# Academic Year 2026-2027

# Kyoto Prefectural University of Medicine Graduate School of Medical Science

Medical Science Master Degree Course

**Application Guidelines for Students** 

# **Kyoto Prefectural University of Medicine, Graduate School of Medical Science**

https://www.kpu-m.ac.jp/ 465 Kajii-cho, Kawaramachi-Hirokoji, Kamigyo-ku, Kyoto, Japan 602-8566 gkyoumu@koto.kpu-m.ac.jp

#### Academic Year 2026-2027 Kyoto Prefectural University of Medicine Graduate School of Medical Science Medical Science Master Degree Course

#### **Entrance Exam Schedule**

#### **Early-term Exam**

• Admissions capacity: 10 students

• Application period: July 7 (Mon) – July 18 (Fri), 2025

• Entrance exam date: August 20 (Wed), 2025

• Results notification: September 12 (Fri), 2025

#### **Late-term Exam**

Admissions capacity: A few students

• Application period: December 1 (Mon) – December 12 (Fri), 2025

• Entrance exam date: January 14 (Wed), 2026

• Results notification: February 12 (Thu), 2026

# Academic Year 2026-2027 Kyoto Prefectural University of Medicine Graduate School of Medical Science Medical Science Master Degree Course

#### **Application Guidelines for Students**

#### **Admissions Capacity**

10 (Early-term exam: 10 students; Late-term exam: A few students)

#### **Program**

Medical Science, Master

#### **Eligible Applicants**

- 1) Those who have graduated from university (or are expected to graduate by March 2026.
- 2) Those who were awarded (or expect to be awarded by March 2026) a bachelor's degree by the National Institution for Academic Degrees and Quality Enhancement of Higher Education, pursuant to the provisions of Article 104-7 of the School Education Act (Act No. 26 of 1947).
- 3) Those who have completed (or expected to complete by March 2026) 16 years of school education in a foreign country.
- 4) Those who have completed (or expect to complete by March 2026) 16 years of foreign school education through a correspondence course taken in Japan.
- 5) Those who have completed (or expect to complete by March 2026) a course of study at an educational institution regarded by a foreign educational system to possess the curriculum of a foreign university (limited to applicants who have completed 16 years of foreign school education), and coursework designated separately by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
- 6) Those who have been awarded (or are expected to be awarded by March 2026) a degree equivalent to bachelor's degree by completing a 3 years or longer program at a foreign university/other foreign educational institution which have been accredited by the respective foreign government or a person who has obtained certification by the appropriate foreign governmental agency, or which has been designated by the MEXT as the equivalent thereof. (This includes those who have completed the distance/online program offered by the appropriate school by taking courses while residing in Japan as well as one of those foreign educational programs at an appropriate educational institution positioned in the school education system of the said country and designated by said authorization described in the preceding Item)
- 7) Applicants in a specialized program at a vocational school (limited to schools that have a 4-year program of study or longer, and that satisfy the standards designated by MEXT), who have completed coursework designated separately by MEXT on or after the date specified or by March 2026.
- 8) Applicants specifically designated (or expected to be designated by March 2026) by the Minister of Education, Culture, Sports, Science and Technology (Notice No. 5 by the Ministry of Education on February 7, 1953).

- 9) Those who entered a graduate school pursuant to the provisions of Article 102-2 of the School Education Act, and who are acknowledged by Kyoto Prefectural University of Medicine Graduate School to possess academic ability sufficient for education at a graduate school level.
- 10) Those who have studied at a university for a minimum of 3 years (including those designated as qualified by MEXT), and who are recognized by Kyoto Prefectural University of Medicine Graduate School as having earned the designated number of credits with superior scores.
- 11) Those who have attended Kyoto Prefectural University of Medicine School of Medicine for at least 4 years and earned 124 credits or more (those who are expected to meet this requirement by March 2026).
- 12) Other applicants recognized by Kyoto Prefectural University of Medicine Graduate School as possessing academic ability equal to or greater than university graduates, and who are at least 22 years of age on March 31, 2026.

#### **Application Period**

Early Term Exam: July 7 (Mon) to July 18 (Fri), 2025

Late Term Exam: December 1 (Mon) to December 12 (Fri), 2025

Applications are accepted Monday through Friday from 9:00 am to 5:00 pm. (closed Saturday and Sunday)

#### Where to Submit Application

465 Kajii-cho, Kawaramachi-Hirokoji, Kamigyo-ku, Kyoto, Japan 602-8566

Kyoto Prefectural University of Medicine, Student Affairs Office (Graduate School Division)

gkyoumu@koto.kpu-m.ac.jp

#### **Application Procedure**

Applicants must submit all required application materials to the Kyoto Prefectural University of Medicine, Student Affairs Office (Graduate School Division).

If mailing the application, all documents must be enclosed in the envelope designated by the Kyoto Prefectural University of Medicine Graduate School and sent by simplified registration mail. All documents must be received on or before the deadline. However, late applications received after the deadline may be considered if sent by simplified registration express mail and postmarked on or before July 16 (Wed), 2025 for the early-term exam and December 10 (Wed), 2025 for the late-term exam.

Prior to submitting an application, students must consult with the academic advisor (professor) for their desired research area regarding their academic plans (research and education). Please refer to the Kyoto Prefectural University of Medicine website [https://www.kpu-m.ac.jp/] for more information on research topics.

**Required Application Materials** (\*forms specific to Kyoto Prefectural University of Medicine)

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*	Application form	All required fields must be completed.	
	Academic transcript	An official transcript, certified and sealed by the university dean or department head.	
*	Personal statement	All required fields must be completed.	
	Certificate of graduation (or anticipated graduation)	An official certificate, certified and sealed by the university dean or department head.	
	Proof of awarded degree (bachelor's) or anticipated degree	For applicants who fall under item 2 in the admissions eligibility list above.	
	Photographs	Two photos meeting the following specifications must be provided:  Taken within 3 months of application date  from (height) by 4 cm (width)  Showing the head and upper body  Taken in full-face view, directly facing the camera, without any hats.  Write your name on behind each photo and paste onto the specified area on the application form.	
*	Application fee (deposit form)	30,000 yen  Remit using the university-designated deposit form and submit proof of payment (slip C). Once accepted, the fee is not refundable for any reason.	
*	Self-addressed stamped envelope (SASE) to receive exam admission ticket	Fill in your name, address, and postal code on the front of the envelope, and affix sufficient postage (to cover postage and simplified registration mail fee).	
*	Address labels	Fill in your name, address, and postal code. Labels will be used to send notification of acceptance (delivered on results notification date) and the admissions letter (issued March 2026).	
	Certificate regarding name [Only if applicable]	If the surname on the certificate or other documents differs from the name on the application form, enclose proof of the change (e.g. an extract from the family register).	
	Copy of residence card (or copy of passport)	International students only. Residence card must be submitted as a photocopy of both sides of the front and back. However, those who have not yet arrived in Japan must submit a copy of your passport.	
	*	* Application form  Academic transcript  * Personal statement  Certificate of graduation (or anticipated graduation)  Proof of awarded degree (bachelor's) or anticipated degree  Photographs  * Application fee (deposit form)  Self-addressed stamped envelope (SASE) to receive exam admission ticket  * Address labels  Certificate regarding name [Only if applicable]  Copy of residence card (or	

#### **Notes**

- 1) Applications with incomplete application materials or non-compliance with the application procedure will not be processed.
- 2) Students found to have falsified application information will be subject to withdrawal of admission, even after enrollment.
- 3) Application documents will not be returned for any reason.
- 4) Applicants must immediately notify the Student Affairs Office (Graduate School Division) of any changes to their mailing address.
- 5) Applicants with physical disabilities who require assistance during examinations or school attendance should request this from the Student Affairs Office (Graduate School Division) prior to application.

# **Certification of Eligibility**

Applicants who fall under items 9-10,12 of the eligibility criteria listed above must submit documents certifying their eligibility with their application.

1) Required application materials (\*forms specific to Kyoto Prefectural University of Medicine)

Applicants falling under eligibility items 9 or 10

1	*	Application for eligibility certification	All required fields must be completed.
2		Enrollment certification from school of enrollment	Required only for applicants who are currently enrolled. Must be sealed.
3		Academic transcript from school of enrollment	Required only for applicants who are currently enrolled. Must be sealed.
4		Course manual (student handbook)	Must include descriptions of the courses taken.

#### Applicants falling under eligibility item 12

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1	*	Application for eligibility certification	All required fields must be completed.
2	*	Research plan	All required fields must be completed.
3	*	Record of research achievements	All required fields must be completed.
4		Major papers and research presentations	Photocopies are acceptable.

In addition to the above, we may ask for other credentials/certification as necessary.

Certifications written in a foreign language must be accompanied by a Japanese translation.

#### 2) Certification method

Eligibility will be determined based on the submitted documents.

#### **Admissions Selection Process**

Selection is based on a comprehensive review of aptitude test scores (foreign language exam, proficiency exam, and oral exam) and academic transcripts.

#### Entrance Exam Schedule

#### **General Candidate Exam**

Date	Time	Aptitude Test	Location
Early-Term Exam: Aug. 20(Wed), 2025	9:15 – 11:15	Foreign language (English) exam*	Kyoto Prefectural University of Medicine, school building of Nursing
Late-Term Exam:	12:30 – 14:30	Proficiency exam**	(1st floor)
Jan. 14 (Wed), 2026	15:00 –	Oral exam (interview)	To be announced on exam date

<sup>\*</sup>The foreign language (English) exam consists of English-Japanese and Japanese-English translations.

Candidates are permitted to bring one English-Japanese dictionary and one Japanese-English dictionary.

Electronic and medical dictionaries are not allowed.

#### Foreign Candidate Exam 1

Date	Time	Aptitude Test	Location	
Early-Term Exam: Aug. 20 (Wed), 2025	9:15 – 11:15	Foreign language exam (English)*	Kyoto Prefectural University of Medicine, school building of Nursing	
Late-Term Exam:	12:30 – 14:30	Proficiency exam**	(1st floor)	
Jan. 14 (Wed), 2026	15:00 –	Oral exam (interview)	To be announced on exam date	

<sup>\*</sup>The foreign language (English) exam consists of English-Japanese translations only. Candidates are permitted to bring one English-Japanese dictionary. Electronic and medical dictionaries are not allowed. \*\*The proficiency exam will be given in either Japanese or English. Candidates must respond to basic biology questions and write an essay in either Japanese or English.

#### Foreign Candidate Exam 2

Date	Time	Aptitude Test	Location
Early-Term Exam: Aug. 20 (Wed), 2025	12: 30 – 14:30	Proficiency exam*	Kyoto Prefectural University of Medicine, school building of Nursing (1st floor)
Late-Term Exam: Jan. 14 (Wed), 2026	15:00 –	Oral exam (interview)	To be announced on exam date

<sup>\*</sup>The proficiency exam will be given in English. Candidates must respond to basic biology questions and write an essay in English. Candidates are permitted to bring one English dictionary to the proficiency exam. Electronic and medical dictionaries are not allowed.

#### **Notes**

# International applicants must select Foreign Candidate Exam 1 or 2 on their applications. The selection cannot be changed after the application is submitted.

International applicants who have graduated (or are expected to graduate by March 2026) from a Japanese university must take the General Candidate Exam.

<sup>\*\*</sup>The proficiency exam will be given in Japanese. Candidates must respond to basic biology questions and write an essay in Japanese.

#### **Notification of Results**

**Early-Term Exam:** Sep. 12 (Fri), 2025, 10:00 am **Late-Term Exam:** Feb. 12 (Thu), 2026, 10:00 am

The results of the early-term and late-term exams will be posted on the Kyoto Prefectural University of Medicine Student Affairs Office bulletin board, and a notification of acceptance will be sent to accepted applicants. The Kyoto Prefectural University of Medicine website will also post the identification numbers of accepted applicants after the date and time listed above. However, information published on the website is unofficial and intended solely for reference. Please verify with the official results posted on the bulletin board of the Kyoto Prefectural University of Medicine Student Affairs Office or with the mailed notification of acceptance.

Please note that we do not respond to inquiries by phone.

#### **Registration Process**

1) Enrollment fee: 282,000 yen (due upon enrollment)\*

2) Tuition: 535,000 yen (assessed separately after enrollment)\*\*

3) Instructions regarding the enrollment process, schedule, and required materials will be provided in the notification of acceptance.

\*The enrollment fee may be reduced, waived, or postponed if payment is a hardship due to a natural disaster that occurred within 1 year of the date of admission.

#### **Notes**

- 1) Enrollment fee and tuition amounts are subject to change. If tuition is modified during a student's period of attendance, the new tuition will apply from the time of revision forward.
- 2) The enrollment fee and tuition are non-refundable.
- 3) Tuition is to be paid over two semesters (first and second semester).
- 4) Offer of admission may be rescinded if the registration is not completed by deadline.

#### Other Information

- 1) Candidates must arrive at the testing center at least 15 minutes prior to the start of each exam.
- 2) To request the application guidelines and/or application form by mail, please enclose a self-addressed (postal code, address, name), stamped (320 yen), square type-2 envelope, clearly marked "Graduate School Master Degree Course Application Form Request" on the front side using red ink. Requests must be mailed to the address below.

465 Kajii-cho, Kawaramachi-Hirokoji, Kamigyo-ku, Kyoto, Japan 602-8566 Kyoto Prefectural University of Medicine, Student Affairs Office (Graduate School Division)

<sup>\*\*</sup>Tuition may be reduced or waived if payment is an economic hardship and the student is recognized for excellent academic achievement.

# Kyoto Prefectural University of Medicine, Graduate School of Medical Science Medical Science Master Degree Course Enrollment Guide

#### 1) Length of Study

The standard length of study is 2 years.

\*Upon review of special circumstances such as full-time employment, candidates may be permitted to enroll in the educational program for a scheduled period (of up to 4 years) beyond the standard length of study. For details, please contact the Student Affairs Office (Graduate School Division) at e-mail. <a href="mailto:gkyoumu@koto.kpu-m.ac.jp">gkyoumu@koto.kpu-m.ac.jp</a>

#### 2) Program Overview, and Research Guidance

Outlined on the following page.

#### 3) Degrees Awarded

Students who complete the program are awarded a master degree in Medical Science. The master degree is awarded to candidates who have been enrolled in the graduate school for a minimum of 2 years (1 year for those with exceptional research achievements), earned 30 or more credits satisfying the program requirements, and passed both the final examination and dissertation examination after receiving the required research guidance.

#### 4) Japan Student Services Organization Scholarships

There is scholarship programs for Japanese students (loan) for graduate students from the Japan Student Services Organization, and those who are academically and character-excellent, healthy, and recognized as having difficulty paying tuition fees due to their family's financial situation will be recommended to the Japan Student Services Organization.

# **Program Overview**

# 1 List of Course Subjects

# (1) Core Subjects (26 courses)

**Bioethics and Medical Ethics** 

An Introduction to Research Methods in Medicine

Lectures	(10 req	uired	courses,	8 6	elective	courses)	)
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Lectures (10 required courses, 8 elective courses	s)
Molecular Cellphysiology and Molecular Genetics A	(Year 1, req. 1 credit)
Molecular Cellphysiology and Molecular Genetics B	(Year 1, req. 1 credit)
Neurophysiology A	(Year 1, req. 1 credit)
Neurophysiology B	(Year 1/2 reg. 1 credit)
Neuropathology Neurology	(Year 1/2, req. 1 credit) (Year 1/2, req. 1 credit)
Cardiovascular Medicine A	(Year 1/2, req. 1 credit)
Cardiovascular Medicine B	(Year 1/2, req. 1 credit)
Molecular Cancer Genetics Research/Oncology A	(Year 1/2, req. 1 credit)
Molecular Cancer Genetics Research/Oncology B	(Year 1/2, req. 1 credit)
Application of Biosensing Technology and Bioimaging Science	
	(Year 1/2, elec. 1 credit)
Visual perception and optics	(Year 1/2, elec. 1 credit)
Biomedical Material and Engineering	(Year 1/2, elec. 1 credit)
Food, Nutrition and Health	(Year 1/2, elec. 1 credit)
Molecular-Target Drug Discovery	(Year 1/2, elec. 1 credit)
Social and Environmental Medicine	(Year 1/2, elec. 1 credit)
Public Health Services and Administration	(Year 1/2, elec. 1 credit)
Medical Information Technology	(Year 1/2, elec. 1 credit)
Practical Seminars (1 course)	
Practical Experience in Medicine	(Year 1, req. 2 credits)
Seminars (6 courses)	
Pediatrics	(Year 1/2, elec. 1 credit)
Adolescent Medicine	(Year 1/2, elec. 1 credit)
Gerontology and Geriatrics	(Year 1/2, elec. 1 credit)
Obstetrics and Gynecology	(Year 1/2, elec. 1 credit)
Neuroscience Seminar	(Year 1/2, elec. 1 credit)
Molecular Lifescience Seminar	(Year 1/2, elec. 1 credit)
Special Subjects (1 course)	
Research Seminars	(Year 1-2, elec. 1 credit)
(2) Core-Related Subjects (4 courses)	
Regenerative Medicine	(Year 2, elec. 1 credit)
Neuroscience	(Year 2, elec. 1 credit)
Medical Oncology	(Year 2, elec. 1 credit)
Medical Immunology	(Year 2, elec. 1 credit)
(2) Polated Subjects (9 accessed)	
(3) Related Subjects (8 courses)	
An Introduction to Medicine	(Year 1, req. 1 credit)
Molecular Medicine and Life Science	(Year 1, req. 1 credit)

(Year 1, req. 1 credit)

(Year 1, req. 1 credit)

Applied Linguistics (Year 1/2, elec. 1 credit)
Basic Medical statistics (Year 1/2, elec. 1 credit)
Patient Safety Management Systems (Year 2, elec. 1 credit)
An Introduction to Pre-symptomatic Conditions (Mibyou) (Year 2, elec. 1 credit)

(4) Tutorials (Years 1-2, required)

Dissertation 1 (Year 1, 4 credits)
Dissertation 2 (Year 2, 8 credits)

#### 2 Program Coursework and Requirements

Each student must complete a minimum of 11 credits from Core Subjects, which includes lectures, Practical Seminars, seminars, and special subjects. Specifically, students must earn at least 7 credits from lectures (i.e., 5 credits from the required lecture courses— Molecular Cellphysiology and Molecular Genetics A /B, Neurophysiology A/B, Neuropathology, Neurology, Cardiovascular Medicine A/B, and Molecular Cancer Genetics Research/Oncology A/B—and at least 2 credits from other lecture courses), 2 credits from the required Practical Experience in Medicine course (Practical Seminars), and at least 2 credits from elective or special subjects.

Each student must earn a minimum of 4 credits in the related subjects, including coursework from the required classes An Introduction to Medicine, Molecular Medicine and Life Science, Bioethics and Medical Ethics and An Introduction to Research Methods in Medicine.

Additionally, each student must complete a minimum of 3 credits in coursework from one of the following categories: Core-Related Subjects, Core Subjects (lecture, seminar, or special subjects), or Related Subjects. Students must prepare for their Master's thesis by earning 12 credits in coursework from Dissertation I and II.

To be eligible for graduation, Master's degree candidates must fulfill the following requirements: earn a minimum of 30 credits (breakdown as described above), submit a Master's thesis, and pass the final examination.

These requirements are summarized in the table that follows.

Coursework Credit Requirements

Category	Required Credits
Core Subjects	11 credits (minimum)
Lectures*	7 credits (minimum)
Practical Seminars	2 credits
Seminars, Special Subjects	2 credits (minimum)
Related Subjects	4 credits (minimum)
Core Related Subjects**	3 credits (minimum)
Tutorials	12 credits
Total Required Credits	30 credits (minimum)

<sup>\*</sup>Core Subjects lectures: 5 credits from required courses, 2 or more credits from elective courses.

<sup>\*\*</sup>Earn a minimum of 3 credits from Related Specialized Subjects, Core Subjects, or Related Subjects.

# **Overview of Research Guidance**

as of June 1, 2025

Advisor(s)		Lecture Topics
Professor Michihiro Mutoh (Molecular-Targeting Prevention)	1st year	Based on the current state and an overview of molecular preventive medicine, this course provides guidance on the practice of molecular preventive medicine using cancer as a representative model. Specifically, students receive research guidance on "molecular-targeting" prevention of cancer.
	2nd year	This course provides the advanced guidance based on 1st year achievement. Students experience the future potential of molecular preventive medicine. Specifically, students investigate and discuss whether residents diagnosed with a predisposition to cancer can receive personalized cancer prevention, and what types of strategies are available.
Professor Naoyuki Takashima (Epidemiology for Community Health	1st year	This course aims to clarify the health problems for public health. This course provides guidance on descriptive and analytical epidemiological techniques using actual data.
and Medicine)	2nd year	Based on Special Research Project I, the course provides guidance to familiarize themselves with analytical epidemiological methods, analyze actual data, derive results, and draw conclusions.
Professor Hiroshi Ikegaya (Forensic Medicine)	1st year	This course examines methods of personal identification similar to forensic medical techniques, and examines the effectiveness and disadvantages of conventional methods through forensic practice to assess what practical methods are required.
	2nd year	Based on the findings of Special Research Project I, this course references various forensic medicine resources and uses biochemical and molecular biological methods to discover and verify the effectiveness of new, highly specialized personal identification methods similar to forensic medicine techniques and unlike conventional methods.
(Emergency Medicine)	1st year	
	2nd year	

Advisor(s)		Lecture Topics
Professor Satoru Shikata (General Medicine & Community Healthcare)	1st year	By acquiring basic knowledge of clinical epidemiology, learners will be able to design research to solve clinical questions arising from daily practice. As the next step, learners acquire the skills to disseminate evidence that is cited in textbooks and clinical practice guidelines.
	2nd year	Learners will acquire the ability to utilize public health data, administrative data, etc. in a specific area, perform multivariate analysis and big data analysis, and connect them to policy proposals. Learners will acquire behavioral psychological approaches that lead to behavioral changes of patients and medical staff, as well as data integration research methods that can be used for clinical reasoning.
Professor Satoshi Teramukai (Biostatistics)	1st year	Students observe the processes of preparing a clinical study protocol, and receive guidance on philosophically balancing science, ethics, and feasibility.
	2nd year	Based on Special Research Project I, this course guides students in setting up the design, implementation system, and data quality management system for specific clinical issues—that is, the core of their clinical study protocol.
Professor Koichi Setoyama (Biomedical Ethics)	1st year	In this course, students examine the various ethical, legal and social issues (ELSI) concerning medicine, medical research, and clinical trials, considering the latest overseas trends, and are provided with research guidance. Topics include the following: assisted reproductive technology, such as prenatal screening and abortion or pre-implantation genetic diagnosis and embryonic selection, surrogacy and egg donation; ethical considerations of terminal care, such as organ trafficking, euthanasia, and death with dignity; enhancement of health and ability through genetic editing / intervention; various social problems concerning genetic discrimination; and ethical review of medical research and the role of research committees / committee members.
	2nd year	In this course, students examine the various ethical, legal and social issues (ELSI) raised by advanced medicine, medical research, and clinical trials, through intellectual findings in dissertation 1 course. The course addresses these issues in light of current overseas trends and diverse perspectives, such as paternalism, and provides students with research guidance.
(Mathematics and Statistics in Medical	1st year	
Sciences)	2nd year	

Advisor(s)		Lecture Topics
Professor Tomoko Iehara (Pediatrics)	1st year	Pediatrics is an academic area that studies children's bodies and minds and abnormalities collectively and entirely, including the environment surrounding children, and works on society. This course provides guidance through research of each specialized field in pediatrics.
	2nd year	Based on the survey and research results of Special Research Project I, this course allows students to narrow their topic of study from among the specialized fields in pediatrics, and guides students to further examine their selected topic and derive conclusions.
Professor Shigeru Ono (Pediatric Surgery)	1st year	The basic treatment of pediatric malignant solid tumors is a multidisciplinary approach combining surgical therapy, chemotherapy, and radiation, depending on the biological malignancy level of the tumor. This course addresses the role of the surgical therapy and radiation therapy for the local control of the tumors.
	2nd year	This course explains the factors that determine biological malignancy in pediatric malignant solid tumors and provides guidance on the role and concepts of local therapy (surgical therapy and radiation therapy) for each disease, considering prevention of the late complications.
Professor Taisuke Mori (Obstetrics and Gynecology)	1st year	To understand the phenomenon across the female lifespan, this course conducts surveys and research on topics such as female hormone disorders, menopausal/postmenopausal disorders, infertility treatment and ethical considerations, endometriosis, perinatal management of high-risk pregnancies, and chemotherapy for gynecological malignancies.
	2nd year	Based on the research and findings from the first year, students focus on their research topics from the following areas: female hormone disorders, menopausal/postmenopausal disorders, infertility treatment and ethical considerations, endometriosis, perinatal management of high-risk pregnancies, and chemotherapy for gynecological malignancies. The course provides guidance to help students examine these topics and deriving conclusions from their research.
Professor Masataka Kizuka (The Department of Communication, Education and Language)	1st year	<ul> <li>Tutorials for research topics in relation to the following:</li> <li>1. The process of acquiring and developing professional knowledge and expertise.</li> <li>2. The processes of child cognitive development (ex. language and learning) from the standpoint of educational theories, pedagogy, linguistics, medicine and related academic disciplines.</li> <li>3. The theory and practice of initial teacher education and the education of medical doctors in the United Kingdom and other countries.</li> </ul>

Advisor(s)		Lecture Topics
	2nd year	<ol> <li>Tutorials for research topics in relation to the following:</li> <li>The process of acquiring and developing professional knowledge and expertise.</li> <li>The processes of child cognitive development (ex. language and learning) from the standpoint of educational theories, pedagogy, linguistics, medicine and related academic disciplines.</li> <li>The theory and practice of initial teacher education and the education of medical doctors in the United Kingdom and other countries.</li> </ol>
Professor Kei Tashiro (Genomic Medical Sciences)	1st year	To clarify how genetics contributes to individual formation/maintenance and individual differences, this course applies the theory behind clarifying the roles of responsible genes and applies practical methods as examples. Additionally, the course provides guidance on ethical issues, procedures, and methods of anonymization.
	2nd year	To clarify how genetics contributes to individual formation/maintenance and individual differences, this course applies the theory behind clarifying the roles of responsible genes and applies practical methods as examples. In addition, the course provides guidance concerning ethical issues, procedures, and methods of anonymization.
Professor Shinichiro Nakada (Biochemistry and Molecular Biology)	1st year	Students participate in research on DNA damage response, repair mechanisms, and genome editing. Through molecular and cellular biology experiments using cultured cells, they engage in discussions with faculty and researchers—from planning experiments to analyzing and interpreting results—to establish a solid foundation in research.
	2nd year	Students take the initiative in conducting research on DNA damage response, repair mechanisms, and genome editing. Building on their first-year learning outcomes, they assume a leading role in every stage—from experimental design to data analysis and interpretation—and complete their research projects under faculty guidance.
Professor Yoko Nukui (Infection Control & Molecular Laboratory)	1st year	Students collect both clinical and basic data related to infectious diseases, infection control, and laboratory medicine. Based on the latest findings and novelty, students will select a research theme in line with their own interests, and conduct research and study together with their supervisors.
	2nd year	Based on the results and other data obtained from research in Special Research I, students will select a theme from among themes such as pathogenicity analysis of drug-resistant bacteria, clinical infectious diseases, and cell analysis using flow cytometry, to conduct clinically significant research with their supervisors.

Advisor(s)		Lecture Topics
Professor Michiaki	1st year	Students review literature and collect data regarding the latest
Fukui		trends in research pertaining to the causes and treatments of diabetes
(Endocrinology and		and diabetic angiopathy. The course guides students in their selection of
Metabolism)		research topics and development of a research plan and methodology.
	2nd year	Students develop hypotheses based on the guidance they received in
		Special Research Project I. This course provides guidance in conducting
		basic or clinical research to verify the hypotheses using animal models
		for human diseases. Students receive guidance in analyzing and
		examining their results and completing their thesis.
Professor Satoaki	1st year	Students collect clinical data on various patients with cardiovascular
Matoba		diseases, then review and organize the data. The course guides students
(Molecular Cardiology		in understanding the research process by which clinical epidemiology
and Vascular		and pathophysiology in hospitals are clarified. Students will learn about
Regenerative Medicine)		the pathophysiology and treatment of cardiovascular diseases,
		lifestyle-related diseases, and aging-related diseases through
		epidemiology, molecular biology, and gene editing, and will be guided in
		conducting experiments and social implementation.
	2nd year	This course provides students with guidance to further develop the
		techniques and knowledge they obtained in Special Research Project I,
		to collect and analyze clinical data, and to draw clinically meaningful
		conclusions.
Professor Koichi	1st year	Various pathological conditions occur in the lungs, organs in contact
Takayama		with the outside world. These include various diseases, such as
(Respiratory Molecular		pulmonary infections, asthma, COPD, respiratory tract disease,
Medicine)		diffusive lung disease, and neoplastic disease. Allergies and immunity
		are involved in many of these diseases, and methods for diagnosis and
		treatment have already been established according to medical
		condition. This course provides an overview of pulmonary diseases for
		students seeking to gain basic knowledge.
	2nd year	Based on the concepts mastered in Special Research Project I,
		students narrow their focus to pulmonary infections, asthma, COPD, or
		lung cancer, and gain a deep understanding of the characteristics of
		their selected pulmonary disease by collecting and analyzing clinical
		data. At the same time, this course provides students with necessary
		guidance to compare their findings with those already obtained in
		Japan and abroad, and to shed new light on clinical problems.
(Molecular	1st year	
Gastroenterology and		
Hepatology)	2nd year	
F	3 3 - 2 -	

Advisor(s)		Lecture Topics
Professor Junya Kuroda (Molecular Hematology and Oncology)	1st year	The treatment strategies for hematologic malignancies are determined based on pathological diagnosis and evaluation of prognostic factors. Students receive guidance to deepen their basic understanding of the molecular pathology of tumors, clinical prognostic factors, and treatment strategies.
	2nd year	The course considers the optimal combinationatory chemotheraputic drug selection for hematologic malignancies, hematopoietic stem cell transplantation (HSCT), and radiation therapy. Along with the levels of achievement in Special Research Project I, students receive guidance for examining the overall optimal combination treatment concept based on molecular pathological disease analysis, clinical pathology, and clinical evidence.
Professor Tomoyuki Ohara (Molecular Neurology and Gerontology)	1st year	Students will select a topic from neurological disorders such as dementia, Parkinson's disease, hereditary neurological diseases, neuroimmunology disorders, or cerebrovascular diseases, and will learn how to build a clinical database and perform data analysis under supervision.
	2nd year	Based on the outcomes of the first year, students will deepen their understanding of the molecular pathomechanisms of neurological disorders and the fundamentals of advanced neuroimaging analysis and will be guided to conduct research aimed at developing novel diagnostic and therapeutic approaches.
Professor Takeshi Fukumoto (Dermatology)	1st year	We provide systematic instruction to acquire foundational knowledge of the structure and physiological functions of the skin, while also deepening the understanding of the pathogenesis of inflammatory skin diseases and skin tumors. The focus of this project is to examine and evaluate the molecular and cellular mechanisms. These mechanisms are examined from a number of perspectives, including skin barrier dysfunction, immune responses, ageing and chronic inflammation. We guide students to independently construct research themes aligned with their individual interests, maintaining an awareness of the clinical
	2nd year	relevance.  We guide students in conducting experimental studies to elucidate the pathogenesis of inflammatory skin diseases and skin tumors. Specifically, we instruct how to use of in vitro models, such as cultured cells, iPS cells, and skin organoids, as well as in vivo models, to evaluate disease-associated factors and clarify underlying mechanisms. We aim to develop insights that contribute to a deeper understanding of disease pathology and the formulation of novel therapeutic strategies.
(Anatomy and Neurobiology)	1st year	
	2nd year	

Advisor(s)		Lecture Topics
Professor Kenta Yashiro (Anatomy and Developmental Biology)	1st year	We provide an opportunity to learn how to proceed a basic scientific research project; planning an experiment, interpreting the obtained results, and drawing a conclusion, to validate our own original hypothesis, from a viewpoint of developmental biology, stem cell science, and cell biology. Our lab's main interest is molecular mechanisms underlying the heart development, the differentiation of cardiac progenitor cells, and the physiological function of cilia.
	2nd year	The training in the course expands the line of year 1 to develop the more sophisticated skills which are required for basic scientific research. Through this course, the students have an opportunity to take part in a research work of developmental biology, stem cell science and cell biology to better understand the heart development, cardiac progenitor cells differentiation, and/or the physiological function of cilia.
Professor Akiyuki Taruno (Molecular Cell Physiology)	1st year	Chemical sensations, including taste and smell, are essential for survival by detection of hazards, pheromones, and food. This course selects for each student a topic on the sensory physiology, and teaches methods at the molecular, cellular, system, and behavioral levels with a particular emphasis on electrophysiology of ion channels, neuronal cells, and neural circuits behind sensations.
	2nd year	By analyzing the data obtained in Special Research Project I, and conducting further experiments, students will learn how to design a research project and draw a conclusion.
Professor Kazuhiro Yagita (Physiology and Systems Bioscience)	1st year	This course focuses on the biological rhythm that is one of the universal biological functions, and studies the mechanism of a stable and robust system. The course teaches various methods to observe this mechanism "alive and as is."
	2nd year	This course focuses on the biological rhythm that is one of the universal biological functions, and studies the mechanisms and implications of circadian rhythms. The course teaches not only "science for principles" but also "science for pre-symptomatic status" and "science for personalization" to apply protecting public's health.
Professor Yoichi Takanishi (Fundamental physics and life science)	1st year	In this course, in order to understand the physical principle for the medical devices and/or dynamics and functions of biological system, the students can learn the basic experimental techniques using soft-material samples and the ability of physical consideration.
	2nd year	Based on the acquired knowledge, techniques and skills in Special Research Project I, the students can study the advanced research themes that will lead to the future medical science.

Advisor(s)		Lecture Topics
Professor Tatsuya Yoshizawa (Cell Biology)	1st year	Organ crosstalk and cell communications are the foundation for maintaining whole-body metabolic homeostasis. To understand the functions of one molecule at whole-body level, this course instructs students to learn a wide range of knowledge, such as molecular biology, cell biology, endocrinology and metabolism, and a wide variety of experimental skills using DNA, RNA, proteins, cells, and mice.
	2nd year	Based on the acquired knowledge and skills in Special Research Project I, the students participate in advanced research focused on the cell communication and signaling, e.g., the elucidation of the homeostatic mechanisms with musculoskeletal system, and a study of bone-derived hormone.
Professor Motohiro Kojima (Surgical Pathology)	1st year	Students are trained to acquire ability to assess and refer pathological features in human disease. Next, students will comprehend pathological knowledge, analysis, and ethical process.
(Surgicul Lunionogy)	2nd year	Students will extract pathological issue based on daily practice and plan solution to solve this issue, which will be conducted as a project.
Professor Yoshinori Harada (Pathology and Cell Regulation)	1st year	The goal is to elucidate disease mechanisms at the cellular and molecular levels. Students will select a research topic in consultation with academic advisors. Through experiments utilizing advanced technologies such as live tissue imaging and Raman spectroscopy, they will develop foundational experimental skills and scientific thinking.
	2nd year	In the second year, students will further develop the research conducted in the first year and summarize their findings in conference presentations and a master's thesis. They will be guided to integrate knowledge of molecular pathology and cell biology with experimental techniques, and to independently acquire the skills necessary for advancing research aimed at understanding disease mechanisms.
Professor Aya Miyagawa (Pathology and Applied Neurobiology)	1st year	To elucidate the pathological and developmental mechanisms of abnormalities in brain formation and development based on genetic and environmental factors, this course provides the use of genetically engineered animal models, neural stem cells and neurons derived from mouse embryos, etc., using histological, molecular biological and biochemical analytical methods.
	2nd year	Based on the knowledge and techniques obtained in the first year, the students will be guided in exploratory research to elucidate the mechanisms of abnormal brain formation and molecular targeted therapy using genetically engineered animal models, etc.

Advisor(s)		Lecture Topics
Professor Takaaki Nakaya (Infectious Diseases)	1st year	Students receive research guidance based on molecular biology and cell biology, and aim to clarify the mechanism of viral and parasitic pathogenicity.
	2nd year	Students consider the molecular mechanisms of pathogenicity in specific viruses or parasites using infection tests, and receive guidance in analyzing and drawing conclusions.
(Immunology)	1st year	
	2nd year	
Professor Atsushi Umemura (Molecular Pharmacology)	1st year	Key molecules involved in the pathogenesis of various diseases become targets for drug discovery. This course focuses on molecules associated with cancers and lifestyle-related diseases that lower quality of life. Guidance for experimental studies on the molecular mechanisms will be provided.
	2nd year	Focused on target molecules for drug development, research guidance will be provided using cellular and animal models. The final goal of the research is to explore new therapeutic strategies for diseases.
Professor Jin Narumoto (Psychiatry)	1st year	This course provides guidance on the symptoms, course and treatment of representative psychiatric disorders including schizophrenia, mood disorders, anxiety disorders and dementia to acquire the basics of research and development of new examination and treatment.
	2nd year	This course instructs students to review the previous studies and plan a new study to investigate psychiatric disorders.
Professor Kei Yamada (Radiology)	1st year	This course provides guidance on the basics of medical images used for diagnosis, such as CT, MRI, SPECT, and PET, and the practice of image interpretation.
	2nd year	In this course, students experience first-hand the interpretation and image processing methods of medical images used in diagnosis, such as CT, MRI, SPECT, and PET, and study ways to improve the methodology.
Professor Makoto Oba (Medical Chemistry)	1st year	This course instructs students in acquiring a wide range of knowledge and skills through drug discovery research, namely topics necessary for drug development, such as organic synthetic chemistry, organic reactions, structural chemistry, biological sciences, and computational chemistry.

Advisor(s)		Lecture Topics
	2nd year	This course instructs students to use the knowledge and skills they obtained in Special Research Project I to independently perform molecular design, synthesis, and biological activity evaluation of drug candidate compounds.
Professor Atushi Shiozaki (Digestive Surgery)	1st year	This course guides students in analyzing past clinical data on surgical methods and chemotherapy for gastrointestinal cancer and deriving a new treatment or diagnostic policy to improve postoperative survival rate.
	2nd year	Students are provided with research guidance related to the diagnosis and treatment of gastrointestinal cancer. They receive instruction concerning research topics such as tailor-made cancer treatments through analysis of blood-based biomarkers, early diagnosis of recurrent cancers, and prediction of radiation and chemotherapy effects.
Professor Yasuto Naoi (Endocrine Surgery)	1st year	This course studies breast cancer surgery, in particular sentinel lymph node biopsy and the prognosis of axillary lymph node dissection/non-dissection, or the prognosis of breast conservation therapy. The course instructs students to identify factors related to the prognosis by retroactively analyzing clinical data.
	2nd year	Students learn about the pharmacotherapy of breast cancer and will receive research guidance to study factors related to drug sensitivity and occurrence of side effects in pharmacotherapy.
Professor Shinichiro Oda (Cardiovascular Surgery)	1st year	Investigate and analyze clinical data to identify issues during the postoperative period of cardiovascular surgery, and explore improvements.
	2nd year	Guide to build upon the findings from the first year and connect them to final conclusions and advanced challenges.
Professor Masayoshi Inoue (General Thoracic Surgery)	1st year	Students are guided to understand the epidemiology, pathology, diagnostic method, treatment method, and prognosis of lung malignancies such as primary lung cancer and metastatic lung cancer, and to consider the significance of surgical treatment for these diseases. Students are also guided to understand surgical indications and the process for choosing a surgical procedure based on the physiology of pulmonary function.
	2nd year	Students deepen their understanding of treatment methods for pulmonary malignancies and receive guidance to identify current problems and future issues based on analysis of clinical data. The course aims to teach the effectiveness of multidisciplinary treatments combining cancer pharmacotherapy and radiotherapy and the merits of minimally invasive surgery, leading to an integrated understanding of surgical treatments in pulmonary medicine.

Advisor(s)		Lecture Topics
Professor Naoya Hashimoto (Neurosurgery)	1st year	In neurosurgical field, it is important to make an accurate diagnosis and treat the patients promptly before irreversible neurological damage occurs on the brain. Students learn the deep involvement of neurosurgery with emergency medicine and critical care.
	2nd year	In this course students will be introduced into neurosurgery as the surgical field specializing in treatment of disorders in the central and peripheral nervous systems. In particular, they learn how this field directly observes the brain, which controls life support function and forms the root of personality.
Professor Kenji Takahashi (Orthopaedics)	1st year	Students conduct literary reference research, collect resources, and conduct surveys on recent research trends regarding the symptoms, diagnosis, treatment, and rehabilitation of physical disorders of old age. Based on their findings, students plan and execute their own research, and conduct data analysis and examination with guidance from the faculty advisor.
	2nd year	Students execute the research plan configured in Special Research Project I and develop the study with guidance from the research advisor. Students constantly monitor current research trends and develop their study until they are able to present a solution to an important issue in the field of geriatric medicine.
(Rehabilitation Medicine)	1st year	
	2nd year	
Professor Chie Sotozono (Ophthalmology)	1st year	Based on an understanding of the structure and function of the eye and various ocular diseases, conduct research that leads to the elucidation of the pathogenesis of ocular diseases or the resolution of unmet needs. To this end, information is collected through literature and interviews to gain an understanding of the current situation and problems in each field.
	2nd year	Based on the information collected in the first year, research is carried out into new examinations, instruments or treatments that are currently being researched and developed, and the basic technologies that will be needed in the future are developed.
Professor Shigeru Hirano (Otolaryngology-Head and Neck Surgery)	1st year	Students are provided with research guidance for inner ear development and function, speech language function, swallowing function, and immunology in head and neck cancer. Students are guided for selection of the theme, review of literature, and methodology.

Advisor(s)		Lecture Topics
	2nd year	Based on the topics studied in Special Research Project I, students conduct research on communication impairment in hearing and speech, or head and neck immunology by mastering techniques of basic science research. Research for regenerative medicine is also provided for regeneration of head and neck regions including the larynx, and swallowing oragans.
Professor Osamu Ukimura (Urology)	1st year	Prevention and early diagnosis are important as measures against the cancer that is increasing in an aging society. In particular, diagnostic methods for applying of target molecules (markers) specific to each cancer; in this course, students receive research guidance to study target molecules and precision medicine in the urology. In addition, students receive research guidance in the area of regenerative medicine and cytohistologically analysis, in which clinical applications have increased in recent years. Furthermore, students will have opportunity of research related to IT technologies such as artificial intelligence (AI) and Augmented reality/virtual reality (AR/VR).
	2nd year	Students receive research guidance on a topic covered in Year 1 concerning molecular-targeted diagnosis and/or therapies for urological cancer. In addition, the course guides students to conduct research about precision medicine in the urology as well as research related to IT technologies such as artificial intelligence (AI) and Augmented reality/virtual reality (AR/VR).
Professor Fumimasa Amaya (Anesthesiology /Palliative Medicine)	1st year	Students are provided with research guidance related to topics such as the diversity of pain not commonly understood ("pain I want people to understand"), the onset mechanism of various types of pain, establishment of treatment methods based on mechanism, diagnoses based on type of pain, and considerations stemming from the causes of cancer pain.
	2nd year	This course guides students in using the basic knowledge acquired about pain in Special Research Project I to conduct statistical processing and thesis preparation to clarify the predictive factors for various types of pain, such as the mechanism of neuropathic pain onset; intractable chronic pain, such as refractory cancer pain; and complex regional pain syndrome (CRPS).

#### **Testing Center Access Map**

