability to take initiative action ……10% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Seminar				
Teaching Method(授業の方法)	By taking seminars presented by invited qualified speakers.				
Course Goals(授業の目的)	Learn about the latest progress in the fields of Infectious Diseases, Medicine and Life Sciences, from external lecturers.				
Course Learning goals(学修目標)	[A level (A水準)] Students are expected to be exposed by current research topics in various fields of research topics, across from infectious diseases and other basic and clinical medicine, as well as life sciences. [C level (C水準)]				
Course Outline(授業の概要)	Students can take “D1 Medical and Life Science Seminar” and “D2 Learning from Experienced Doctor” or occasional seminar presented by invited speakers and Invited Speaker Seminar Series hosted by the Program instructors or by instructors’ laboratories.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		informed accordingly	informed accordingly		
Estimated out-of-class study time					
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)	Nothing in particular				
Assessment Methods and Criteria(評価方法・基準)	Students are required to attend more than 15 lectures/seminars before completion of the Thesis research. Also, students are required to submit essays/reports based on all lectures attended.				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-603-79-2	2026whole year	Graduate School of Medical Sciences (25660)	1, 2, 3, 4	10	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Research on Infectious Diseases and AIDS(Research on Infectious Diseases and AIDS)			UENO Takamasa, GATANAGA Hiroyuki, TACHIKAWA Ai, YAMAMOTO Hiroyuki, MIZUSHIMA Daisuke, MACHIDA Shinichi, YASUNAGA Junichiro, OSHIUMI Hiroyuki, SAWA Tomohiro, SUZU Shinya, IKEDA Terumasa, TANAKA Yasuhiro, MOTOZONO Chihiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……80% 3.Global perspective and ability to take initiative action ……20%					
Type of Class(授業の形態)	Practice and Training				
Teaching Method(授業の方法)	Research at each laboratory and thesis preparation				
Course Goals(授業の目的)	Thesis preparation; students will report their research progress to their research mentor and interim review committee, and receive their comments/advices for further research progress.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Students will perform research and prepare their thesis based on results obtained. Students will also present their research results at domestic/international conference(s) and publish their results in academic journal(s) as scientific paper(s).</p> <p>【C level (C水準)】 Students will perform research and prepare their thesis based on results obtained. Students will also present their research results at domestic/international conference(s) and publish their results in academic journal(s) as scientific paper(s).</p>				
Course Outline(授業の概要)	Students will perform research at their laboratory and prepare their thesis. Students will also have an interim interview, and receive the comments/advices for further research progress, and present their research results at domestic/international conference(s).				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Research and thesis preparation	Research on Infectious Diseases and AIDS		
Estimated out-of-class study time	This course consists of content that requires 300 hours of study. Since the class is 240 hours long, the equivalent of 60 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)	By the beginning of third year, students will have an interim interview, the committee of which consists of 3 members, and receive the comments/advices for further research progress.				
Assessment Methods and Criteria(評価方法・基準)	Grade will be assessed based on their research, preparation of thesis and scientific paper, report of research progress at interim interview, and presentation of research results at domestic/international conference(s).				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-604-79-2	2026whole year	Graduate School of Medical Sciences (25670)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Research I on Infectious Diseases and AIDS(pecial Research I on Infectious Diseases and AIDS)			UENO Takamasa, GATANAGA Hiroyuki, TACHIKAWA Ai, YAMAMOTO Hiroyuki, MIZUSHIMA Daisuke, MACHIDA Shinichi, YASUNAGA Junichiro, OSHIMI Hiroyuki, SAWA Tomohiro, SUZU Shinya, IKEDA Terumasa, TANAKA Yasuhito, MOTOZONO Chihiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……50% 3.Global perspective and ability to take initiative action ……50%					
Type of Class(授業の形態)	Practice and Training				
Teaching Method(授業の方法)	Research and training activities at advanced research facilities in developed countries or medical facilities in developing countries for 6 weeks or longer				
Course Goals(授業の目的)	High quality research and fostering of world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries				
Course Learning goals(学修目標)	【A level (A水準)】 High quality research and cultivation of students as future world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries 【C level (C水準)】 High quality research and cultivation of students as future world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries				
Course Outline(授業の概要)	Research and training activities at advanced research facilities in developed countries or medical facilities in developing countries for 6 weeks or longer				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Research and training abroad for 6 weeks or longer	Research and training abroad		
Estimated out-of-class study time	This course consists of content that requires 60 hours of study. Since the class is 48 hours long, the equivalent of 12 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grades will be assessed based on research/training plans and reports after the research/training abroad				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-605-79-2	2026whole year	Graduate School of Medical Sciences (25680)	1, 2, 3, 4	4	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Research II on Infectious Diseases and AIDS(Special Research II on Infectious Diseases and AIDS)			UENO Takamasa, GATANAGA Hiroyuki, TACHIKAWA Ai, YAMAMOTO Hiroyuki, MIZUSHIMA Daisuke, MACHIDA Shinichi, YASUNAGA Junichiro, OSHIUMI Hiroyuki, SAWA Tomohiro, SUZU Shinya, IKEDA Terumasa, TANAKA Yasuto, MOTOZONO Chihiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……50% 3.Global perspective and ability to take initiative action ……50%					
Type of Class(授業の形態)	Practice and Training				
Teaching Method(授業の方法)	Research and training activities at advanced research facilities in developed countries or medical facilities in developing countries for 4 months or longer				
Course Goals(授業の目的)	High quality research and fostering of world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries				
Course Learning goals(学修目標)	[A level (A水準)] High quality research and cultivation of students as future world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries [C level (C水準)] High quality research and cultivation of students as future world-class researchers through the research and training activities at advanced research facilities in developed countries or medical facilities in developing countries				
Course Outline(授業の概要)	Research and training activities at advanced research facilities in developed countries or medical facilities in developing countries for 4 months or longer				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Research and training abroad for 4 months or longer	Research and training abroad		
Estimated out-of-class study time	This course consists of content that requires 180 hours of study. Since the class is 120 hours long, the equivalent of 60 hours of prior and post-course study is required.				
Required Textbook(テキスト)	Nothing in particular				
Reading List(参考文献)	Nothing in particular				
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grades will be assessed based on research/training plans and reports after the research/training abroad				
Language Used in Instruction(使用言語)	English				
Textbook/Material Language(教科書・資料の言語)	English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Endocrinology and Metabolism

Course

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-122-82-0	2026whole year	Graduate School of Medical Sciences (22250)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practical Training of Metabolic Medicine()			Oike Yuuichi, Katou Takahiko, YAMAGATA Kazuya, SAWA Tomohiro, KOMOHARA Yoshihiro, TSUJITA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……30% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Practice				
Teaching Method(授業の方法)	Each training course will be held in a laboratory in charge. First, the principle of a method or a technique will be lectured, then practical handling will be trained. Results, which will be discussed, must be summarized in a report.				
Course Goals(授業の目的)	Various experimental methods and techniques are applied in the field of Metabolism and Cardiovascular Medicine, which is an interdisciplinary research based on epidemiology, internal medicine, pathology, pharmacology, histology and cell biology. For researchers in the field, it is required to learn such experimental methods and techniques practically. Even for researcher outside the field, it is important to understand a background of the experimental methods and techniques, since it gives us a multilateral viewpoint and would support to resolve various problems in specific research fields. Principles and practical procedures for several important experimental methods and techniques were trained in practical training of Metabolism and Cardiovascular Medicine.				
Course Learning goals(学修目標)	【A level (A水準)】 Principles and practical procedures for several important experimental methods and techniques were trained in practical training of Metabolism and Cardiovascular Medicine. 【C level (C水準)】				
Course Outline(授業の概要)	<p>Following methods and techniques are trained:</p> <ul style="list-style-type: none"> · Introduction of epidemiology: Epidemiological and statistical analysis (Public Health) · Introduction of metabolic analysis: Method of analyzing metabolic disease (Molecular Laboratory Medicine) · Metabolic analysis 1: Analyzing intracellular signal transduction in response to metabolic changes (Cell Signaling and Metabolic Medicine) · Metabolic analysis 2: Measurements of insulin by ELISA (Medical Biochemistry) · Metabolic analysis 3: Whole body metabolism, CT (Molecular Genetics) · Metabolic analysis 4: Cardiovascular disease model (Cardiovascular Medicine) · Histological analysis: Histopathology, Immunohistochemistry (Cell Pathology) · Oxidative stress analysis: Measurements of reactive oxygen species (Microbiology) <p>In this course, sessions in Practical training of Developmental Biology and Regenerative Medicine also could be selected.</p>				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Introduction of epidemiology	Epidemiological and statistical analysis (Public Health)		
2		Introduction of metabolic analysis	Method of analyzing metabolic disease (Molecular Laboratory Medicine)		
3		Metabolic analysis 1	Analyzing intracellular signal transduction in response to metabolic changes(Cell Signaling and Metabolic Medicine)		
4		Metabolic analysis 2	Measurements of insulin by ELISA (Medical Biochemistry)		
5		Metabolic analysis 3	Whole body metabolism, CT (Molecular Genetics)		
6		Metabolic analysis 4	Cardiovascular disease model (Cardiovascular Medicine)		
7		Histological analysis	Histopathology, Immunohistochemistry (Cell Pathology)		
8		Oxidative stress analysis	Measurement of oxidative stress and inflammatory markers (Microbiology)		
Estimated out-of-class study time					
Required Textbook(テキスト)	Textbooks are not specified, and handouts for each practice will be distributed.				
Reading List(参考文献)					
Enrollment Conditions(履修条件)					
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation and discussion and the final report. In the report, results and comments concerning at least 8 sessions could be summarized in one or two A4 sheets.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Educational Program for
extension of healthy life
expectancy

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-164-79-2	2026whole year	Graduate School of Medical Sciences (25790)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Lecture I on CMHA(G1 Special Lecture I on CMHA)			ARIMA Yuichiro, TOMIZAWA Kazuhito, IWAMOTO Kazuya, YAMAGATA Kazuya, Sou Bunketsu, ONO Yusuke, SENOKUCHI Takafumi, INOUE Toshihiro, TAKIZAWA Hitoshi, MIYAMOTO Hideaki, KUROTAI Daisuke		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……30% 2.Profound inter-disciplinary knowledge ……40% 3.Global perspective and ability to take initiative action ……25% 4.Social leadership drive ……5%					
Type of Class(授業の形態)	Seminar				
Teaching Method(授業の方法)	By taking advantage of repeated learning and attendance from remote locations, lectures will be conducted by e-learning. Students will take a video class, and ask questions they may have after the class. Students will check for comprehension by submitting a report related to the lecture, or by answering questions presented at the end of the lecture.				
Course Goals(授業の目的)	With a rapidly aging global population due to increased life expectancy, it is medically and socially required to bring the healthy life expectancy (=the period during which one can live a healthy life without disturbing daily life) as close as possible to the limit life expectancy. In order to extend healthy life expectancy, we need to elucidate the basic mechanism of aging in humans and develop methods to prevent and treat aging-related diseases (e.g., diabetes, heart failure, cancer, dementia). By taking this class, students are encouraged to gain a basic knowledge of aging and aging-related disorders in a wide range of research fields, including the physiology of aging, the pathogenic basis of aging-related diseases, epidemiology, therapeutic strategies, and social medicine.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 The following aims have been excellently achieved. (1) To acquire a basic knowledge of aging and aging-related disorders, including the physiology of aging, the pathogenic basis of aging-related diseases, epidemiology, therapeutic strategies, and social medicine. (2) To discuss the latest academic research on aging and healthy longevity.</p> <p>【C level (C水準)】 The following aims have been acceptably achieved. (1) To acquire a basic knowledge of aging and aging-related disorders, including the physiology of aging, the pathogenic basis of aging-related diseases, epidemiology, therapeutic strategies, and social medicine. (2) To discuss the latest academic research on aging and healthy longevity.</p>				
Course Outline(授業の概要)	Students will learn about the physiology of aging as well as aging-related diseases (including pathophysiology, prevention and treatment methods). In addition, students will deepen their understanding of latest academic research on aging and healthy longevity through omnibus-style lectures provided by the faculty members in CMHRA (including all research division: Metabolic and Cardiovascular Research / Cancer and Stem Cell Research / Nervous System, Sensory, and Locomotive Research / Animal Models of Aging Research / Epidemiological Research).				
Details for Individual Classes(各回の授業内容)					
No.(回数)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		1st ARIMA Yuichiro [eE-0]	The biology of aging		
2		2nd YAMAGATA Kazuya [eE-0]	Regulation of glucose metabolism by insulin		
3		3rd YAMAGATA Kazuya [eE-0]	Molecular mechanism of type 2 diabetes		
4		4th YAMAGATA Kazuya [eE-0]	Monogenic form of diabetes mellitus		
5		5th SENOKUCHI Takafumi [eE-0]	To achieve healthy longevity -Learn about diabetic complications and their therapeutic approaches		
6		6th MIYAMOTO Hideaki [eE-0]	The latest advances in gastrointestinal cancer treatment		
7		7th KUROTAI Daisuke [eE-0]	Overview of Chromatin Structure Analysis		
8		8th TAKIZAWA Hitoshi [eE-0]	Inflamm-aging of blood system		
9		9th KUROTAI Daisuke [eE-0]	Overview of Chromatin Structure Analysis		
10		10th SONG Wen-Jie [eE-0]	Learning and memory		
11		11th IWAMOTO Kazuya [eE-0]	Aging-related epigenetic changes and psychiatric disorders		
12		12th INOUE Toshihiro [eE-0]	Glaucoma that threatens healthful longevity		
13		13th ONO Yusuke [eE-0]	Age-related changes in skeletal muscle and sarcopenia		
14		14th ARIMA Yuichiro [eE-0]	Cardiovascular diseases that increase with aging 1		
15		15th ARIMA Yuichiro [eE-0]	Cardiovascular diseases that increase with aging 2		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the lesson is 30 hours (2 hours x 15 frames), 60 hours of pre- and post-study (including reports) is required to deepen the understanding of the lesson.				
Required Textbook(テキスト)	No particular textbook. Materials summarizing the points of the lecture will be distributed.				
Reading List(参考文献)	Biology of Aging (2nd Edition, by Roger B. McDonald) ISBN 9780815345671 The Biology of Senescence: A Translational Approach (by Bernard Swynghedauw) ISBN 9783030151102				
Enrollment Conditions(履修)	Have basic knowledge concerning what is taught in this course.				

条件)	Have basic knowledge concerning what is taught in this course.
Assessment Methods and Criteria(評価方法・基準)	This class consisted of a series of omnibus lectures by 15 lecturers as listed in the schedule. Evaluation will be done based on active class participation, examination test and/or report for subjects by each lecturer. In order to get credits students have to take more than 2/3 lectures. Grading will be based on the average of top 10 scores among ones obtained by the student.
Language Used in Instruction(使用言語)	English
Textbook/Material Language(教科書・資料の言語)	English
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-165-79-2	2026whole year	Graduate School of Medical Sciences (25800)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Lecture II on CMHA(G2 Special Lecture II on CMHA)			OKI Shinya, CHUJO Takeshi, SOU Bunketsu, KADOMATSU Tsuyoshi, TAKAHASHI Yuta, ZOU Zhaonan		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……35% 2.Profound inter-disciplinary knowledge ……35% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Lecture and Seminar				
Teaching Method(授業の方法)	This class can be completed within one year or extended over multiple years to earn credits. Both remote and face-to-face formats. The student in charge will commence the presentation with a self-introduction and post-PhD plans, followed by a detailed explanation of their research, including an overview of relevant previous studies. Active participation in Q&A sessions and discussions is anticipated from all participants. Non-presenting students are required to submit reports for each session, while presenters are exempt from this requirement. Grades will be determined based on both presentations and reports.				
Course Goals(授業の目的)	Practical learning of the latest research on the biology of aging, the mechanisms of several age-related diseases, public health, epidemiology, research tools, how to conduct research, and training of presentation etc.				
Course Learning goals(学修目標)	[A level (A水準)] Students are expected to have a good understanding of their own research content, give an excellent PowerPoint presentation, actively participate in the question and answer session, and submit a comprehensive report. [C level (C水準)] Students should understand their own research content, give a PowerPoint presentation, participate in the question and answer session, and submit a report.				
Course Outline(授業の概要)	In this course, students will study research on the biology of aging, the mechanisms of several age-related diseases, public health, epidemiology, research tools, and learn how to conduct research and improve presentation skills through making presentations, engaging in discussions, and writing reports.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Tutorial 1: Oct. 9th, 6th period (18:30 - 20:00)	Introduction (How to make a presentation)This class will be counted as two classes, and the end of the class will be delayed.		
2		Tutorial 1: Oct. 16th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
3		Tutorial 1: Oct. 23rd, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
4		Tutorial 1: Oct. 30th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
5		Tutorial 1: Nov. 6th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
6		Tutorial 1: Nov. 13th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
7		Tutorial 1: Nov. 20th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
8		Tutorial 1: Nov. 27th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
9		Tutorial 1: Dec. 4th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
10		Tutorial 1: Dec. 11th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
11		Tutorial 1: Dec. 18th, 6th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
12		Tutorial 1: Jan. 8th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing.		
13		Tutorial 1: Jan. 15th period (18:30 - 20:00)	Students will study the contents of their respective research through presentations, discussions, and report writing. This class will be counted as two classes, and the end of		

13		Tutorial 1: Jan. 15th period (18:30 - 20:00)	the class will be delayed.
14		-----	-----
15		-----	-----
Estimated out-of-class study time			
Required Textbook(テキスト)		None	
Reading List(参考文献)		The instructor for each session will upload the paper on Moodle.	
Enrollment Conditions(履修条件)		Students should have basic knowledge related to this class.	
Assessment Methods and Criteria(評価方法・基準)		<p>Students must attend over 10 classes within a single year or across multiple years before completing their Thesis research. Additionally, students must deliver at least one PowerPoint presentation. For all classes except the one they present in, students are required to submit essays/reports on the class's presentation via Moodle within one month (for more than 9 classes). Attendance is recorded upon report submission. There will be no final exam.</p> <p>Note: Classes marked as 'counted as two' will be recorded as two attendances/reports in a single session, even if they end later.</p>	
Language Used in Instruction(使用言語)		English	
Textbook/Material Language(教科書・資料の言語)		English	
Course Based on Practical Work Experience(実務経験を活かした授業)		Not applicable	

Course Coding(科目番号)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-000-81-2	2026whole year	Graduate School of Medical Sciences (25850)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Lecture on Bioethics (For students admitted in 2022 and before)(A1 Medical Informatics and Medical Ethics)			KADOOKA Yasuhiro, KASAOKA Shunji, NAKAMURA Taishi, USUKU Koichiro		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……25% 2.Profound inter-disciplinary knowledge ……25% 3.Global perspective and ability to take initiative action ……25% 4.Social leadership drive ……25%					
Type of Class(授業の形態)	Lecture and Seminar				
Teaching Method(授業の方法)	The course is provided by lecture and discussion or e-Learning using the moodle or CITI Japan.				
Course Goals(授業の目的)	Medical Informatics and Medical Ethics aims at proper management of health information and ethical problems arose from medical practice. In this course, you learn basic concepts used in this filed, including electronic health records, protection of computer-processed personal data, health care system in Japan and other countries, evaluation of medical care and DPC, problems of abortion, euthanasia and death with dignity, informed consent, principle of ethics. This course serves as introductory for all students as you obtain essential knowledge on medical informatics and medical ethics, and emergency medicine.				
Course Learning goals(学修目標)	【A level (A水準)】 To be able to handle or manage health information and ethical problems arose from medical practice. 【C level (C水準)】				
Course Outline(授業の概要)	In order to explain basic principles of medical informatics and medical ethics, it is discussed how the problems are managed. Basic concepts are introduced. More specifically, you are expected to understand the followings: (1) electronic health records; (2) protection of computer-processed personal data; (3) information literacy; (4) ethical issues at the beginning of life; (5) ethical issues at the end of life; (6) informed consent, privacy and principle of ethics, (7) research, high technology medicine and ELSIs, (8) emergency medical service system and (9)disaster medicine. Participants are requested to learn medical ethics through e-learning system offered by the project of Collaborative Institutional Training Initiative (CITI) Japan, or submit a short comment on some lectures, which will be helpful to provide positive feed back to the next session.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Yasuhiro Kadooka 【eEJ-0】 Class Orientation and eAPRIN	<ul style="list-style-type: none"> • Introduction and orientation of this course • Responsible Conduct of Research_RCR • Research Misconduct_RCR • Data Handling_RCR 		
2		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Rules for Collaborative Research_RCR • Conflicts of Interest_RCR • Authorship_RCR 		
3		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • What Is Plagiarism?_RCR • Communicating Information to the Public_RCR • Peer Review(Biomedical)_RCR 		
4		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Mentoring_RCR • Managing Public Research Funds_RCR • Research Integrity and Research Security_RCR 		
5		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Appropriate Use of AI in Research, etc._RCR • Ethics of Medical and Health Research Involving Human Subjects I • Ethics of Medical and Health Research Involving Human Subjects II 		
6		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Review by an Institutional Review Board (IRB)_HSR • Handling Personal Information in Research_HSR • Genomic and Genetic Analysis Studies in Human Populations_HSR 		
7		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Group Harm Arising from Research_HSR • Informed Consent in Research_HSR • Research Subjects Who Merit Special Considerations_HSR 		
8		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • Records-Based Research_HSR • Social and Behavioral Research for Biomedical Researchers_HSR • International Studies_HSR 		
9		eAPRIN 【eEJ-0】	<ul style="list-style-type: none"> • The Ethics of Pluripotent Stem Cell Research I_HSR • The Ethics of Pluripotent Stem Cell Research II_HSR • Medical and Health Research Involving Human Subjects_HSR 		
10		Taishi Nakamura and Koichiro Usuku 【eEJ-0】	Health care system in Japan and in the world		
11		Taishi Nakamura and Koichiro Usuku 【eEJ-0】	Future prospects of Electronic medical records, Clinical research and data ware house		
12		Shunji Kasaoka 【eE-0】 【eJ-0】	Emergency Medical Service System, Post-Cardiac Arrest Syndrome		
13		Shunji Kasaoka 【eE-0】 【eJ-0】	Disaster Medicine, Triage		
14		Yasuhiro Kadooka 【eE-0】 【eJ-0】	Step up Lecture for Research Ethics (1)		

15		Yasuhiro Kadooka [eE-0] [eJ-0]	Step up Lecture for Research Ethics (2)
Estimated out-of-class study time	This subject requires 90 hours of study, and the class is 30 hours. Therefore pre- and post-study on tasks equivalent to 60 hours is necessary to deepen the understanding of the class.		
Required Textbook(テキスト)	Textbooks are not specified, and handouts will be distributed by the moodle system.		
Reading List(参考文献)	Provided in the lectures.		
Enrollment Conditions(履修条件)	No prerequisite.		
Assessment Methods and Criteria(評価方法・基準)	Grading will be based on active class participation, paper summaries, and the final report. Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and questions related to the topics dealt with in class to be scored from grade 1 to 5. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.		
Language Used in Instruction(使用言語)	Japanese and English		
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English		
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable		

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-166-99-2	2026whole year	Graduate School of Medical Sciences (25810)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Special Practice(Special Practice)			ARIMA Yuichiro, YAMAGATA Kazuya, Oike Yuuichi, TSUJITA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Other				
Teaching Method(授業の方法)	Students can take seminars presented by invited speakers (including "D1 Medical and Life Seminar" and "D2 Learning from Experienced Doctor").				
Course Goals(授業の目的)	Students are encouraged to gain a basic knowledge about aging, aging-related diseases, and healthy life expectancy.				
Course Learning goals(学修目標)	<p>【A level (A水準)】 Students excellently acquired a knowledge about aging/aging-related diseases/ therapeutic strategies for healthy life expectancy, and can discuss about the problems.</p> <p>【C level (C水準)】 Students acceptably acquired a knowledge about aging/aging-related diseases/ therapeutic strategies for healthy life expectancy, and can discuss about the problems.</p>				
Course Outline(授業の概要)	Students can learn about recent advances of the research fields by taking seminars presented by invited speakers (including "D1 Medical and Life Seminar" and "D2 Learning from Experienced Doctor").				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Research seminar	Research seminar by invited speakers		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the lesson is 30 hours (2 hours x 15 frames), 60 hours of pre- and post-study (including reports) is required to deepen the understanding of the lesson.				
Required Textbook(テキスト)	No particular textbook.				
Reading List(参考文献)	Biology of Aging (2nd Edition, by Roger B. McDonald) ISBN 9780815345671 The Biology of Senescence: A Translational Approach (by Bernard Swynghedauw) ISBN 9783030151102				
Enrollment Conditions(履修条件)	Have basic knowledge concerning what is taught in this course.				
Assessment Methods and Criteria(評価方法・基準)	Students are required to attend seminars (more than 12 times) presented by invited speakers (including "D1 Medical and Life Seminar" and "D2 Learning from Experienced Doctor") for credit before completion of their Thesis research. Students are also required to write at least 4 essays about the seminars. Students have to submit the essay to the professors in charge within one month by e-mail.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-167-79-2	2026whole year	Graduate School of Medical Sciences (25820)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice I on CMHA(Practice I on CMHA)			ARIMA Yuichiro, YAMAGATA Kazuya, Oike Yuuichi, TSUJITA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Other				
Teaching Method(授業の方法)	Students will present their research results at a domestic conferences/meeting.				
Course Goals(授業の目的)	Students can present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) as a first author at a domestic conferences/meeting.				
Course Learning goals(学修目標)	[A level (A水準)] Students can excellently present and discuss their research results (e.g. about aging, aging-related diseases, and healthy life expectancy) at a domestic conferences/meeting. [C level (C水準)] Students can acceptably present and discuss their research results (e.g. about aging, aging-related diseases, and healthy life expectancy) at a domestic conferences/meeting.				
Course Outline(授業の概要)	Students can present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) as a first author at a domestic conferences/meeting.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Presentation at domestic conferences/meeting.	Presentation at domestic conferences/meeting.		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the lesson is 30 hours (2 hours x 15 frames), 60 hours of pre- and post-study (including reports) is required to deepen the understanding of the lesson.				
Required Textbook(テキスト)	No particular textbook.				
Reading List(参考文献)	No particular textbook.				
Enrollment Conditions(履修条件)	Have basic knowledge concerning what is taught in this course.				
Assessment Methods and Criteria(評価方法・基準)	(1) Presentation of research results at domestic conferences/meeting. (2) The record of presentation (e.g. abstract) is necessary.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

(Reference Translation)

Guidelines for Approval of Credits for Practice I on CMHA (Presentation at domestic conferences)

(Purpose)

Article 1

These guidelines prescribe the matters regarding the approval of credits for Practice I on CMHA (hereinafter referred to as “Practice I”) offered by the Educational Program for Extension of Healthy Life Expectancy of the Graduate School of Medical Sciences.

(Overview of Practice I)

Article 2

In Practice I, students are required to attend academic conferences, lectures, symposiums, and other academic meetings organized by universities and other academia (excluding those organized by the private sector) held in Japan (hereinafter referred to as “academic conferences”), and credits are granted for oral or poster presentations at academic conferences.

(The number of credits to be granted)

Article 3

In Practice I, a maximum of two (2) credits shall be granted according to the type of academic conference at which the presentation is made, as listed below. However, the judgment as to which academic conferences credits can be granted for shall be made by the chief instructor of Practice I.

- (1) A maximum of two (2) credits is allowed for each oral or poster presentation at a domestic academic conference as the first author of the presentation abstract.
- (2) For presentations at regional conferences (regional meetings, etc.), the maximum number of credits is one (1) per attendance with oral or poster presentation as the first author of the presentation abstract.

2 The criteria for the number of credits to be granted shall be as listed in the following table according to the number of days of the academic conferences mentioned in each item of the preceding paragraph.

Academic conference	The number of credits to be granted	Examples of credits to be granted
National	One third (1/3) of one credit is granted for each half day (approximately 5 hours) of the conference period.	• 1-day conference: 2/3 • 2-day conference: 4/3 • 3 or more-day conference: 2
Regional	One sixth (1/6) of one credit is granted for each half day (approximately 5 hours) of the conference period.	• 1-day conference: 1/3 • 2-day conference: 2/3 • 3 or more-day conference: 1

*Remarks

(a) In principle, the stipulated maximum number of credits shall be granted for three days of attendance at an academic conference. The rationale for this is that 15 hours of class attendance in lectures and seminar courses at the Graduate School of Medical Sciences is defined as one credit and that as the regular program of academic conferences is from 8:00 a.m. to around 6:00 p.m., three days of attendance at an academic conference is equivalent

to approximately 30 hours of class attendance.

(b) When the academic conference is held online only, the number of days actually attended online should be counted for credits.

(c) When an academic conference is held as a hybrid of on-site and online meeting, and there is a period of streaming service, such period should not be included in the number of days of the conference, but only the number of days held on-site should be counted for credits.

(d) The number of credits for attendance at academic conferences that do not conform to the above-mentioned rules shall be determined by the chief instructor of Practice I.

(Application)

Article 4

When a student wishes to earn credits for Practice I, the documents listed below must be submitted, in principle, during the academic year in which the presentation is made to the Student Affairs Office of the Graduate School of Medical Sciences (hereinafter referred to as the "GSMS Student Affairs Office").

(1) Application for Approval of Credits for Practice I on CMHA (Presentation at domestic academic conferences)
(Form 1)

(2) A copy of the certificate of participation in the academic conference

(3) A copy of the conference program containing the applicant's presentation information

(4) A copy of the conference abstract containing the applicant's name as a leading presenter

(5) Request for Approval of Credits for Practice I on CMHA (Presentation at domestic academic conferences)
(Form 2)

(Submit this form when the applicant has lost any of the required documents above or has participated in an online conference.)

2 The application requirements for credits are as follows:

(1) The applying student must be the first presenter.

(2) The applicant's affiliation must be with Kumamoto University, in principle. If the applicant's affiliation is not with Kumamoto University, the applicant's academic advisor must be included in the presentation as a co-presenter.

(3) In principle, conferences shall be attended in person. In the case of online attendance, the request form stipulated in (5) of Article 4 must be submitted.

(Screening)

Article 5

The instructor of Practice I shall review the application documents submitted to the GSMS Student Affairs Office and calculate the number of credits requested in accordance with the credit conversion table stipulated in Paragraph 2 of Article 3.

(Approval of Credits)

Article 6

The instructor of Practice I shall approve the credits calculated as in the preceding Article and report the granted

credits to the GSMS Student Affairs Office. When two credits are to be granted, a grade evaluation shall be made at the same time.

2 The number of credits approved in accordance with the preceding paragraph may be accumulated from year to year until two credits are earned. When the total number of credits accumulated reaches two credits, the instructor shall grant the credits and grade the student.

Supplementary Provisions

1. These guidelines shall come into effect as of May 29, 2024.
2. Only within the academic year 2024, regardless of the provisions of Paragraph 1 of Article 4, students may apply with respect to conferences attended in the past.

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-168-79-2	2026whole year	Graduate School of Medical Sciences (25830)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice II on CMHA(Practice II on CMHA)			ARIMA Yuichiro, YAMAGATA Kazuya, Oike Yuuichi, TSUJITA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Other				
Teaching Method(授業の方法)	Students will present their research results at international conferences/meeting.				
Course Goals(授業の目的)	Students can present and discuss their research results (e.g. aging, age-related diseases, and healthy life expectancy) as a first author at international conferences/meeting.				
Course Learning goals(学修目標)	[A level (A水準)] Students can excellently present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) at international conferences/meeting. [C level (C水準)] Students can acceptably present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) at international conferences/meeting.				
Course Outline(授業の概要)	Students can present and discuss their research results (e.g. aging, age-related diseases, and healthy life expectancy) as a first author at international conferences/meeting.				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Presentation at international conferences/meeting	Presentation at international conferences/meeting		
Estimated out-of-class study time	This course consists of content that requires 90 hours of study. Since the lesson is 30 hours (2 hours x 15 frames), 60 hours of pre- and post-study (including reports) is required to deepen the understanding of the lesson.				
Required Textbook(テキスト)	No particular textbook.				
Reading List(参考文献)	No particular textbook.				
Enrollment Conditions(履修条件)	Have basic knowledge concerning what is taught in this course.				
Assessment Methods and Criteria(評価方法・基準)	(1) Presentation of research results at international conferences/meeting. (2) The record of presentation (e.g. abstract) is necessary.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				

(Reference Translation)

Guidelines for Approval of Credits for Practice II on CMHA (Presentation at international conferences*)

*Academic conferences held outside of Japan

(Purpose)

Article 1

These guidelines prescribe the matters regarding the approval of credits for Practice II on CMHA (hereinafter referred to as “Practice II”) offered by the Educational Program for Extension of Healthy Life Expectancy of the Graduate School of Medical Sciences.

(Overview of Practice II)

Article 2

In Practice II, students are required to attend academic conferences, lectures, symposiums, and other academic meetings organized by universities and other academia (excluding those organized by the private sector) held outside of Japan (hereinafter referred to as “academic conferences”), and credits are granted for oral or poster presentations at academic conferences.

(The number of credits to be granted)

Article 3

In Practice II, a maximum of two (2) credits shall be granted according to the type of academic conference at which the presentation is made, as listed below. However, the judgment as to which academic conferences credits can be granted for shall be made by the chief instructor of Practice II.

- (1) A maximum of two (2) credits is allowed for each oral or poster presentation at an international academic conference as the first author of the presentation abstract.
- (2) For presentations at regional conferences (regional meetings, etc.), the maximum number of credits is one (1) per attendance with oral or poster presentation as the first author of the presentation abstract.

2 The criteria for the number of credits to be granted shall be as listed in the following table according to the number of days of the academic conferences mentioned in each item of the preceding paragraph.

Academic conference	The number of credits to be granted	Examples of credits to be granted
International conferences held outside of Japan	One third (1/3) of one credit is granted for each half day (approximately 5 hours) of the conference period.	• 1-day conference: 2/3 • 2-day conference: 4/3 • 3 or more-day conference: 2
Regional conferences held outside of Japan	One sixth (1/6) of one credit is granted for each half day (approximately 5 hours) of the conference period.	• 1-day conference: 1/3 • 2-day conference: 2/3 • 3 or more-day conference: 1

*Remarks

(a) In principle, the stipulated maximum number of credits shall be granted for three days of attendance at an academic conference. The rationale for this is that 15 hours of class attendance in lectures and seminar courses at the Graduate School of Medical Sciences is defined as one credit and that as the regular program of academic conferences is from 8:00 a.m. to around 6:00 p.m., three days of attendance at an academic conference is equivalent

to approximately 30 hours of class attendance.

(b) When the academic conference is held online only, the number of days actually attended online should be counted for credits.

(c) When an academic conference is held as a hybrid of on-site and online meeting, and there is a period of streaming service, such period should not be included in the number of days of the conference, but only the number of days held on-site should be counted for credits.

(d) The number of credits for attendance at academic conferences that do not conform to the above-mentioned rules shall be determined by the chief instructor of Practice II.

(Application)

Article 4

When a student wishes to earn credits for Practice II, the documents listed below must be submitted, in principle, during the academic year in which the presentation is made to the Student Affairs Office of the Graduate School of Medical Sciences (hereinafter referred to as the "GSMS Student Affairs Office").

(1) Application for Approval of Credits for Practice II on CMHA (Presentation at international academic conferences) (Form 1)

(2) A copy of the certificate of participation in the academic conference

(3) A copy of the conference program containing the applicant's presentation information

(4) A copy of the conference abstract containing the applicant's name as a leading presenter

(5) Request for Approval of Credits for Practice II on CMHA (Presentation at international academic conferences) (Form 2)

(Submit this form when the applicant has lost any of the required documents above or has participated in an online conference.)

2 The application requirements for credits are as follows:

(1) The applying student must be the first presenter.

(2) The applicant's affiliation must be with Kumamoto University, in principle. If the applicant's affiliation is not with Kumamoto University, the applicant's academic advisor must be included in the presentation as a co-presenter.

(3) In principle, conferences shall be attended in person. In the case of online attendance, the request form stipulated in (5) of Article 4 must be submitted.

(Screening)

Article 5

The instructor of Practice II shall review the application documents submitted to the GSMS Student Affairs Office and calculate the number of credits requested in accordance with the credit conversion table stipulated in Paragraph 2 of Article 3.

(Approval of Credits)

Article 6

The instructor of Practice II shall approve the credits calculated as in the preceding Article and report the granted

credits to the GSMS Student Affairs Office. When two credits are to be granted, a grade evaluation shall be made at the same time.

2 The number of credits approved in accordance with the preceding paragraph may be accumulated from year to year until two credits are earned. When the total number of credits accumulated reaches two credits, the instructor shall grant the credits and grade the student.

Supplementary Provisions

1. These guidelines shall come into effect as of May 29, 2024.
2. Only within the academic year 2024, regardless of the provisions of Paragraph 1 of Article 4, students may apply with respect to conferences attended in the past.

Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-169-79-2	2026whole year	Graduate School of Medical Sciences (25840)	1, 2, 3, 4	2	others
Course Title(Theme)(科目名(講義題目))			Instructor(s)(担当教員)		
Practice III on CMHA(-)			OKI Shinya, YAMAGATA Kazuya, Oike Yuuichi, TSUJITA Kenichi		
Goals with their ratio(学修成果とその割合)					
1.Advanced expert knowledge, skill and research capability ……40% 2.Profound inter-disciplinary knowledge ……30% 3.Global perspective and ability to take initiative action ……20% 4.Social leadership drive ……10%					
Type of Class(授業の形態)	Other				
Teaching Method(授業の方法)	Students will present their research results at CMHA cross-cutting conference (e.g. CMHA borderless conference).				
Course Goals(授業の目的)	Students will present and discuss their research results at CMHA cross-cutting conference (e.g. CMHA borderless conference).				
Course Learning goals(学修目標)	[A level (A水準)] Students can excellently present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) at CMHA cross-cutting conferences (e.g. CMHA borderless conference). [C level (C水準)] Students can acceptably present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) at CMHA cross-cutting conferences (e.g. CMHA borderless conference).				
Course Outline(授業の概要)	Students can present and discuss their research results (e.g. aging, aging-related diseases, and healthy life expectancy) at CMHA cross-cutting conferences (e.g. CMHA borderless conference).				
Details for Individual Classes(各回の授業内容)					
No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)		
1		Presentation at CMHA cross-cutting conference	Presentation at CMHA cross-cutting conference		
Estimated out-of-class study time					
Required Textbook(テキスト)	None				
Reading List(参考文献)	None				
Enrollment Conditions(履修条件)	Having basic knowledge about this class.				
Assessment Methods and Criteria(評価方法・基準)	Presentation of research results at CMHA cross-cutting conference at least one time.				
Language Used in Instruction(使用言語)	Japanese and English				
Textbook/Material Language(教科書・資料の言語)	Combination of Japanese and English				
Course Based on Practical Work Experience(実務経験を活かした授業)	Not applicable				