

Academic Year 2016

**The Graduate School of Medical Sciences
Kumamoto University
(Master's Course)**

Syllabus

**The Graduate School of Medical Sciences
Kumamoto University**

URL: <http://www.medphas.kumamoto-u.ac.jp/en/medgrad/index.html>

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The objective and principle of the Graduate School of Medical Sciences, Kumamoto University

The Graduate School of Medical Sciences of Kumamoto University was established to produce researchers, educators and highly specialized professionals who have advanced medical and life-science knowledge, as well as critical thinking skills.

The Master's Course (Division of Medical Sciences) was established to provide graduates from universities, other than from medical, dental and veterinary schools (departments), and those who are recognized as having attainments equal to or greater than graduation, with a basic knowledge of medicine and life sciences. The course encourages them to become researchers and educators who are able to take on the new medical and health care challenges brought about by technological innovation. The course also aims to develop highly specialized professionals who have strong expertise, and who can play leading roles in the areas of medicine, health care and life sciences.

Master's Course Curriculum Policy for the Graduate School of Medical Sciences, Kumamoto University

Our curriculum focuses on developing knowledge and skills as described below, through research guidance that includes omnibus-style lectures and one-on-one education. We do this to produce researchers, educators and highly specialized professionals who have sophisticated expertise, and who will be active in the fields of medical and life science.

1. Interdisciplinary knowledge needed to solve multidisciplinary problems relating to medical and life sciences
2. Special knowledge of advanced medical care that will allow the student to contribute to health promotion both inside and outside Japan
3. The ability to conduct research that covers the latest medical and life science advancements brought about by technological innovation

Feature 1

Kumamoto University has established the Center for AIDS Research, the Institute of Resource Development and Analysis and the Institute of Molecular Embryology and Genetics as its medical research centers. With these institutions as a core, advanced research is conducted especially in the fields of infection and immunology, medical embryology, medical genetics, the brain and neuroscience. Since these fields are broadly included in life science, we accept a wide range of persons from various faculties not limited to those of medical, dental and veterinary sciences. By providing them with distinctive education, we can foster unique human resources and facilitate the development of research.

Feature 2

Kumamoto University Hospital is actively engaged in highly-sophisticated medical treatment such as gene testing, gene therapy for various diseases (genetic disorder, cancer, AIDS and other infectious diseases) and organ transplantation including liver and kidney. To provide such medical treatment, not only doctors but specialists with advanced medical knowledge covering diverse fields are required and it is imperative to cultivate such specialists. In the Master's Course, we have built up an educational system to cultivate human resources who meet these needs through education concerning the fundamentals of highly-sophisticated medical treatment and clinical medicine.

Contents

	Page
1. Notandum for course registration.....	1
2. Lecture course/subject and credit.....	2
3. Registration Application.....	3
4. Lecture course timetable.....	4
5 Screening criterion of a Master's thesis and assessment criterion for the final examination.....	5
6. Compulsory subjects and elective subjects	
A. Compulsory subjects	
A1 Morphological Human Physiology.....	7
A2 Functional Human Physiology.....	8
A3 General Social Medicine.....	9
A4 General Clinical Medicine	10
A5 Bioethics	11
B. Elective subjects	
B1 Clinical Pathology.....	13
B2 Infection and Immunology.....	14
B3 Metabolic Informatics.....	15
B4 Neuroscience.....	16
B5 Heredity Reproduction Medicine	17
B6 Medical Informatics.....	18
B7 Introduction for Laboratory Animal Experiments	19
B8 Basic Radiology.....	20
C. Elective subjects	
C1 Medical Experiment Course.....	21
C2 Medical and Life Science Seminar (Medical and Life Science Seminar, Learning from Experienced Doctors Seminar)	22
A report format of "C2 Medical and Life Science Seminar"	24
D. Departmental Course (compulsory subjects)	
A6. Exercises in Medical Sciences.....	26
A7. Study in Medical Science.....	26
7. Campus map and lecture room location	last page

1. Notandum for course registration

- 1) **General Education Programs:** There are compulsory and elective subjects offered in our graduate course curriculum, as described on page 2. Please note that students must obtain 30 designated credits during the two years in this graduate school. Otherwise, their academic work shall not be deemed complete, even if their research and Master's thesis are completed. Students are requested to contact their academic supervisors for advice in order to decide which elective subjects to take. An application form attached (page 3) should be submitted to the Student Affairs Section, (Kyoumu-Tanto) at this graduate school office by April 11 (Mon). Students can change elective subjects until April 15 (Fri). It's not allowed to change after that.
- 2) **SOSEKI Registration:** Students' academic achievement information is to be managed by SOSEKI (Kumamoto University School Affairs Information System). After submitting the above-mentioned application, students should register their compulsory subjects(A1~A7) and elective subjects listed in their application via a web browser of SOSEKI by April 11 (Mon).
- 3) **Departmental Course (compulsory subjects):** "A6 Exercises in Medical Sciences" and "A7 Study in Medical Science", described on page 2, are comprised of Journal club, learning of experimental planning and technique, practical experiments at the department students belong to, and it is necessary to complete master's thesis and the public presentation (the oral examination).
Application form for Departmental Course should be submitted to the Student Affairs Section as same as other subjects by April 11 (Mon). Students can change the application until May 6 (Fri). It's not allowed to change these subjects after May 6 (Fri).
- 4) **Lecture course timetable:** Lecture-style classes will be held in 90-minute sessions as indicated on page 4 and attendance will be taken. Lectures of all subjects will be given from Tuesday, April 5, 2016 to Tuesday, June 14, 2016
Lectures are scheduled as follows: the 1st period is 8:45~10:15, the 2nd period is 10:30~12:00, the 3rd period is 13:15~14:45, the 4th period is 15:00~16:30. If there are any students who can't understand Japanese, the lectures will be given in English (or it may be a combination of English and Japanese).
- 5) **Lecture Room:** Lectures offered by several instructors (omnibus classes) will be given in the Lecture Room 2 on the 3rd floor of the Medical Education & Library Building. The location of the lecture room is shown on the campus map (the last page). Refer to it in advance or ask your academic advisor, if necessary.
- 6) **C1 Medical Experiment Course:** The elective subject, "C1 Medical Experiment Course" requires students to attend more than 8 lectures a year for credit. Attendance will be taken in all of these courses.
- 7) **C2 Medical and Life Science Seminar (Medical and Life Science Seminar and Learning from Experienced Doctors Seminar):** "Medical and Life Science Seminar" and "Learning from Experienced Doctors Seminar" , require students to attend more than 8 lectures for credit before completion of their Thesis research. Write 1 essay based on 1 talk chosen from more than 8 lectures. Length of the essays should be 250-500 words. Attendance will be taken in all of these courses. Send each essay to the supervisor (inviter of the talker) of the talk within one month by E-mail (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 the Student Affairs Section (iyg-igaku@jimu.kumamoto-u.ac.jp). "Medical and Life Science Seminar" and "Learning from Experienced Doctors Seminar" will be given in principle from 17:30 on Wednesdays of the month at the lecture room 2 on the 3rd floor of the Medical Education & Library Building. However, the date, time or place of these lectures may change due to the instructor's and lecturer's schedules. Please check the details beforehand with the seminar guide leaflet distributed to each Department you belong to.
Please refer to p22~p24 for the seminar schedule and report format.

8) **Assessment of Academic Grades:** Each course director in charge of a particular subject of the Lecture Series is responsible for the assessment of academic grades for the corresponding subject. If there is a disagreement between the course director and instructors of the class in regards to their information and instructions, please be aware that information provided by the course director prevails over that of any other instructors. Submit all assignments (e.g., paper summaries and reports) directly to your directors/instructors, not to clerical members at the graduate school office. Assignments may be submitted via e-mail; in this case, be sure to keep a transmission record.

9) **Grade Appeals System:** We have grade appeals system for all students. Please refer to the notification which will be posted on the bulletin board for the detail.

10) **E-mail address:** Announcements of change of lectures, e-learning, seminar, economic support, and other information will be mainly informed by e-mail, a homepage of Graduate School of Medical Sciences and a bulletin board. Please be sure to send your e-mail address to Student Affairs Section (iyg-igaku@jimu.kumamoto-u.ac.jp) by e-mail with your name and student number by April 5(Tue). If you change your e-mail address, please let us know your new e-mail address as soon as possible.

2. Lecture course/subject and credit

1) Curriculum outline

Subjects	Credits	Subjects	Credits
A Compulsory subjects		B Elective Subjects	
A1 Morphological Human Physiology (p.7)	2	B1 Clinical Pathology (p.13)	1
A2 Functional Human Physiology (p.8)	2	B2 Infection and Immunology (p.14)	1
A3 General Social Medicine (p.9)	2	B3 Metabolic Informatics (p.15)	1
A4 General Clinical Medicine (p.10)	2	B4 Neuroscience (p.16)	1
A5 Bioethics (p.11)	1	B5 Heredity Reproduction Medicine (p.17)	1
A6 Exercises in Medical Sciences (p.26)	8	B6 Medical Informatics (p.18)	1
		B7 Introduction for Laboratory Animal Experiments (p.19)	1
A7 Study in Medical Science (p.26)	8	B8 Basic Radiology (p.20)	1
		C1 Medical Experiment Course (p.21)	1
		C2 Medical and Life Science Seminar (p.22) (Medical and Life Science Seminar and Learning from Experienced Doctors Seminar)	1

2) Requirements

Compulsory subject	25 credits	
<u>Elective subject</u>	<u>5 credits</u>	<u>or more</u>
Total	30 credits	or more

1) Note: "A6 Exercises in Medical Sciences" and "A7 Study in Medical Science", described on page 2, are comprised of Journal club, learning of experimental planning and technique, practical experiments at the department students belong to, and it is necessary to complete master's thesis and the public presentation (the oral examination).

2) Note: It is possible to take the courses of "Graduate General Education Courses." You can include 2 credits as upper limit in the completion requirement (elective) "Graduate General Education Courses" please look at the syllabus on Moodle (e-Learning System) system.

Fill out the form of the next page, "3. Registration Application", and submit it to the Student Affairs Section by April 11 (Mon). Students should also input the subjects to SOSEKI (Kumamoto University School Affairs Information System) by April 11 (Mon).

3. Registration Application (Master's course) Registration Application

<To be submitted to Student Affairs Section by April 11 (Mon)>

Please Circle to pick out the number equal to or greater than the specified, the courses you wish to take from among the electives below.

Please refer to the syllabus for the courses contents of each subject. Note that the change of elective, it is assumed that (Friday) April 15, it is not permitted thereafter. The major field name, by the field to education related to medical science and medical science exercises exercise, you found until Friday, May 6 will change, but it is not recognized after that. In after having consulted enough to supervisors always, please be determined.

Dean, The Graduate School of Medical Sciences

Supervisor

stamp

Year entered :

Name :

Student number :

E-mail address :

Department :

select 5 subjects or more subjects from 10 subjects following.

A1 Morphological Human Physiology

A2 Functional Human Physiology

A3 General Social Medicine

A4 General Clinical Medicine

A5 Bioethics

A6 Exercises in Medical Sciences

A7 Study in Medical Science

B1 Clinical Pathology

B2 Infection and Immunology

B3 Metabolic Informatics

B4 Neuroscience

B5 Heredity Reproduction Medicine

B6 Medical Informatics

B7 Introduction for Laboratory Animal Experiments

B8 Basic Radiology

C1 Medical Experiment Course

C2 Medical and Life Science Seminar

(Medical and Life Science Seminar and

Learning from Experienced Doctors Seminar)

4. Lecture course timetable for Master's course (2016)

	Week												
		1	2	3	4	5	6	7	8	9	10	11	
		4/4	4/11	4/18	4/25	5/2	5/9	5/16	5/23	5/30	6/6	6/13	
Priod	4/8	4/15	4/22	4/29	5/6	5/13	5/20	5/27	6/3	6/10	6/17		
Mon.	1	Entrance Ceremony	C1 Medical Experiment Course	A1 Morphological Human Physiology		A3 General Social Medicine		B5 Heredity Reproduction Medicine		B8 Basic Radiology			
	2			A2 Functional Human Physiology		A3 General Social Medicine		B2 Infection and Immunology					
	3			A1 Morphological Human Physiology		A4 General Clinical Medicine		B3 Metabolic Informatics		B6 Medical Informatics			
	4			A2 Functional Human Physiology		A4 General Clinical Medicine		B4 Neuroscience		B1 Clinical Pathology			
Tue.	1	C1 Medical Experiment Course		*Holiday	A1 Morphological Human Physiology		A3 General Social Medicine		B5 Heredity Reproduction Medicine		B8 Basic Radiology		
	2				A2 Functional Human Physiology		A3		B2 Infection and Immunology				
	3				A1 Morphological Human Physiology		A4 General Clinical Medicine		B3 Metabolic Informatics		B6 Medical Informatics		
	4				A2 Functional Human Physiology		A4 General Clinical Medicine		B4 Neuroscience		B1 Clinical Pathology		
Wed.	1		C1 Medical Experiment Course	*Holiday									
	2				A2 Functional Human Physiology		A3		B2 Infection and Immunology				
	3				B8 Basic Radiology		B8 Basic Radiology						
	4				B8 Basic Radiology		B8 Basic Radiology						
Thu.	1	C1 Medical Experiment Course		*Holiday	A1 Morphological Human Physiology		A3		B5 Heredity Reproduction Medicine		B8 Basic Radiology		
	2				A5 Bioethics		A5 Bioethics						
	3				A1 Morphological Human Physiology		A4		B3 Metabolic Informatics		B6 Medical Informatics		
	4				A2		A3		A4		B4 Neuroscience		B1 Clinical Pathology
Fri.	1		C1 Medical Experiment Course	*Holiday	A1 Morphological Human Physiology		A3 General Social Medicine		B5 Heredity Reproduction Medicine		B8 Basic Radiology		
	2				A2 Functional Human Physiology		A3 General Social Medicine		B2 Infection and Immunology				
	3				A1 Morphological Human Physiology		A4 General Clinical Medicine		B3 Metabolic Informatics		B6 Medical Informatics		
	4				A2 Functional Human Physiology		A4 General Clinical Medicine		B4 Neuroscience		B1 Clinical Pathology		

"B7 Introduction for Laboratory Animal Experiments" : Lecture will be given in the 4th July and the 5th July.

"B8 Basic Radiology" consists of lectures (4th week) and the RI practice (6th week).

The students, who complete this B8 subject, will be allowed to perform the RI experiments without additional training.

※Lecture Room: Lectures offered by several instructors (omnibus classes) will be given in the Lecture Room 2 on the 3rd floor of the Medical Education & Library Building.

1st priod 8:45~10:15

2nd priod 10:30~12:00

3rd priod 13:15~14:45

4th priod 15:00~16:30

Other seminars are irregularly opened from 17:30.

A1~A5: Compulsory subjects

B1~B8: Elective subjects

5. Screening criterion of a Master's thesis and assessment criterion for the final examination

For an applicant who has obtained designated school credits and has submitted a Master's thesis, screening and final examination will be given.

Screening criterion of a Master's thesis

- 1) The thesis should sufficiently dissert the research background, objectives of the research, experimental methodology, result of experiments and its interpretation, discussion including bibliographic consideration, should also be included.
- 2) The Master's thesis should be prepared in accordance with the required documentation methodology. As for the details, please refer the Website for the Graduate School of Medical Sciences, which is listed below as a link.
The Website for the Graduate School of Medical Science
(<http://www.medphas.kumamoto-u.ac.jp/medgrad/keijiban/gakuitansyuku.html>)

Period of Submission

Beginning ~ middle of December

Public Presentation(Oral examination)

- 1) Period End of January~ Beginning of February
- 2) Presentation 20 minutes, Discussion 10 minutes

How to prepare the Master's thesis

- 1) The thesis should be written in Japanese or English.
- 2) The Japanese title should accompany with the translated title in English, and vice versa.
- 3) A table of contents should be printed according to the order below. Figures and tables should be appropriately inserted.
 - ① Summary (prepare in one page)
 - ② List of Abbreviations
 - ③ Background and Objective of Study
 - ④ Method
 - ⑤ Results
 - ⑥ Discussion (including bibliography)
 - ⑦ Conclusion
 - ⑧ Acknowledgments
 - ⑨ References
 - ⑩ List of conference presentation

Assessment criterion for the final examination

The final exam is an oral examination (public presentation) and an assessment is made by the following criterion:

- 1) The examinee fully comprehends the content of his/her research and is able to explain it in detail.
- 2) The examinee is able to logically analyze the issues raised in his/her research.
- 3) The examinee has specialized knowledge in the field of his/her research.
- 4) The examinee has basic knowledge about fields related to his/her research.

Compulsory subjects

(9 credits)

A1~A5

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10010)	1, 2	2	others
Course Title(Theme)			Instructor(s)		
Morphological Human Physiology(Morphological Human Physiology)			Wakayama Tomohiko, SHIMAMURA Kenji, Era Takumi, Fukuda Takaichi, IMAMURA Takahisa, OGAWA Minetaro, Ooba Takashi, Itou Takaaki, Fujihara Yukio		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	Didactic manner, utilizing Power point, OHP and others.				
Course Goals	Understanding normal structure of human body by anatomy, histology and embryology and mechanism of disease by pathology.				
Course Achievement Targets	Understanding normal structure of human body by anatomy, histology and embryology and mechanism of disease by pathology.				
Outline	Explaining systematically normal structure of human body with gross anatomic and microscopic level, and ontogenic perspectives. Explaining the mechanism of diseases classified systematically.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	04/15	1st period Fukuda Takaichi	Anatomy 1-----		
2	04/15	3rd period Wakayama Tomohiko	General histology----		
3	04/18	1st period Fukuda Takaichi	Anatomy 2-----		
4	04/18	3rd period Wakayama Tomohiko	Particular histology 1		
5	04/19	1st period Fukuda Takaichi	Anatomy 3-----		
6	04/19	3rd period Wakayama Tomohiko	Particular histology 2		
7	04/21	1st period Fukuda Takaichi	Anatomy 4-----		
8	04/21	3rd period Wakayama Tomohiko	Particular histology 3		
9	04/22	1st period Imamura Takahisa	Inflammation-----		
10	04/22	3rd period Imamura Takahisa	Congenital disorder--		
11	04/25	1st period Itou Takaaki	Tumor-----		
12	04/25	3rd period Era Takumi-	Early embryonic development. Formation of endoderm.		
13	04/26	1st period Ogawa Minetaro	Specification of mesoderm cell lines		
14	04/26	3rd period Fujihara Yukio	Metabolic disorder--		
15	04/28	1st period Ooba Takashi	Development and maturation of germ cells. Maturation of ovum. Fertilization		
16	04/28	3rd period Shimamura Kenji	Formation and regionalization of ectoderm		
Textbooks/Materials					
Reading List					
Enrollment Prerequisites					
Assessment Methods and Criteria	Assessment will be decided based on attendance including report on each lecture and class tests on each lecture. Assessing them comprehensively.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10020)	1, 2	2	others
Course Title(theme)			Instructor(s)		
Functional Human Physiology()			TOMIZAWA Kazuhito, YAMAGATA Kazuya, SOU Bunketsu, OSHIUMI Hiroyuki, NOMIYAMA Hisayuki, OGURA Teru, OOTA Kunimasa, SENJU Satoru		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	Face-to-face class.				
Course Goals	The goal of this course is to understand and discuss how the human body's molecules, cells, tissues, and organs function in light of physiology and cell biology.				
Course Achievement Targets	<p>1.The classes dealing with cell biology illustrate the structure of the cell membrane; transport and signal transduction across the membrane; protein transport, modification, arrangement, degradation, as well as the cell organelles involved in these functions; cytoskeletons; and the molecular motors that control cell type and motility.</p> <p>2.The classes that deal with physiology illuminate neurological functions (e.g. senses, motion, and memory) as well as cellular and molecular mechanisms that maintain the homeostasis of a living organism.</p> <p>3.Classes dealing with biochemistry illustrate metabolic pathways in the human body and their relation to pathological conditions.</p> <p>4.Classes of immunology cover the molecules, cells, tissues, and organs that comprise the immune system, and instruct the molecular mechanism by which the immune system recognizes and removes various infectious organisms.</p>				
Outline	This course provides students with opportunities to understand and discuss how the human body's molecules, cells, tissues, and organs function in light of physiology and cell biology. Cell biology helps students understand how cells, the basic unit of the human body, work. Physiology, on the other hand, helps students understand the mechanisms behind the human body's physiological functions.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	04/13	2nd period, TOMIZAWA Kazuhito	Mechanism of homeostasis in living organisms		
2	04/15	2nd period, SONG Wen-Jie	Vision and visual plasticity		
3	04/15	4th period, SONG Wen-Jie	Neural mechanism for motion control		
4	04/18	2nd period, OHTA Kunimasa	Mechanism for neural network formation		
5	04/18	4th period, OHTA Kunimasa	Cellular signal transduction		
6	04/19	2nd period, OGURA Teru	Intracellular protein dynamics		
7	04/19	4th period, OGURA Teru	Cytoskeletons and molecular motors		
8	04/20	2th period, TOMIZAWA Kazuhito	Learning and emotional memory		
9	04/21	4th period, NOMIYAMA Hisayuki	Structures and functions of cytokines (2)		
10	04/22	2nd period, OSHIUMI Hiroyuki	Innate immunity		
11	04/22	4th period, OSHIUMI Hiroyuki	DNA recombination in B cells		
12	04/25	2nd period, YAMAGATA Kazuya	Glucose metabolism and disorders		
13	04/25	4th period, YAMAGATA Kazuya	Lipid metabolism and disorders		
14	04/26	2nd period, SENJU Satoru	Self defense system mediated by T cells		
15	04/26	4th period, SENJU Satoru	T cell subsets and their diverse functions		
16	04/27	2th period, NOMIYAMA Hisayuki	Structures and functions of cytokines (1)		
Textbooks/Materials	No textbooks have been specified but handouts summarizing the lecture will be distributed.				
Reading List	<p>1.Sylvia S. Mader, Human Biology, translated by Takeo Sakai and Takao Okada, Igaku-Shoin, October 2005</p> <p>2.Bruce Alberts, Alexander Johnson, Peter Walter, Julian Lewis, Molecular Biology of the Cell, January 2008</p>				
Enrollment Prerequisites	Should have basic knowledge for biology.				
Assessment Methods and Criteria	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 of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10030)	1, 2	2	others
Course Title(Theme)			Instructor(s)		
General Social Medicine(A3 General Social Medicine)			Nishitani Yoko, Katoh Takahiko, Soejima Hirofumi, KITANO Takao, Wei Changnian, MINAMOTO Keiko, Yonemitsu Kousei		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals	Environmental and socio medical sciences are vital spheres of medicine. Students will study health care and legal measures designed to protect an individual's basic human rights and ensure public safety.				
Course Achievement Targets	Students will study health care and legal measures designed to protect an individual's basic human rights and ensure public safety.				
Outline	This course consists of some socio medical fields; health medicine, public health, and forensic medicine. Classes on health medicine provide the clinical nutrition. Classes on public health include practical lectures on environmental dynamics; the relationship between the environment and people; environmental indicators and assessment; establishing and maintaining environmental standards; the concept of public health; nurturing a healthy society through preventive medicine; and epidemiology, the discipline that underpins public health. Lectures on forensic medicine lay the groundwork for everything from identifying and classifying causes of death to medical, legal, and social aspects of death.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	04/28	4th period Takahiko Katoh	Public Health: Studies General Theory and Concepts		
2	05/02	1st period Hirofumi Soejima	General Medicine: Coronary Risk Factor		
3	05/02	2nd period Hirofumi Soejima	General Medicine: Ischemic Heart Disease		
4	05/06	1st period Yoko Nishitani	Forensic Medicine: Definition of Forensic Medicine		
5	05/06	2nd period Yoko Nishitani	Forensic Medicine: Forensic Medicine and Science		
6	05/09	1st period Keiko Minamoto	Environmental Medicine: Occupational skin disease (1)		
7	05/09	2nd period Takao Kitano	Public Health: International Public Health		
8	05/10	1st period Takao Kitano	Public Health: Life Style and Health Problem (1)		
9	05/10	2nd period Takao Kitano	Public Health: Life Style and Health Problem (2)		
10	05/11	2nd period Kousei Yonemitsu	Forensic Medicine: Techniques for Investigating Unnatural Deaths		
11	05/12	1st period Yoko Nishitani	Forensic Medicine: Social Aspects of Death (1)		
12	05/13	1st period Changnian Wei	Environmental Medicine: Health, Lifestyles, and Improving Public Health		
13	05/13	2nd period Changnian Wei	Environmental Medicine: Assessing Lifestyles		
14	05/16	1st period Keiko Minamoto	Environmental Medicine: Occupationa skin disease (2)		
15	05/16	2nd period Yoko Nishitani	Forensic Medicine: Social Aspects of Death (2)		
16	05/17	1st period Takahiko Katoh	Public Health: Epidemiology		
Textbooks/Materials	Handouts summarizing lecture topics.				
Reading List	<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 Prerequisites					
Assessment Methods and Criteria	Students will be graded on the basis of mini-reports submitted after each class. Students are required that the average score of mini-reports will be 60% or over.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty/Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10040)	1, 2	2	others
Course Title(Theme)			Instructor(s)		
General Clinical Medicine()			MUKOYAMA Masashi, BABA Hideo, MATSUI Hiroataka, ANDO Yukio, KOHROGI Hirotsugu, MIZUTA Hiroshi, SASAKI Yutaka, FUKUI Toshihiro, TANIHARA Hidenobu, KATABUCHI Hidetaka		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	To provide lectures with bidirectional communications using slides and handouts.				
Course Goals	To learn about the art and science in various fields of clinical medicine and to get knowledges about recent topics on biomedical researches.				
Course/Achievement Targets	To learn about the art and science in various fields of clinical medicine and to get knowledges about recent topics on biomedical researches.				
Outline	To provide lectures in the field of internal medicine (pulmonology, cardiology, nephrology, hepatology, hematology, neurology), surgery, pediatrics, obstetrics/gynecology, orthopedics, ophthalmology, and diagnostic medicine.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	05/02	3rd period by Masashi Mukoyama (nephrology)	Recent topics on nephrology: Chronic kidney disease and life style-related diseases		
2	05/02	4th period by Yoichi Yamashita (surgery)	Surgical treatment for gastroenterological cancer		
3	05/06	3rd period by Hiroataka Matsui (diagnostic medicine)	Principles and applications of comprehensive gene testing		
4	05/06	4th period by Shunya Nakane (neurology)	The relationship between the nervous system and immune system		
5	05/09	3rd period by Hirotsugu Kohrogi (pulmonology)	Recent advancement in respiratory medicine		
6	05/09	4th period by Seiji Hokimoto (cardiology)	Pathophysiology and treatment of acute myocardial infarction: Involvement of coronary spasm viewed from genetic and environmental factors		
7	05/10	3rd period by Kimitoshi Nakamura (pediatrics)	Children's health and screening test for diseases		
8	05/10	4th period by Hiroshi Mizuta (orthopedics)	Reconstruction of bone and joint		
9	05/12	3rd period by Yutaka Sasaki (hepatology)	Recent advancement in hepatology and gastroenterology		
10	05/12	4th period by Masataka Adachi (nephrology)	Sodium and potassium handling by the kidney		
11	05/13	3rd period by Yutaka Okuno (hematology)	Hematology and oncology		
12	05/13	4th period by Toshihiro Fukui (cardiovascular surgery)	Recent advancement in cardiovascular surgery		
13	05/16	3rd period by Satoru Shinriki (diagnostic medicine)	Pathobiology and diagnostics of cancer		
14	05/16	4th period by Mikiko Fukushima (ophthalmology)	Progress of diagnosis and treatment in ophthalmology		
15	05/17	3rd period by Masanori Iwai (pediatrics)	Recent neonatal intensive care: New therapeutic strategies for neonatal hypoxic ischemic brain injury		
16	05/17	4th period by Hidetaka Katabuchi (obstetrics/gynecology)	Etiology of Female Genital Cancer		
Textbooks/Materials					
Reading List					
Enrollment Prerequisites					
Assessment Methods and Criteria	To assess with the attitude during lectures together with reports presented after lectures.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10050)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Bioethics()			Kadooka Yasuhiro		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint presentation will be used in the lectures on ethics of advanced medicine and clinical ethics, and active participation in the discussion is encouraged. E-learning concerning research ethics (CITI e-learning system) will also be used.				
Course Goals	To introduce students to a wide range of ethical and historical problems associated with medical treatment and science. To provide students with opportunities that will help them understand the basic issues inherent in the practice of medicine as well as the conduct of research and enable them to make logical arguments in exploring these problems. To give students an in-depth knowledge of relevant ethical guidelines and help them to understand their basis. To help students to forge a solid intellectual foundation in biomedical ethics				
Course Achievement Targets	Students can recognize ethical and social implication of their graduate research. Students conduct sound research by practicing research ethics.				
Outline	This course explores the history, case examples, problems, principles, concepts, and relevant ideas regarding bioethics and medical ethics, so students will gain the ethical footing they will need as medical researchers and healthcare professionals. The class is occasionally divided into small groups for discussion and students will be required to give presentations. Critically reading relevant articles from major journals, students examine problems associated with medical treatment and science. The topics this course covers are subject to change.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	04/21	2nd period Introduction of biomedical ethics	Lecture and discussion on the theme		
2	04/28	2nd period Ethics of Advanced Medicine 1	Lecture and discussion on the theme		
3	05/12	2nd period Ethics of Advanced Medicine 2, Clinical Ethics 1	Lecture and discussion on the theme		
4	05/19	2nd period Clinical Ethics 2	Lecture and discussion on the theme		
Textbooks/Materials	Handouts will be provided at every class period.				
Reading List	V. Ravitsky V, Fiester A, Caplan AL (eds). The Penn Center Guide to Bioethics. NY, Springer Publishing Company, 2009. Singer PA, Viens AM (eds). The Cambridge Textbook of Bioethics. UK, Cambridge University Press, 2008. The Hastings Center. Bioethics Briefing Book. (http://www.thehastingscenter.org/Publications/BriefingBook/Default.aspx) Bonnie Steinbock (Editor) The Oxford Handbook of Bioethics, Oxford University Press, Oxford, 2007. Kuhse H, Singer P (eds). A Companion to Bioethics 2nd edition. London, Oxford University Press, 2009. Beauchamp TL, Childress JF. Principles of Biomedical Ethics 4th edition. NY, Oxford University Press, 1994. Lo B. Resolving ethical dilemmas A Guide for Clinician. Lippincott Williams and Wilkins, Baltimore, 2000. British Medical Association. Medical Ethics Today 2nd edition. London, BMJ, 2004. Rachels J: The Element of Moral Philosophy 2nd ed., McGraw-Hill, 1993. Stephan G. Post (Ed). Encyclopedia of Bioethics, 3rd edition, Volume 1, Macmillan Reference USA, Thomson/Gale, 2004. Mitchan C (Editor in Chief). Encyclopedia of Science, Technology, and Ethics. Volume 1, Macmillan Reference USA, Thomson/Gale, 2005.				
Enrollment Prerequisites					
Assessment Methods and Criteria	Student evaluations will be weighted on attendance, understanding and presentation at discussion and classes, completion of appointed CITI e-learning classes and a term paper.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Elective subjects

(5 credits)

B1 ~ B8

C1 • C2

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10080)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Clinical Pathology()			MATSUSHITA Shuzo, SASAKI Yutaka, NAKAMURA Kimitoshi, Kourogi Hirotsugu, ARAKI Eiichi, Kaikita Kouichi, NAKAYAMA Hideki, Yamashita Satoshi		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint and/or an overhead projector will be used in lectures where active participation in discussion is encouraged.				
Course Goals	In Pathology and Pathological Conditions students learned about how diseases are classified and how they develop. Clinical Pathology picks up where that course left off with a focus on major diseases. This course provides students with opportunities to learn about specific clinical and pathological conditions along with their underlying molecular mechanisms so that they can expand their understanding of the nature of various diseases. Students will also learn about the particular characteristics of diseases that manifest themselves in the nervous system, motor system, and tissues as well as the mechanisms behind systemic conditions, such as immune deficiency.				
Course Achievement Targets	Students learn about specific clinical and pathological conditions along with their underlying molecular mechanisms so that they can expand their understanding of the nature of various diseases.				
Outline	Experts in eight representative fields such as congenital diseases, metabolic disorders, immunodeficiency as systemic diseases and circulatory disturbance, inflammation, tumor and degenerative diseases of specific organ systems will give a series of lectures with LCD projector. See the detailed schedule and topics below. The lectures address pathogenesis of each representative disease and underlining molecular mechanisms.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	06/02	4th period Hirotsugu Kohrogi	Pneumonia and Bronchial Asthma		
2	06/03	4th period Koichi Kaikita	Pathology and anti-thrombotic therapy in acute coronary syndrome		
3	06/06	4th period Eiichi Araki	Diabetes/Metabolic disorder caused by impaired insulin action and its complications		
4	06/07	4th period Yutaka Sasaki	Liver cirrhosis and cancer: pathogenesis and treatment		
5	06/09	4th period Satoshi Yamashita	Diagnosis and Treatment of Intractable Neurological Diseases		
6	06/10	4th period Kimitoshi Nakamura	Liver diseases in inborn errors of metabolism		
7	06/13	4th period Hideki Nakayama	The mechanism of periodontal disease will be explained pathologically, and students will learn the associations between periodontal disease and various systemic diseases.		
8	06/14	4th period Shuzo Matsushita	Pathogenesis of HIV-induced immunodeficiency		
Textbooks/Materials					
Reading List					
Enrollment Prerequisites					
Assessment Methods and Criteria	Evaluation of this lecture series will be weighted by scores in test or reports focusing on the following points. 1) Whether the student correctly understands the terms, background and the current state in the selected area. 2) Whether the student correctly grasps the subject matter discussed in class. 3) Whether the student offers his/her own view. The instructors evaluate the scores of test or and reports on a scale of 1 to 10 (10 x 8 would yield a maximum score of 80 points). The total score at the end of the semester is multiplied by 5/4 to calculate the final grade.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10090)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Infection and Immunology(Infection and Immunology)			SAWA Tomohiro, OKADA Seiji, Ariumi Yasuo, Sato Yorifumi, MATSUSHITA Shuzo, Maeda Yousuke, UENO Takamasa		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint and/or an overhead projector will be used in lectures where active participation in discussion is encouraged.				
Course Goals	Updated knowledge of various pathogenic microorganisms such as bacteria and viruses that are associated with infectious diseases in human-being is addressed to learn the route of transmission, mechanism of the diseases, prevention measures and treatment strategies. The lecture series especially focus on protective immunity to viral diseases including HIV-1.				
Course Achievement Targets	To understand molecular bases for infections diseases, that may help development of effective prevention, treatment, and diagnosis of the diseases.				
Outline	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					
No.	Date	Theme of Course	Brief Outline of Course		
1	05/17	(Pathogenic microbial) 2nd period Tomohiro Sawa	Introduction to bacterial infections/diseases.		
2	05/18	2nd period Yasuo Ariumi	Viral infection and innate immunity.		
3	05/20	(Infection and Immunity) 2nd period Takamasa Ueno	Cellular immune responses to viral infections.		
4	05/23	2nd period Yorifumi Sato	Pathogenesis of virus infection and diseases.		
5	05/24	2nd period Tomohiro Sawa	Pathogenic mechanisms of bacterial infections.		
6	05/25	2nd period Shuzo Matsushita	Neutralizing antibodies for vaccine development.		
7	05/27	2nd period Yosuke Maeda	Basic and practical medical virology.		
8	05/30	2nd period Seiji Okada	Differentiation of hematopoietic stem cells to immunocompetent cell.		
Textbooks/Materials	No textbooks are specified for this lecture series. Some instructors may have handouts for the lecture.				
Reading List	<ul style="list-style-type: none"> • "Fundamentals of Microbiology" by I. E. Alamo. The Benjamin / Cummings Publishing Company, Inc. • McMichael AJ, Haynes BF: Lessons learned from HIV-1 vaccine trials: new priorities and directions. Nat Immunol 2012, 13(5):423-427. • Mouquet H, Nussenzweig MC: HIV: Roadmaps to a vaccine. Nature 2013, 496(7446):441-442. 				
Enrollment Prerequisites					
Assessment Methods and Criteria	<p>Evaluation will be weighted by active participation, brief evaluating test and/or a report for the theme announced after the lecture. Instructors look at the following when grading the tests and reports:</p> <ol style="list-style-type: none"> 1) Whether the student correctly understands the background of the selected area under study. 2) Whether the student correctly grasps the subject matter discussed in class. 3) Whether the student offers his/her own view. <p>The final score is calculated from the mean value of upper 6 score in the evaluations of tests and reports by 8 lectures.</p>				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10100)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Metabolic Informatics()			Yuichi Oike, Kazuya Iwamoto, Norie Araki, Atsushi Irie, Fan-Yan Wei		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint and/or OHP will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals	Biological environment in vivo is controlled by various signals. Recent remarkable improvement of studies such as genomics, proteomics, metabolomics made it possible to analyze changes of in vivo environment systematically as well as comprehensively. In addition, analysis of the mechanism underlying disease onset, identification of therapeutic target and development of biomarker are also becoming possible by applying these methods. In the class, academic backgrounds of genomics, proteomics, metabolomics, principles of analytic technology and applications to disorder analysis are going to be lectured. Attending the lectures will help students apply the theories to their research fields.				
Course Achievement Targets	In the class, academic backgrounds of genomics, epigenomics, proteomics, metabolomics, principles of analytic technology and applications to disorder analysis are going to be lectured. Attending the lectures will help students apply the theories to their research fields.				
Outline	In relation to genomics, epigenomics, proteomics and metabolomics, outlines of the academic backgrounds, the histories, the recent progresses will be given. Also, practical usage cases for development of therapeutic methods and drug discoveries including analysis of the mechanisms underlying disease onset, identification of therapeutic target will be explicated, providing as an example of those, analytic methods of oxidative stress in pathologic conditions using biomarker.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	05/19	3rd period Norie Araki	Academic Background of Genomics, Proteomics and Metabolomics		
2	05/20	3rd period Atsushi Irie	Basic Principle of Genomics, Proteomics and Metabolomics (1)		
3	05/23	3rd period Atsushi Irie	Basic Principle of Genomics, Proteomics and Metabolomics (2)		
4	05/24	3rd period Norie Araki	Genomics, Proteomics and Metabolomics and frontier of disease research		
5	05/26	3rd period Kazuya Iwamoto	Introduction to epigenetics (1)		
6	05/27	3rd period Kazuya Iwamoto	Introduction to epigenetics (2)		
7	05/30	3rd period Fan-Yan Wei	RNA epigenetics & diseases		
8	05/31	3rd period Yuichi Oike	Recent topics of metabolic study		
Textbooks/Materials	Handouts for each practice will be provided.				
Reading List					
Enrollment Prerequisites					
Assessment Methods and Criteria	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 of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10110)	1, 2	1	others
Course title(theme)			Instructor(s)		
Neuroscience()			SONG Wen-Jie, TAMAMAKI Nobuaki, SHIMAMURA Kenji, FUKUHARA Ryuji, INDOU Yasuhiro, OOTA Kunimasa, YANO Shigetoshi, UEDA Mitsuharu		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	Lectures and multimedia presentations.				
Course Goals	The goal of this lecture is to assist students to learn the following from molecular to organism level, from neurodevelopmental, neuroanatomical, neurophysiological, and neurological perspectives: differentiation and development of the nervous system, structure and function of the neuronal circuits, etiology, symptom, and treatment of neurological disorders.				
Course Achievement Targets	Classes on the development of the nervous system cover topics including regulation of neural stem cells, induction and regionalization of the central nervous system, and development of the cerebral cortex. Classes on neuroanatomy and neurophysiology focus on the structure and function of the cerebral cortex, with a stress on the auditory system. Classes on clinical neurological diseases cover the etiology, symptom, and treatment of disorders such as congenital insensitivity to pain with anhidrosis, Parkinson's disease, Alzheimer's disease, intractable neurological diseases including cerebral amyloid angiopathy, and other neurological disorders that require neurosurgery.				
Outline	Neuroscience is about our brain and is a currently rapidly growing discipline. Not only our sensory and motor functions but higher functions such as learning and memory, cognitive function, emotion, and mental function are all attributable to the function of our brain. The lecture is an introduction to the nervous system.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	05/19	4th period Kenji Shimamura; Neural development	Induction and regionalization of the central nervous system		
2	05/20	4th period Kunimasa Ohta; Neural development	Regulation of neural stem cells		
3	05/23	4th period Nobuaki Tamamaki; Neural development and neural anatomy	Structure and development of the cerebral cortex		
4	05/24	4th period Yasuhiro Indo; Pain and sweating	Neuroscience of pain and sweating		
5	05/26	4th period Wen-Jie Song; Hearing	Auditory neuroscience		
6	05/27	4th period Shigetoshi Yano; Neurosurgery	Clinical neuroscience in Neurosurgery		
7	05/30	4th period Ryuji Fukuhara; Psychiatry	Neuroscience from a mental disorder perspective		
8	05/31	4th period Mitsuharu Ueda; Intractable diseases	Intractable neurological diseases		
Textbooks/Materials	No textbook is specified but handouts summarizing the lecture will be distributed.				
Reading List	Eric Kandel, James Schwartz, Thomas Jessell, Steven Siegelbaum, A.J. Hudspeth, Principles of Neural Science, Fifth Edition, 2012. Mark F. Bear, Barry W. Connors, Michael A. Paradiso, Neuroscience: Exploring the Brain, 2007.				
Enrollment Prerequisites					
Assessment Methods and Criteria	Grading will be based on active class participation, paper summaries, and reports related to the topics dealt with in each class.				
Language of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10120)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Heredity Reproduction Medicine()			NISHINAKAMURA Ryuichi, INOMATA Yukihiro, Nakamura Kimitoshi, TATEISHI Satoshi, TERADA Kazutoyo, Niwa Hitoshi, NAKAO Mitsuyoshi, Hino Shinjiro, Fukui Toshihiro		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	PowerPoint will be used in the lectures, and active participation in the discussion is encouraged.				
Course Goals	Heredity Reproduction Medicine aims at obtaining basic knowledge on molecular biology, developmental biology and genetics for the understanding of regenerative medicine, genetic medicine and transplant medicine. In this course, you will obtain essential knowledge on normal embryonic development and organ morphogenesis, and the origin and mechanism of diseases, their treatments. Furthermore, this course will up-to-date the knowledge on regenerative medicine, genetic defects, transplantations, kidney & liver transplantations, from basic and clinical views.				
Course Achievement Targets	obtaining basic knowledge on molecular biology, developmental biology and genetics for the understanding of regenerative medicine, genetic medicine and transplant medicine.				
Outline	<ul style="list-style-type: none"> • Embryonic development and embryonic stem cells and tissue stem cells • Kidney development and regenerative medicine • Tumor suppression via regulation of mitosis and DNA repair • Hereditary mitochondrial disease • Diagnosis and gene therapy • Epigenetic medicine • Tissue and organ grafts • Cardiac disease and regenerative medicine, 				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	05/19	1st period Ryuichi Nishinakamura	Developmental and regenerative medicine		
2	05/20	1st period Satoshi Tateishi	Tumor suppression via regulation of cell cycle and DNA repair		
3	05/23	1st period Hitoshi Niwa	Embryonic development and stem cells		
4	05/24	1st period Yukihiro Inomata	Organ transplantation		
5	05/26	1st period Kimitoshi Nakamura	DNA diagnosis and therapy for genetic diseases		
6	05/27	1st period Mitsuyoshi Nakao, Shinjiro Hino	Epigenetics in health and diseases		
7	05/30	1st period Kazutoyo Terada	Mitochondrial disease		
8	05/31	1st period Toshitaka Fukui	Cardiac disease and regenerative medicine		
Textbooks/Materials	Textbooks are not specified, and handouts will be distributed.				
Reading List					
Enrollment Prerequisites					
Assessment Methods and Criteria	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 of Instruction	Instruction in Japanese + English Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10130)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Medical Informatics(B6 Medical Informatics)			USUKU Koichiro, Haga Yoshio, takahashi takeshi, Hirose Jiyun		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture and Seminar				
Teaching Method	Lectures using Power point and OHP etc.				
Course Goals	Though medical care is a work to apply a medical advance to the medical practice, appropriate handling of informations occurring in the healthcare setting is essential to accomplish its purpose. The aim of this lecture is to acquire ability to handle information appropriately in the field of the healthcare setting through learning types of information in this field, way to handle information including personal information protection, and method to take useful information from patients and literature.				
Course Achievement Targets	You may be able to learn how to handle information safely in the field of medical informatics and be familiar with clinical researches after accomplishing this course.				
Outline	In the medical information science, lectures will focus on the way how to handle medical records based on the viewpoint of the personal information protection, information literacy and ethic that health care workers should wear on exchanging medical records electronically, problems arising on exchanging medical information, points essential to focus on recording healthcare information using Information and Communication Technology(ICT), and advantage and disadvantage of electronic health record system. In the international medical cooperation studies, lectures will focus on topics of clinical researches including design, study plan making, ethical problems taking into account, analytical method of data, and critical examination method of the English article and procedure of the EBM using computers, and also focus on emergency care information and disaster medical care information.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	06/02	3rd period Yoshio Haga	Design of Clinical Researches, EBM		
2	06/03	3rd period Koichiro Usuku	Handling medical records from the privacy protection view		
3	06/06	3rd period Jun Hirose	Clinical Pass : its design		
4	06/07	3rd period Takeshi Takahashi	Emergency Medical Information		
5	06/09	3rd period Yoshio Haga	Analytical method of clinical study, critical reading of English articles		
6	06/10	3rd period Koichiro Usuku	Managing electronic medical records and Hospital information system		
7	06/13	3rd period Jun Hirose	Regional Medical Cooperation		
8	06/14	3rd period Takeshi Takahashi	Disaster medical care information		
Textbooks/Materials	Handouts will offer thorough e-Learning system.				
Reading List	Informations will offer in each lecture.				
Enrollment Prerequisites	No Prerequisite required.				
Assessment Methods and Criteria	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 of Instruction	When the choice is other than above, specify in Teaching Method section				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
	2016spring	Graduate School of Medical Sciences(10140)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Introduction for Laboratory Animal Experiments(Advanced molecular developmental studies on model animals)			NAKAGATA Naomi, ARAKI Kimi, ARAKI Masatake, KOJIMA Akihiro, TAKEO toru, TORIGOE daisuke		
Goals with their ratio					
Under construction100%					
Type of Class	Lecture				
Teaching Method	Mainly PowerPoint will be used in lectures and active participation in discussions is encouraged.				
Course Goals	To provide students with opportunities to gain an understanding of laboratory animals (especially mice).				
Course Achievement Targets	To understand the basics for experimental model animals, manipulation of mouse embryos, genetically engineered mice and experiments using animals.				
Outline	1) Reproductive engineering technology in mice 2) Infectious diseases of laboratory animals 3) Small animal experiment using molecular imaging 4) Production of knock-out mice, transgenic mice and genome editing 5) Production of gene trap mice. 6) Principle of the RNA silencing technology				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	07/04	Reproductive engineering technology in mice I	Lecture about reproductive engineering technology in mice I		
2	07/04	Reproductive engineering technology in mice II	Lecture about reproductive engineering technology in mice II		
3	07/04	Infectious diseases of laboratory animals	Lecture about infectious diseases of laboratory animals		
4	07/04	Small animal experiment using molecular imaging	Lecture about small animal experiment using molecular imaging		
5	07/05	Production of transgenic mice	Lecture about production of transgenic mice		
6	07/05	Knock-out mice and genome editing	Lecture about knock-out mice and genome editing		
7	07/05	Production of gene trap mice	Lecture about production of gene trap mice		
8	07/05	Principle of the RNA silencing technology	Lecture, discussion and preparation of report about principle of the RNA silencing technology		
Textbooks/Materials	<ul style="list-style-type: none"> • Nagy, A., Gertsenstein, M., Vintersten, K. & Behringer, R. Manipulating the mouse embryo: a laboratory manual (3rd ed.). Cold Spring Harbor Laboratory Press, 2003. • Virginia E. Papalannou and Richard R. Behringer. Mouse Phenotypes: A Handbook of Mutation Analysis. Cold Spring Harbor Laboratory Press 2005. • Fox, J.G., Barthold, S.W., Davisson, M.T., Newcomer, C.E., Quimby, F.W. & Smith, A.L. • The mouse in biomedical research, vol.2 diseases (2nd ed.). Academic Press, 2007. 				
Reading List:					
Enrollment Prerequisites	Knowledge about molecular biology				
Assessment Methods and Criteria	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 of Instruction	Instruction in Japanese + Japanese Textbook				

Course Coding	Year and Semester	Faculty Offering Course	Eligible Student Year	Credits	Weekday and Period
RMM501279	2016spring	Graduate School of Medical Sciences(10150)	1, 2	1	others
Course Title(Theme)			Instructor(s)		
Basic Radiology()			OKADA Seiji, SHIMASAKI Tatsuya, KOJIMA Akihiro		
Goals with their ratio					
Under construction100%					
Type of Class	Practice and Training				
Teaching Method	Lecture and practical training				
Course Goals	To learn the basic knowledge, and handling and the application of radiation and radioisotope (RI) for medical sciences.				
Course Achievement Targets	(1) To receive the certificate of "education and training for radiation workers" to use radiation or radioisotopes safely in the master course research (2) To understand the usefulness and reasonableness of radiation or radioisotopes, and measure radiation dose or radioactivity effectively in the life science experiment (3) To understand basic protocols for typical radioisotopes and perform some basic experiments using real radioisotopes				
Outline	Radiation and radioisotopes are very useful tools in the study of science. Also they significantly contribute to our daily life, especially clinical medicine. Excessive exposure of radiation, however, causes the harmful effect on the human body. This lecture series focus on the application of radiation and radioisotope (RI) for life or medical science after training safe handling of radiation and radioisotope to prevent radiation hazards.				
Details for Individual Classes					
No.	Date	Theme of Course	Brief Outline of Course		
1	04/27	3rd period Akihiro Kojima	Basics of Radioisotope (1)		
2	04/27	4th period Akihiro Kojima	Basics of Radioisotope (2)		
3	05/11	3rd period Akihiro Kojima	Basics of Radioisotope (3)		
4	05/11	4th period Akihiro Kojima	Basics of Radioisotope (4)		
5	06/02	1st period Seiji Okada	Application of RI for Biomedical Research		
6	06/03	1st period Akihiro Kojima	Measurement of radioisotope		
7	06/06	1st period Tatsuya Shimasaki	Biological effects of irradiation		
8	06/07	1st period Tatsuya Shimasaki	Use of RI for biological research		
Textbooks/Materials					
Reading List	Basic Knowledge of Radiation and Radioisotopes (Scientific Basic, Safe Handling of Radioisotopes and Radiation Protection), Japan Radioisotope Association, 2005. 細胞工学別冊「R I の逆襲」アイソトープを活用した簡単・安全バイオ実験. 監修: 岡田誠治 秀潤社 (2007年12月) : In Japanese				
Enrollment Prerequisites					
Assessment Methods and Criteria	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 of Instruction	When the choice is other than above, specify in Teaching Method section				

Academic Year 2016 Graduate School's Medical Experiment Course

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

Date	AM		PM	
April 5 (Tue.)	8:45 ~ 10:15	Introduction to recombinant DNA technique (Molecular Genetics : Kazutoyo Terada)	13:15 ~ 14:45	Principle and application of polymerase chain reaction (Medical Biochemistry : Sato Yoshifumi)
	10:30 ~ 12:00	Gene Transfer Technique (Molecular Physiology : Wei fanyan)	15:00 ~ 16:30	Research Integrity (Bioethics : Yasuhiro Kadooka)
	8:45 ~ 10:15	Cell imaging and quantitative analysis (Medical Cell Biology : Noriko Saitoh)	13:15 ~ 14:45	Protein Purification (General Methods) (Molecular Cell Biology : Masatoshi Esaki)
April 6 (Wed.)	10:30 ~ 12:00	Basic science and clinical research for molecular imaging (Pathology and Experimental Medicine: Koki Hasegawa)	15:00 ~ 16:30	Protein for labile molecule handling -An example:Purification of a protease (Molecular Pathology : Takahisa Imamura)
	8:45 ~ 10:15	Methods in cell biology (Molecular Pharmacology : Kazuaki Umeda)	13:15 ~ 14:45	Analytical methods for intracellular signaling (Hematopoiesis : Shinya Suzu)
April 7 (Thu.)	10:30 ~ 12:00	Experiment study and safety control (Environmental Safety Center: Yoshihiro Yamaguchi)	15:00 ~ 16:30	Introduction to flowcytometry (Department of Immunology and Hematology, School of Health Sciences : Seiji Inui)
	8:45 ~ 10:15	Pharmacokinetics (Clinical Pharmaceutical Sciences : Hideyuki Saito)	13:15 ~ 14:45	Production of polyclonal and monoclonal antibodies (Germline Development : Akira Nakamura)
April 8 (Fri.)	10:30 ~ 12:00	Basic Methods in Immunology (Immunogenetics : Satoru Senju)	15:00 ~ 16:30	In situ hybridization (Developmental Neurobiology : Kunimasa Ota)
	8:45 ~ 10:15	Experimental animals and animal Experimentations I (Division of Microbiology and Genetics: Daisuke Tonigoe)	13:15 ~ 14:45	Reproductive Engineering Techniques (Reproductive Engineering: Naomi Nakagata)
April 11 (Mon.)	10:30 ~ 12:00	Experimental animals and animal Experimentations II (Division of Microbiology and Genetics: Daisuke Tonigoe)	15:00 ~ 16:30	Proteomics (Tumor Genetics and Biology : Norie Araki)
	8:45 ~ 10:15	Practice and Guidance for Biological Laboratory Safety (Medical Virology: Yosuke Maeda)	13:15 ~ 14:45	Guidance for Living Modified Organism (LMO) (Division of Bioinformatics : Masatake Araki)
April 12 (Tue.)	10:30 ~ 12:00	Immunohistochemistry (Cell Pathology : Yoshihiro Komohara)	15:00 ~ 16:30	Methods for Literature Search (Lecture Room: The 3 rd floor of General Medical Research Building) (Medical Information Science : Koichiro Usuka)

※The lectures will be given in Japanese.

Academic Year 2016, D1 Medical & Life Science Seminar

●Place: Lecture room 2,
Medical Education & Library Building 3F.

●Time & Date: From 17:30 (Usually on Wednesday)

No	Schedule	Talker	Title	Affiliation	Inviter
1.	April 22 nd (FRI) 17:00~	Ichiro KURANE	Dengue fever and dengue hemorrhagic fever: understanding of the pathogenesis and protective mechanisms	Director, National Institute of Infectious Diseases	AIDS Research I
2.	May 11 th (WED)	Akiko HAYASHI	Visualization of the morphology of spine and its application for innovative drug development	Professor, Institute of Molecular and Cellular Regulation, Gunma University	Molecular Physiology
3.	May 25 th (WED)	Masahiko NISHIYAMA	Cancer treatment and care: The path towards further progress	Professor, Gunma University Graduate School of Medicine, Department of Molecular Pharmacology & Oncology	Obstetrics & Gynecology
4.	June 1 st (WED)	Michisuke YUZAKI	Emerging roles of the C1q complement family: link between the brain and immune system	Professor, Department of Physiology, Keio University School of Medicine	AIDS Research III
5.	June 15 th (WED)	Tsukasa SEYA	Development of priming adjuvant for vaccine immunotherapy	Professor, Graduate School of Medicine, Hokkaido University	Immunology
6.	July 22 nd (FRI) 18:30~	Itoshi NIKAIDO	Single-cell transcriptome analysis for realization of effective regenerative medicine	Unit Leader, Bioinformatics Research Unit, RIKEN Advanced Center for Computing and Communication	IRCMS - I
7.	September 7 th (WED)	Nobuhiko YAMAMOTO	Activity-dependent neuronal circuit formation in the developing cortex	Professor, Osaka University, Graduate School of Frontier Biosciences	Sensory & Cognitive Physiology
8.	October	Takehiko OGAWA	<i>In vitro</i> spermatogenesis	Professor, Laboratory of Proteomics, Institute of Molecular Medicine and Life Science, Yokohama City University Association of Medical Science	Pathology & Experimental Medicine
9.	November 9 th (WED)	Keizo TOMONAGA	Bornavirus: a new direction of RNA virus research	Professor, Department of Viral Oncology, Institute for Virus Research, Kyoto University	Microbiology
10.	November	Teizo YOSHIMURA	The role of chemoattractants in inflammation and cancer	Associate Professor, Department of Pathology & Experimental Medicine, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University	Cell Pathology
11.	January 20 th (FRI)	Toshiya MURAI	Social cognition in neuropsychiatric disorders	Professor, Kyoto University, Graduate School of Medicine	Neuropsychiatry
12.	Preparing	Tetsuo NODA	Present and future perspective of cancer research.	Cancer Institute, Director	Gastroenterological Surgery
13.	Preparing	Kenshi HAYASHIDA	Basic knowledge of biostatistics for clinical research	The Chemo-Sero-Therapeutic Research Institute, Clinical Development Department, Development Coordination Division, Managing Specialist (Biostatistician)	

Note: The date, time or place of these lectures may change due to the inviter's and lecturer's schedules. 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 the seminar other than the above.

(<http://www.medphas.kumamoto-u.ac.jp/medgrad/keijiban/seminar.html>)

Academic Year 2016, D2 Learning from Experienced Doctors Seminar

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

No	Schedule	Talker	Title	Affiliation	Inviter
1.	May 18 th (WED)	Manabu YOSHIMURA	Current trend of Medical Education; from hospital to community	Professor and Chair, Department of Community and General Medicine, Faculty of Medicine University of Miyazaki	AIDS Research III
2.	June 29 th (WED)	Yuzuru KANAKURA	Diagnosis and treatment of hematopoietic stem cell	Professor, Department of Hematology and Oncology, Osaka University Graduate School of Medicine	Medical Biochemistry
3.	July 1 st (FRI)	Hiroyoshi NISHIKAWA	New cancer immunotherapy by controlling regulatory T-cells	Professor, Department of Immunology, Graduate School of Medicine, Nagoya University	Immunogenetics
4.	July 6 th (WED)	Yasutoshi KOGA	Development of therapeutics agents for mitochondrial disease	Professor, Department of Pediatrics and Child Health, Kurume University School of Medicine	Molecular Physiology
5.	July 8 th (FRI)	Hiroaki KAZUI	Current state of diagnosis and treatment for idiopathic normal pressure hydrocephalus	Assistant Professor, Department of Psychiatry, Osaka University Graduate School of Medicine	Neuropsychiatry
6.	September	Naoyuki MATSUDA	Pathophysiology and Therapeutic Regulation in Severe Sepsis and Septic Shock	Professor, Emergency & Critical Care Medicine, Nagoya University graduate School of Medicine	General Medicine
7.	December 6 th (TUE) 17:30~	Kazutoshi MORI	Dynamics of function and regulation of the endoplasmic reticulum	Professor, Graduate School of Science, Kyoto University	Molecular Genetics
8.	January 11 th (WED)	Yoshiki KUDO	Functions of human placental trophoblast: physiology and pathology	Professor, Department of Obstetrics and Gynecology, Graduate School of Biomedical Sciences, Hiroshima University	Obstetrics & Gynecology
9.	February 8 th (WED)	Kiyoko KATO	Development of Endometrial Cancer Stem-like Cells Target Therapy	Professor, Department of Gynecology and Obstetrics, Graduate School of Medical Sciences, Kyushu University	Obstetrics & Gynecology
10.	Preparing	Yoko KATO	The carrier formation for doctors and international collaboration with the Japanese neurosurgery	Professor, Department of Neurosurgery, Fujita Health University Banbuntane Hotokukai Hospital	Neurosurgery
11.	Preparing	Toshiharu YAMAGUCHI	Treatment strategy for GI cancer in a high volume cancer center.	Cancer Institute Hospital, Hospital Director	Gastroenterological Surgery

Note: The date, time or place of these lectures may change due to the inviter's and lecturer's schedules. 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 the seminar other than the above.

(<http://www.medphas.kumamoto-u.ac.jp/medgrad/kejiban/seminar.html>)

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

A report format of “C2: Medical and Life Science Seminar”
(Medical and Life Science Seminar , Learning from Experienced Doctors Seminar)

Write 1 essay based on 1 talk chosen from the seminar “C2: Medicine and Life Science Seminar”. Length of the essays should be 250-500 words. “C2 :“Medical and Life Science Seminar” require students to attend more than 8 lectures for credit before completion of their Thesis research. Send each essay to the supervisor (inviter of the talker) of the talk within one month by E-mail (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@jimu.kumamoto-u.ac.jp). Attendance will be taken in every talk by signing your name at the entrance of the lecture room.

Graduate schools of medicine, Medical Course , (Master's) C2“Medical and Life Science Seminar” 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			

*Students can obtain this format via a homepage of Graduate School of Medical Sciences.

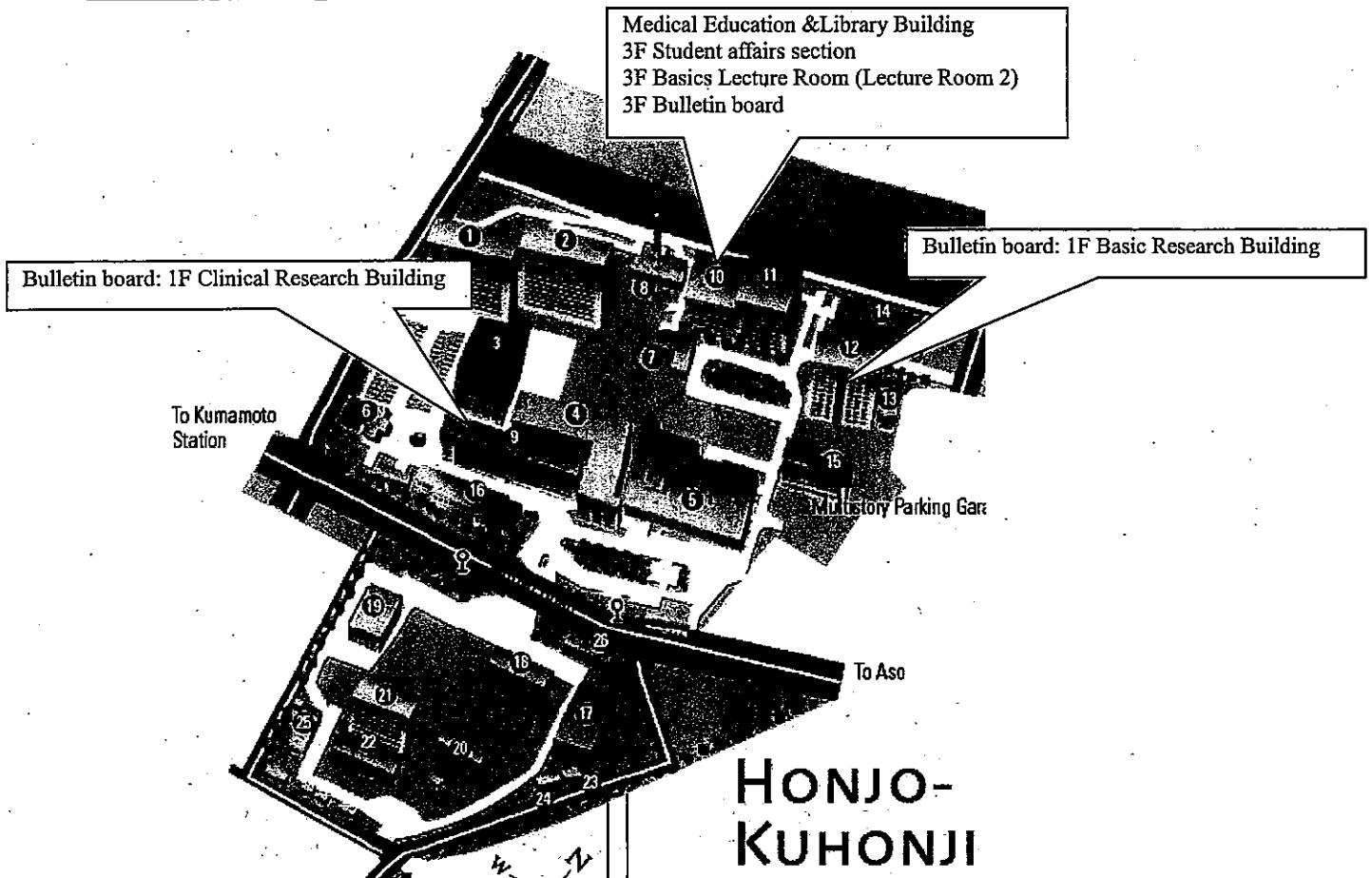
Compulsory subjects
(16 credits)
A6~A7

Please refer to the URL below for further details of "Exercises in Medical Sciences (A 6)" and "Study in Medical Sciences (A 7)".

<http://www.medphas.kumamoto-u.ac.jp/medgrad/keijiban/jugyou.html>

7. Campus map and lecture room location

Honjo Campus



1. West Tower
2. East Tower
3. Central Examination Building
4. Outpatient Examination and Clinical Research Building
5. Administration Building
6. Yamazaki Hall
7. Former Emergency Building
8. Facility Management Building
9. Clinical Research Building
10. Medical Educational & Library Building
11. General Medical Research Building
12. Basic Research Building
13. The Center for Medical Education and Research
14. Dormitory for Nurses
15. Multistory Parking Garage 1
16. Multistory Parking Garage 2
17. Institute of Resource Development and Analysis (Center for Animal Resources & Development)
18. Center for AIDS Research, Institute of Resource Development and Analysis
19. Lecture Building
20. Institute of Molecular Embryology and Genetics
21. Institute of Resource Development and Analysis (Gene Technology Center / Radioisotope Center)
22. Academic Common Honjo-1
23. Club Room
24. Club Room
25. Club Room
26. Higo Iiku Monument Hall