the Graduate Program for Medical Innovation Guideline

2025

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京都大学
メディカルイノベーション大学院プログラム
Kyoto University Graduate Program for Medical Innovation

Objectives

＜List of Courses＞

1. Outline of the program

In order for medical and healthcare innovation in Japan to be accelerated and disseminated worldwide, a system for training outstanding personnel capable of undertaking cutting-edge research and development, needs to be established strategically. Based on this idea, the Graduate Program for Medical Innovation aims to train both MD (medical doctor) students and non-MD students to be medical innovators with a global mindset. This will be achieved through collaboration between accomplished medical, pharmaceutical, and health science researchers at Kyoto University.

Kyoto University has been pursuing the world's highest level of research and has produced internationally-recognized researchers including Nobel laureates. Curriculums that take advantage of this research-based strength of the university have been established by the Graduate School of Medicine, Graduate School of Pharmaceutical Sciences, Center for iPS Cell Research and Application (CiRA), and Institute for the Advanced Study of Human Biology (ASHBi), operating under the World Premier International Research Initiative (WPI).

This program is a 5-year doctoral program. For students who fulfill the requirements for completion of the program in addition to attending and completing the curriculum in their departments, a statement certifying the completion of the Graduate Program for Medical Innovation will be added to the student's diploma.

2. Features of the curriculum

Unlike conventional core courses, students in the program can take "core medical education courses" and "Graduate Courses for Integrated Research Training (GCIRT)" that fit their background and research objectives to customize their education. The requirements for courses and number of credits specified by each graduate school, which are also required for completion of the program, should still be met.

GCIRT offer the colloquium-type lectures and exercises in English without being bound by the division of student's laboratory.

In "core medical education courses", students will acquire systematic knowledge and concepts of basic medicine by taking courses according to their backgrounds.

In "Group of courses for career development and improvement of skills" show students various career paths that have not been covered by conventional medical education. To help students acquire the knowledge and ideas required for becoming next-generation innovators, lecturers are invited from external partner organizations and companies.

3. Program Completion Requirements

Students must satisfy the following requirements to complete the Graduate Program for Medical Innovation (MIP).

(1) Must satisfy the complete requirements of their graduate school
(2) Must complete 6 credits in minimum in "Graduate Courses for Integrated Research Training".
Students are required to continue to participate in Graduate Courses for Integrated Research Training after they have obtained the credits required for completion of the Course.

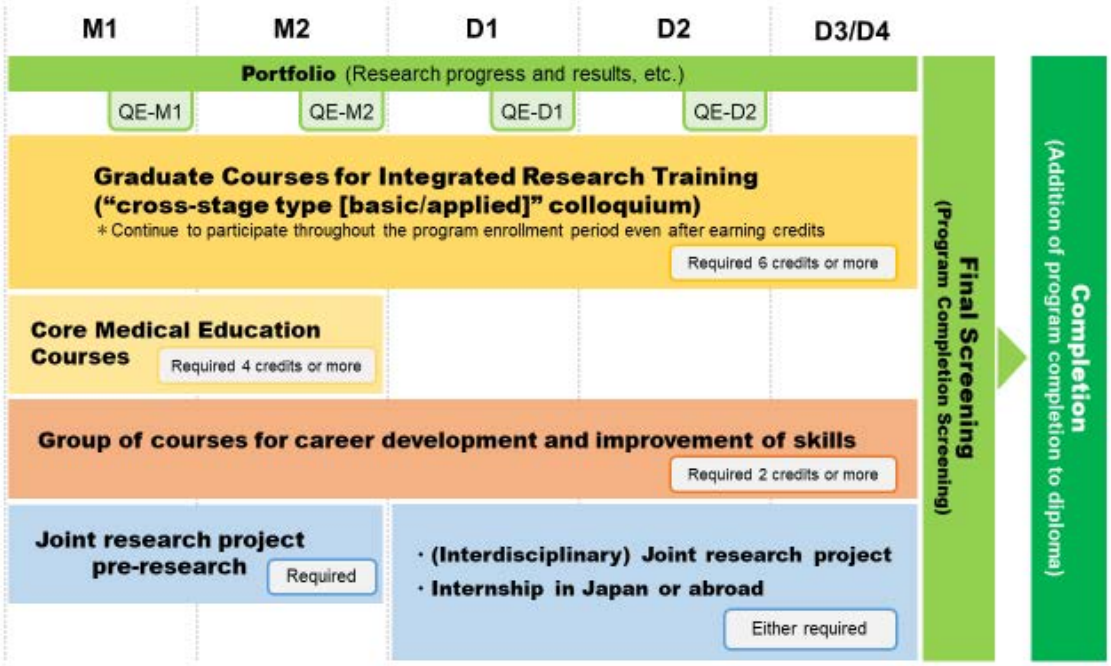
(3) Must complete 4 credits in minimum in courses of “Core Medical Education Courses”

* Student who have taken the courses in “Core Medical Education Courses” or their equivalent may be exempt from courses in “Core Medical Education Courses”
* International students allowed to take courses designated by the program provided in English by Liberal Arts and general education as the alternative for courses of “Core Medical Education Courses”.

(4) Must complete 2 credits in minimum in courses of “Group of courses for career development and improvement of skills”

(5) Must complete either “Internship in Japan or abroad” or “(Interdisciplinary) Joint research project”

(6) Must pass the final screening of the Graduate Program for Medical Innovation



*QE is conducted from D1 to D4 for the 5-year doctoral course students.

4. Qualifying Examination（QE）

Multiple supervisors conduct qualifying examinations at multiple stages.

5. Program Final Screening and Certification

Students will give a presentation on the research of their dissertation and answer questions. In addition, the student will discuss and evaluate measures to return the research results to society. Based on the above, it is evaluated that the student has the academic knowledge and research ability appropriate for completion of the program, a statement certifying the completion of the Graduate Program for Medical Innovation will be added to the student’s diploma.

6. Course Information

6-1. Group of core courses

(1) Graduate Courses for Integrated Research Training (GCIRT)

Must complete 6 credits in minimum in “Graduate Courses for Integrated Research Training”. Students are required to continue to participate in Graduate Courses for Integrated Research Training after they have obtained the credits required for completion of the Course.

If you are planning to register for multiple courses, specify your principal course. If you are selected, your evaluation will be based on the activities in the principal course you specified. The faculty staff in the course you specified will be your supervisor for this program.

(2) Core Medical Education Courses

Must complete 4 credits in minimum in courses of “Core Medical Education Courses”

* All graduates of medical schools in Japan are exempted from taking “Core Medical Education Courses”.
* Student who have taken the courses in “Core Medical Education Courses” or their equivalent may be exempt from courses in “Core Medical Education Courses”
* International students allowed to take courses designated by the program provided in English by Liberal Arts and general education as the alternative for courses of “Core Medical Education Courses”. If you wish to take these courses, please check the syllabus of the KULASIS (Liberal Arts and general education) and register for it by KLASIS.

6-2. Group of courses for career development and improvement of skills

Must complete 2 credits in minimum in courses of “Group of courses for career development and improvement of skills”.

Students may take this course in any year, but it is recommended that they take it after taking the “Group of core courses.

However, it is recommended that students take the " Frontier type Human Resource Development in Medical Science " as early as possible, as it provides important team building and communication skills for research.

International students can count the credits earned by taking "ILAS Seminar-E2 :Ethical issues in health sciences" or "ILAS Seminar-E2 :Critical thinking and Communication skills" as credits of “Group of courses for career development and improvement of skills “. If you wish to take these courses, please check the syllabus of the KULASIS (Liberal Arts and general education) and register for it by KLASIS. Note that advance registration is required for ILAS seminars.

* The above ILAS Seminar subjects will not be held in 2025.

6-3. (Interdisciplinary) Joint research project、Internship

Students are required to participate in either an Interdisciplinary Joint Research project or an overseas or domestic internship.

6-4. Credits earned prior to the start of the program

Students of the special selection for the second year and the transfer to the third year who have earned credits in the Group of core courses and Group of courses for career development and improvement of skills before starting this program will be counted as credits earned in this program.

6-5. Grading criteria, objections and appeals regarding grading

The rules of the department offering the subject shall apply.

7. Portfolio

Students enrolled in this program will be required to fill in the portfolio system of their research progress and results (papers, conference presentations, etc.). The portfolio will be used for QE and the selection of financial aid such as RF.

8. Financial Support

There is a system for providing Research Fellows (RF) compensation to students in a doctorate course, in a 4-year doctorate course or in 3rd year or later of a 5-year doctoral course after selection. The compensation is approximately 100,000 yen per month. The details of this financial support are subject to change.

9. Contact information

MIP Office, Graduate School of Medicine, Kyoto University
Room 111, 1st Floor, Faculty of Medicine Bldg. C, Faculty of Medicine Campus
Yoshida-Konoe-cho, Sakyo-ku, Kyoto 606-8501, JAPAN
Phone: 075-753-9334
E-mail: takuetsu-med@mail2.adm.kyoto-u.ac.jp
URL: https://www.mip.med.kyoto-u.ac.jp/en/

List of courses (For Master's , Latter doctoral and 5-year Doctoral Course)

Please check the syllabus at KULASIS (Graduate School of Medicine (Medicine/Medical Sciences/Pabulic Health) https://www.k.kyoto-u.ac.jp/internal/g/med/syllabus/top).
For No.11-13 of the graduate education courses , "Legal system in medical information", and "Medical Engineering for Society", please check the syllabus at KULASIS (Graduate School of Medicine (Human Health Sciences) https://www.k.kyoto-u.ac.jp/internal/g/medh/syllabus/top)
For No.14 of the graduate education courses, please check the syllabus at KULASIS (Graduate School of Pharmaceutical Sciences https://www.k.kyoto-u.ac.jp/internal/g/p/syllabus/top)
The detailed schedule of "Core Medical Education Courses " will be available on the website of the Kyoto University Graduate School of Medicine before the beginning of each semester.

Group	Course	Course title	Target year	Semester	Number of credits		Course code	
					Required	Elective		
Group of core courses	Graduate Courses for Integrated Research Training		1～5	Full-Year	6		Refer to Page 8	Seminar 4 credits Practice 2 credits
	Core Medical Education Courses	Essential Anatomy	1	First semester		2	E060000	4 credits in minimum * Student who have taken the courses in “Core Medical Education Courses” or their equivalent may be exempt from courses in “Core Medical Education Courses” * International students allowed to take courses designated by the program provided in English by Liberal Arts and general education as the alternative for courses of “Core Medical Education Courses”. * Student who have completed the “Fundamentals of Biostatistics” course by the 2024 academic year will not be able to count credits for “Fundamentals of Biomedical Data Science” towards the required credits for “Core Medical Education Courses”, even if completing it.
		Essential Physiology I	1	First semester		2	E061000	
		Essential Physiology II	1	First semester		2	E062000	
		Essential General Pathology	1	First semester		2	E064000	
		Histology	1	Second semester		2	E003000	
		Embryology and Developmental Biology	1	Second semester		2	E004000	
		Physiology I	1	Second semester		2	E006000	
		Physiology II	1	Second semester		4	E007000	
		Neuroscience	1	Second semester		6	E027000	
		Brain dissection training	1	Second semester		1	E036000	
		Microbiology I	1	Second semester		2	E010000	
		Microbiology II	1	Second semester		4	E011000	
		Immunology	1	First semester		4	E009000	
		General Pathology II	1	First semester		4	E012000	
		Pharmacology I	1	First semester		2	E015000	
		Pharmacology II	1	First semester		4	E016000	
		Legal Medicine I	1	First semester		2	E013000	
		Legal Medicine II	1	First semester		4	E014000	
		Medical Genetics	1	First semester		2	E031000	
		Social, Environmental and Preventive Medicine	1	First semester		2	E021000	
		Fundamentals of Biomedical Data Science	1	First semester		2	H174000	
		Health IT Law and Ethics	1	Second semester		2	M050M01	
Group of courses for career development and improvement of skills		Frontier type Human Resource Development in Medical Science	1～5	Second Semester (Irregular)		2	Z206000	2 credits in minimum * Student who have taken the course in “Brain Science Training Program” will be evaluated as having completed the course for career development and improvement of skills
		Introduction to Drug Discovery and Development	1～5	Full-Year (Irregular)		2	E037000	
		Medical Engineering for Society	1～5	Second Semester (Intensive)		2	M046000	
		Global health	1～5	Second semester		2	Z203000	
		Translational & Clinical Research Management	1～5	Full-Year		2	E068000	
		Healthcare Innovation Design Entrepreneurship Program	1～5	Full-Year (Intensive)		2	Z102000	
		Brain Science Training Program	1～5	–	–	–	–	

List of courses (For 4year doctoral Course)

Please check the syllabus at KULASIS (Graduate School of Medicine (Medicine/Medical Sciences/Pabulic Health) https://www.k.kyoto-u.ac.jp/internal/g/med/syllabus/top).
For No.11-13 of the graduate education courses , "Legal system in medical information", and "Medical Engineering for Society", please check the syllabus at KULASIS (Graduate School of Medicine (Human Health Sciences) https://www.k.kyoto-u.ac.jp/internal/g/medh/syllabus/top)
For No.14 of the graduate education courses, please check the syllabus at KULASIS (Graduate School of Pharmaceutical Sciences https://www.k.kyoto-u.ac.jp/internal/g/p/syllabus/top)
The detailed schedule of "Core Medical Education Courses " will be available on the website of the Kyoto University Graduate School of Medicine before the beginning of each semester.

Group	Course	Course title	Target year	Semester	Number of credits		Course code	
					Required	Elective		
Group of core courses	Graduate Courses for Integrated Research Training		1～4	Full-Year	6		Refer to Page 8	Seminar 4 credits Practice 2 credits
	Core Medical Education Courses	Essential Anatomy	1	First semester		2	E060000	4 credits in minimum * Student who have taken the courses in “Core Medical Education Courses” or their equivalent may be exempt from courses in “Core Medical Education Courses” * International students allowed to take courses designated by the program provided in English by Liberal Arts and general education as the alternative for courses of “Core Medical Education Courses”. * Student who have completed the “Fundamentals of Biostatistics“ course by the 2024 academic year will not be able to count credits for “Fundamentals of Biomedical Data Science“ towards the required credits for “Core Medical Education Courses”, even if completing it.
		Essential Physiology I	1	First semester		2	E061000	
		Essential Physiology II	1	First semester		2	E062000	
		Essential General Pathology	1	First semester		2	E064000	
		Histology	1	Second semester		2	E003000	
		Embryology and Developmental Biology	1	Second semester		2	E004000	
		Physiology I	1	Second semester		2	E006000	
		Physiology II	1	Second semester		4	E007000	
		Neuroscience	1	Second semester		6	E027000	
		Brain dissection training	1	Second semester		1	E036000	
		Microbiology I	1	Second semester		2	E010000	
		Microbiology II	1	Second semester		4	E011000	
		Immunology	1	First semester		4	E009000	
		General Pathology II	1	First semester		4	E012000	
		Pharmacology I	1	First semester		2	E015000	
		Pharmacology II	1	First semester		4	E016000	
		Legal Medicine I	1	First semester		2	E013000	
		Legal Medicine II	1	First semester		4	E014000	
		Medical Genetics	1	First semester		2	E031000	
		Social, Environmental and Preventive Medicine	1	First semester		2	E021000	
		Fundamentals of Biomedical Data Science	1	First semester		2	H174000	
		Health IT Law and Ethics	1	Second semester		2	M050M01	
Group of courses for career development and improvement of skills		Frontier type Human Resource Development in Medical Science	1～5	Second Semester (Irregular)		2	Z206000	2 credits in minimum * Student who have taken the course in “Brain Science Training Program” will be evaluated as having completed the course for career development and improvement of skills
		Introduction to Drug Discovery and Development	1～5	Full-Year (Irregular)		2	E037000	
		Medical Engineering for Society	1～5	Second Semester (Intensive)		2	M046000	
		Global health	1～5	Second semester		2	Z203000	
		Translational & Clinical Research Management	1～5	Full-Year		2	E068000	
		Healthcare Innovation Design Entrepreneurship Program	1～5	Full-Year (Intensive)		2	Z102000	
		Brain Science Training Program	1～5	–	–	–	–	

List of courses (For students of Transfer to the third year)

Please check the syllabus at KULASIS (Graduate School of Medicine (Medicine/Medical Sciences/Pabulic Health) https://www.k.kyoto-u.ac.jp/internal/g/med/syllabus/top).
For No.11-13 of the graduate education courses , "Legal system in medical information", and "Medical Engineering for Society", please check the syllabus at KULASIS (Graduate School of Medicine (Human Health Sciences) https://www.k.kyoto-u.ac.jp/internal/g/medh/syllabus/top)
For No.14 of the graduate education courses, please check the syllabus at KULASIS (Graduate School of Pharmaceutical Sciences https://www.k.kyoto-u.ac.jp/internal/g/p/syllabus/top)
The detailed schedule of "Core Medical Education Courses " will be available on the website of the Kyoto University Graduate School of Medicine before the beginning of each semester.

Group	Course	Course title	Target year	Semester	Number of credits		Course code	
					Required	Elective		
Group of core courses	Graduate Courses for Integrated Research Training		3～5	Full-Year	6		Refer to Page 8	Seminar 4 credits Practice 2 credits
	Core Medical Education Courses	Essential Anatomy	3	First semester		2	E060000	4 credits in minimum * Student who have taken the courses in “Core Medical Education Courses” or their equivalent may be exempt from courses in “Core Medical Education Courses” * International students allowed to take courses designated by the program provided in English by Liberal Arts and general education as the alternative for courses of “Core Medical Education Courses”. * Student who have completed the “Fundamentals of Biostatistics“ course by the 2024 academic year will not be able to count credits for “Fundamentals of Biomedical Data Science“ towards the required credits for “Core Medical Education Courses”, even if completing it.
		Essential Physiology I	3	First semester		2	E061000	
		Essential Physiology II	3	First semester		2	E062000	
		Essential General Pathology	3	First semester		2	E064000	
		Histology	3	Second semester		2	E003000	
		Embryology and Developmental Biology	3	Second semester		2	E004000	
		Physiology I	3	Second semester		2	E006000	
		Physiology II	3	Second semester		4	E007000	
		Neuroscience	3	Second semester		6	E027000	
		Brain dissection training	3	Second semester		1	E036000	
		Microbiology I	3	Second semester		2	E010000	
		Microbiology II	3	Second semester		4	E011000	
		Immunology	3	First semester		4	E009000	
		General Pathology II	3	First semester		4	E012000	
		Pharmacology I	3	First semester		2	E015000	
		Pharmacology II	3	First semester		4	E016000	
		Legal Medicine I	3	First semester		2	E013000	
		Legal Medicine II	3	First semester		4	E014000	
		Medical Genetics	3	First semester		2	E031000	
		Social, Environmental and Preventive Medicine	3	First semester		2	E021000	
		Fundamentals of Biomedical Data Science	1	First semester		2	H174000	
		Health IT Law and Ethics	1	Second semester		2	M050M01	
Group of courses for career development and improvement of skills		Frontier type Human Resource Development in Medical Science	1～5	Second Semester (Irregular)		2	Z206000	2 credits in minimum * Student who have taken the course in “Brain Science Training Program” will be evaluated as having completed the course for career development and improvement of skills
		Introduction to Drug Discovery and Development	1～5	Full-Year (Irregular)		2	E037000	
		Medical Engineering for Society	1～5	Second Semester (Intensive)		2	M046000	
		Global health	1～5	Second semester		2	Z203000	
		Translational & Clinical Research Management	1～5	Full-Year		2	E068000	
		Healthcare Innovation Design Entrepreneurship Program	1～5	Full-Year (Intensive)		2	Z102000	
		Brain Science Training Program	1～5	–	–	–	–	

List of the Graduate Courses for Integrated Research Training

Each course consists of a seminar (4 credits) and a practicum (2 credits).
For No.1-9, please check the syllabus at KULASIS (Graduate School of Medicine (Medicine/Medical Sciences/Pabulic Health) https://www.k.kyoto-u.ac.jp/internal/g/med/syllabus/top).
For No.10-12, please check the syllabus at KULASIS (Graduate School of Medicine (Human Health Sciences) https://www.k.kyoto-u.ac.jp/internal/g/medh/syllabus/top) .
For No.13 of the graduate education courses, please check the syllabus at KULASIS (Graduate School of Pharmaceutical Sciences https://www.k.kyoto-u.ac.jp/internal/g/p/syllabus/top).
Further information on the Graduate Courses for Integrated Research Training is available on the website of the Kyoto University Graduate School of Medicine.

No.	Name of Course	Course code	Remark
1	Cell, Developmental and Systems Biology	E054000(Seminar for Master's Program) E055000(Practice for Master's Program) P029000(Seminar for Doctoral Program) P030000(Practice for Doctoral Program)	
2	Immunology, Allergy and Infection	E038000(Seminar for Master's Program) E039000(Practice for Master's Program) P005000(Seminar for Doctoral Program) P006000(Practice for Doctoral Program)	
3	Cancer	E040000(Seminar for Master's Program) E041000(Practice for Master's Program) P007000(Seminar for Doctoral Program) P008000(Practice for Doctoral Program)	
4	Neuroscience	E042000(Seminar for Master's Program) E043000(Practice for Master's Program) P011000(Seminar for Doctoral Program) P012000(Practice for Doctoral Program)	
5	Metabolic Syndrome, Aging and Metabolic Medicine	E044000(Seminar for Master's Program) E045000(Practice for Master's Program) P013000(Seminar for Doctoral Program) P014000(Practice for Doctoral Program)	
6	Regeneration Medicine and Organ Reconstruction	E046000(Seminar for Master's Program) E047000(Practice for Master's Program) P015000(Seminar for Doctoral Program) P016000(Practice for Doctoral Program)	
7	Pathology and Pathophysiology	P017000(Seminar for Doctoral Program) P018000(Practice for Doctoral Program)	*Only for doctorate course or latter doctoral course students.
8	Public Health and clinical Epidemiology Research	E066000(Seminar for Master's Program) E067000(Practice for Master's Program) P033000(Seminar for Doctoral Program) P034000(Practice for Doctoral Program)	
9	Medical Engineering and Physics	E052000(Seminar for Master's Program) E053000(Practice for Master's Program) P027000(Seminar for Doctoral Program) P028000(Practice for Doctoral Program)	
10	Digital Transformation of Healthcare	E069000(Seminar for Master's Program) E070000(Practice for Master's Program) P035000(Seminar for Doctoral Program) P036000(Practice for Doctoral Program)	
11	caring sciences	M052001(Seminar) M053001(Practice)	This course is offered as a master's course, but students in the doctoral program can also choose it.
12	Rehabilitation Medicine	M052002(Seminar) M053002(Practice)	
13	Artificial intelligence in medicine	M052003(Seminar) M053003(Practice)	
14	Medicinal Fundamental Sciences	0960000(Seminar) 0961000(Practice)	*Only for doctorate course, latter doctoral course, or 5-year doctoral course students.

Courses provided in English

Please check the syllabus at KULASIS (Liberal Arts)(https://www.k.kyoto-u.ac.jp/internal/la/syllabus/top).

Group	Course	Course title	Target year	Semester	Number of credits		Remark
					Required	Elective	
Group of core courses	Core Medical Education Courses	Principles of Genetics-E2	1	First semester		2	
		Introduction to Molecular Biotechnology-E2	1	First semester		2	
		Introduction to Biochemistry-E2	1	Second semester		2	
		Introduction to Behavioral Neuroscience A-E2	1	First semester		2	
		Introductory Statistics-E2	1	First semester		2	
		Introduction to Behavioral Neuroscience B-E2	1	Second semester		2	
		Introduction to Medical Psychology-E2	1	Second semester		2	
		Nutrition and Health-E2	1	–		2	Not offered in FY2025
		Biology and Sociology of Chronic Diseases-E2	1	–		2	Not offered in FY2025
Group of courses for career development and improvement of skills		Global health	1	Second semester		2	
		Brain Science Training Program	1	–	–	–	Student who have taken the course in “Brain Science Training Program” will be evaluated as having completed the course for career development and improvement of skills

※For students of Transfer to the third year, the target year is "3".