

Doctoral Program in Biomedical Sciences

Common Subjects

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW001	Initiation Seminar for Career Path	1	1.0	1, 2	SprA	Intensive		Mitsuyasu Kato	In this first course of the Doctoral program in Biomedical Science, the students study the aims and objectives of the program, curriculum policies, lineups and time tables of the curriculum, and possible research topics in the program. In the career path seminar, the students convince a wide variety of possible future careers through lectures by guest lecturers, have discussions with their classmates, and then make study plans for the program.	Compulsory (Choose either)
02EW037	Initiation Seminar for Career Path	1	1.0	1, 2	FallA	Intensive		Mitsuyasu Kato	In this first course of the Doctoral program in Biomedical Science, the students study the aims and objectives of the program, curriculum policies, lineups and time tables of the curriculum, and possible research topics in the program. In the career path seminar, the students convince a wide variety of possible future careers through lectures by guest lecturers, have discussions with their classmates, and then make study plans for the program.	Compulsory (Choose either)
02EW002	Introduction to Medical Research	1	1.0	1, 2	SprAB	Thu/Fri 7, 8	4A203	Ken-ichi Yagami	This course provides the opportunities for the students to learn the essential knowledge of the physical- and chemical-hazard, bio-hazard, information security, research ethics, and legal requirements, and also to understand how to use the research facilities and equipments on biomedical research.	Compulsory
02EW003	Seminar in Medical Sciences	2	3.0	1, 2	Annual	by appointment		Chair of Biomedical Sciences	In addition to approximately 30 seminars conducted by part-time lecturers throughout the year, students attend medical system research seminars, etc., conducted by instructors in their respective fields, and participate in question-and-answer (Q&A) sessions with the lecturers.	Compulsory
02EW004	Special Studies on Medical Sciences	2	2.0	1, 2	Annual	by appointment		Chair of Biomedical Sciences	Fundamental knowledge required to establish PhD research theme is instructed by the research supervisor individually, in addition to the methods to obtain this knowledge. The PhD research theme and experimental procedure are determined through discussion with the supervisor. Applications required for the PhD research are processed, and the plan up to the completion of the PhD research is made.	Compulsory
02EW005	Special Seminar in Medical Sciences	2	5.0	1, 2	Annual	by appointment		Chair of Biomedical Sciences	Students in the course of Special practice in Medical Sciences will learn how to analyze the research results and understand the significance of the results under the supervision of professors. Students will also plan and perform the next research experiment and repeat this cycle.	Compulsory
02EW031	Technical English in Medical Sciences	2	2.0	1, 2	Annual	by appointment		Flaminia Miyamasu	Students will first learn the basic principles of scientific writing style and composition. They will then apply these principles by writing and editing their own research papers.	
02EW021	Medical and Scientific Communication I		1.0	1, 2	SprABC	by appointment		Kiong Ho	A literature-based, seminar-type course for the students to evaluate and review the latest scientific breakthrough in Medical Sciences. The goal of this course is for students to develop the proficiency they need to effectively and energetically communicate their professional achievements within the international scientific community. Students in this course will practice scientific reading, presentation and feedback on their performance from peers and instructors.	

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02EW022	Medical and Scientific Communication II		3.0	2, 3	Annual	by appointment		Chair of Biomedical Sciences	In this subject, students present and discuss about their researches in international conferences in English. They also need to make questions to presentations given by other speakers, and discuss about their researches.	
02EW033	Research Presentation and Discussion	2	1.0	2, 3	SprABC	Wed2		Hiroyuki Suzuki, Brian Karl Purdue	Invited speakers and students give presentation about their research and discuss them in English	
02EW007	International practical medical science	1	3.0	1 - 4	Annual	by appointment		Yoshito Kumagai	Through presentations of research results at international academic conferences and training abroad, students acquire language ability and learn presentation methods while experiencing internationally recognizable research by holding discussions with researchers overseas. Furthermore, students actively participate in educational research abroad and discussions as well as practice teaching in English.	
02EW010	Training in Medical Science Education	3	1.0	2, 3	Annual	by appointment		Chair of Biomedical Sciences	In this subject, students firstly need to understand i) the objectives of the student education promoted by faculty, and ii) the role of each course toward achieving the objectives. Then, the students will join in iii) preparing the syllabus of a certain course together with supervisors, iv) give lecture in the course, and v) evaluate participants in the course. The students will be evaluated by the participants of the course which you will join in.	
02EW034	International Discussion on Medical Sciences I	2	2.0	1	SprABC	Fri1-3		Kenji Irie, Ryosuke Ohniwa	Focusing on molecular biology of the cell, International discussion on medical sciences I provides the opportunities for the students to have interactive online distance learning with the National Taiwan University and the Kyoto University, and to be engaged in thesis presentation and discussion conducted in English. In this course, the students should be able to understand basic knowledge of life sciences and acquire scientific communication skills in English.	
02EW035	International Discussion on Medical Sciences II	2	2.0	1	FallABC	Wed1-3		Kenji Irie, Ryosuke Ohniwa	Focusing on molecular biology of the cell, International discussion on medical sciences II provides the opportunities for the students to have interactive online distance learning with the National Taiwan University and the Kyoto University, and to be engaged in thesis presentation and discussion conducted in English. In this course, the students should be able to understand basic knowledge of life sciences and acquire scientific communication skills in English.	
02EW008	Advanced Seminar in Medical Sciences	1	3.0	1, 2	Annual	by appointment		Yoshito Kumagai	Students attend lectures about the new concepts and technologies underlying research in the post-genome-era medical and biological sciences and conduct discussions on their contents.	Lectures are conducted in Japanese
02EW009	Lecture on Critical Path Research Management	1	2.0	1, 2	FallABC	Mon6, 7	4F204	Koichi Hashimoto, Osamu Ohneda, Masumi Nagano	This course aims to equip students with an understanding the process of critical path research and translational research, using to translate the finding in basic research more quickly and efficiently into medical practice.	

Specialized Sciences

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW101	Lectures in Biomedical Research	1	1.0	1, 2	FallABC	Wed7		Chair of Biomedical Sciences	Lecture in Biomedical Sciences provides the opportunities for the students to learn the ongoing researches performed in the doctoral programs of Biomedical Sciences and discuss the research contents in English. The students consider the relationship between these subjects and their own research and make reports on it.	Compulsory

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02EW401	Lecture in Molecular Medical Sciences I	1	2.0	1, 2	SprABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW402	Lecture in Molecular Medical Sciences II	1	2.0	1, 2	FallABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW403	Seminar in Molecular Medical Sciences I	2	2.0	1, 2	SprABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This seminar is aimed to understand the purpose, methods, and results of latest articles related to Anatomy and Embryology, Reproductive Biochemistry, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics. They also discuss the significances, problems, and future directions of the study.	
02EW404	Seminar in Molecular Medical Sciences II	2	2.0	1, 2	FallABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This seminar is aimed to understand the purpose, methods, and results of latest articles related to Anatomy and Embryology, Reproductive Biochemistry, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics. They also discuss the significances, problems, and future directions of the study.	
02EW405	Laboratory in Molecular Medical Sciences I	3	2.0	1, 2	SprABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This course is aimed to learn the principles and methods of experiments and analysis for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics.	

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02EW406	Laboratory in Molecular Medical Sciences II	3	2.0	1, 2	Fall/ABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This course is aimed to learn the principles and methods of experiments and analysis for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics.	
02EW407	Lecture in Molecular Medical Sciences I	1	2.0	1, 2	Spr/ABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW408	Lecture in Molecular Medical Sciences II	1	2.0	1, 2	Fall/ABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW409	Laboratory in Molecular Medical Sciences I	3	2.0	1, 2	Spr/ABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This course is aimed to learn the principles and methods of experiments and analysis for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics.	
02EW410	Laboratory in Molecular Medical Sciences II	3	2.0	1, 2	Fall/ABC	by appointment		Koji Hisatake, Kenji Irie, Ken Nishimura, Yasunori Kanaho, Masayuki Masu, Satoru Takahashi, Shunsuke Ishii, Yukio Nakamura, Keiji Tanaka	This course is aimed to learn the principles and methods of experiments and analysis for research on Anatomy and Embryology, Molecular Cell Biology, Gene Regulation, Physiological Chemistry, Molecular Neurobiology, Molecular Behavioral Genetics, and Molecular Genetics.	

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW411	Lecture in Human Medical Biology I	1	2.0	1, 2	SprABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiko Sugiyama	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW412	Lecture in Human Medical Biology II	1	2.0	1, 2	FallABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiko Sugiyama	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW413	Seminar in Human Medical Biology I	2	2.0	1, 2	SprABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiko Sugiyama	This seminar is aimed to understand the purpose, methods, and results of latest articles related to pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics. They also discuss the significances, problems, and future directions of the study.	

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02EW414	Seminar in Human Medical Biology II	2	2.0	1, 2	Fall IABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	This seminar is aimed to understand the purpose, methods, and results of latest articles related to pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics. They also discuss the significances, problems, and future directions of the study.	
02EW415	Laboratory in Human Medical Biology I	3	2.0	1, 2	Spr ABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	This course is aimed to learn the principles and methods of experiments and analysis for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics.	
02EW416	Laboratory in Human Medical Biology II	3	2.0	1, 2	Fall IABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	This course is aimed to learn the principles and methods of experiments and analysis for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics.	

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02EW417	Lecture in Human Medical Biology I	1	2.0	1, 2	SprABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW418	Lecture in Human Medical Biology II	1	2.0	1, 2	FallABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW419	Laboratory in Human Medical Biology I	3	2.0	1, 2	SprABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	This course is aimed to learn the principles and methods of experiments and analysis for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics.	

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02EW420	Laboratory in Human Medical Biology II	3	2.0	1, 2	Fall IABC	by appointment		Ken-ichi Yagami, Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Akira Shibuya, Osamu Ohneda, Koji Tsuboi, Takeji Sakae, Atsushi Kawaguchi, Ryosuke Ohniwa, Kiong Ho, Tadachika Koganezawa, Hirotooshi Miyoshi, Fumihiro Sugiyama	This course is aimed to learn the principles and methods of experiments and analysis for research on pathology, immunology, infection biology, stem cell biology and biomedical engineering, animal models for human diseases, radiation life science and medical physics.	
02EW421	Lecture in Genome and Environmental Medicine I	1	2.0	1, 2	Spr ABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeuki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of classes in which how to design and conduct research and interpret the findings is discussed. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. The students are requested to present their own research plans and findings, followed by discussion by staff members and all attending students. In some laboratories, lectures pertinent to these issues will be given.</p> <p>Each student is required to attend the classes given by his/her research supervisor, as well as at least one series of classes given by other laboratories belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the lectures for the genome and environmental medicine). Attendance at 20 classes is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the lectures held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	
02EW422	Lecture in Genome and Environmental Medicine II	1	2.0	1, 2	Fall IABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeuki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of classes in which how to design and conduct research and interpret the findings is discussed. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. The students are requested to present their own research plans and findings, followed by discussion by staff members and all attending students. In some laboratories, lectures pertinent to these issues will be given.</p> <p>Each student is required to attend the classes given by his/her research supervisor, as well as at least one series of classes given by other laboratories belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the lectures for the genome and environmental medicine). Attendance at 20 classes is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the lectures held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	

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02EW423	Seminar in Genome and Environmental Medicine I	2	2.0	1, 2	SprABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shige-uki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of seminars in which students present and critically discuss latest scientific papers related to their research interest. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. In the Laboratory of Public Health Medicine, the students actually participate in the preventive medicine activities in the community (optional). Each student is required to attend the seminars given by his/her research supervisor, as well as at least one series of seminars given by other staff members belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the seminars for the genome and environmental medicine). Attendance at 20 seminars is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the seminars held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	
02EW424	Seminar in Genome and Environmental Medicine II	2	2.0	1, 2	FallABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shige-uki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of seminars in which students present and critically discuss latest scientific papers related to their research interest. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. In the Laboratory of Public Health Medicine, the students actually participate in the preventive medicine activities in the community (optional). Each student is required to attend the seminars given by his/her research supervisor, as well as at least one series of seminars given by other staff members belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the seminars for the genome and environmental medicine). Attendance at 20 seminars is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the seminars held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	
02EW425	Laboratory in Genome and Environmental Medicine I	3	2.0	1, 2	SprABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shige-uki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a workshop on basic principles and methods in experimental or laboratory analyses related to the genomic factors, environmental factors and their interactions.</p> <p>Each student is required to attend the workshop given by his/her research supervisor. In addition, he/she can take other workshop(s) given by other laboratories belonging to the Doctoral Program in Biomedical Sciences.</p> <p>Please be sure to contact the responsible faculty members when attending the workshops held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	

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02EW426	Laboratory in Genome and Environmental Medicine II	3	2.0	1, 2	Fall/ABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeoyuki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a workshop on basic principles and methods in experimental or laboratory analyses related to the genomic factors, environmental factors and their interactions.</p> <p>Each student is required to attend the workshop given by his/her research supervisor. In addition, he/she can take other workshop(s) given by other laboratories belonging to the Doctoral Program in Biomedical Sciences.</p> <p>Please be sure to contact the responsible faculty members when attending the workshops held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	
02EW427	Lecture in Genome and Environmental Medicine I	1	2.0	1, 2	Spr/ABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeoyuki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of classes in which how to design and conduct research and interpret the findings is discussed. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. The students are requested to present their own research plans and findings, followed by discussion by staff members and all attending students. In some laboratories, lectures pertinent to these issues will be given.</p> <p>Each student is required to attend the classes given by his/her research supervisor, as well as at least one series of classes given by other laboratories belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the lectures for the genome and environmental medicine). Attendance at 20 classes is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the lectures held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	
02EW428	Lecture in Genome and Environmental Medicine II	1	2.0	1, 2	Fall/ABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeoyuki Kano, Ichiro Kurane	<p>In this course, each laboratory opens a series of classes in which how to design and conduct research and interpret the findings is discussed. The topics covered in this course include genomic factors, environmental factors and their interactions involved in diseases, as well as human adaptation to environment and its medical significance. The students are requested to present their own research plans and findings, followed by discussion by staff members and all attending students. In some laboratories, lectures pertinent to these issues will be given.</p> <p>Each student is required to attend the classes given by his/her research supervisor, as well as at least one series of classes given by other laboratories belonging to the Doctoral Program in Biomedical Sciences (not restricted to the laboratories who hold the lectures for the genome and environmental medicine). Attendance at 20 classes is required to earn 2 credits each semester.</p> <p>Please be sure to contact the responsible faculty members when attending the lectures held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.</p>	

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW429	Laboratory in Genome and Environmental Medicine I	3	2.0	1, 2	SprABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeyuki Kano, Ichiro Kurane	In this course, each laboratory opens a workshop on basic principles and methods in experimental or laboratory analyses related to the genomic factors, environmental factors and their interactions. Each student is required to attend the workshop given by his/her research supervisor. In addition, he/she can take other workshop(s) given by other laboratories belonging to the Doctoral Program in Biomedical Sciences. Please be sure to contact the responsible faculty members when attending the workshops held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.	
02EW430	Laboratory in Genome and Environmental Medicine II	3	2.0	1, 2	FallABC	by appointment		Naoyuki Tsuchiya, Yoshito Kumagai, Ichiyo Matsuzaki, Makoto Kobayashi, Emiko Noguchi, Yumiko Sakata, Yuriko Takata, Katsuya Honda, Kazumasa Yamagishi, Shigeyuki Kano, Ichiro Kurane	In this course, each laboratory opens a workshop on basic principles and methods in experimental or laboratory analyses related to the genomic factors, environmental factors and their interactions. Each student is required to attend the workshop given by his/her research supervisor. In addition, he/she can take other workshop(s) given by other laboratories belonging to the Doctoral Program in Biomedical Sciences. Please be sure to contact the responsible faculty members when attending the workshops held by laboratories other than yours, and to submit a required form to the Majors of Medical Sciences administration office by the deadline.	
02EW431	Lecture in Medical Science of Sleep I	1	2.0	1, 2	SprABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology, and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW432	Lecture in Medical Science of Sleep II	1	2.0	1, 2	FallABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology, and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW433	Seminar in Medical Science of Sleep I	2	2.0	1, 2	SprABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This seminar is aimed to understand the purpose, methods, and results of latest articles related to Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology. They also discuss the significances, problems, and future directions of the study.	
02EW434	Seminar in Medical Science of Sleep II	2	2.0	1, 2	FallABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This seminar is aimed to understand the purpose, methods, and results of latest articles related to Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology. They also discuss the significances, problems, and future directions of the study.	
02EW435	Laboratory in Medical Science of Sleep I	3	2.0	1, 2	SprABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This course is aimed to learn the principles and methods of experiments and analysis for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology and Molecular sleep biology.	
02EW436	Laboratory in Medical Science of Sleep II	3	2.0	1, 2	FallABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This course is aimed to learn the principles and methods of experiments and analysis for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology and Molecular sleep biology.	
02EW437	Lecture in Medical Science of Sleep I	1	2.0	1, 2	SprABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology, and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW438	Lecture in Medical Science of Sleep II	1	2.0	1, 2	Fall/ABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	To conduct research on development of prevention, diagnoses and treatments for human diseases, students should understand regulatory mechanisms of vital phenomena and pathogenic mechanisms at the individual and/or cellular levels based on concept of molecular biology. This lecture is aimed to take comprehensive knowledge required for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology, Molecular sleep biology, and medical physics through a presentation and discussion of the latest research results obtained in the affiliated laboratories.	
02EW439	Laboratory in Medical Science of Sleep I	3	2.0	1, 2	Spr/ABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This course is aimed to learn the principles and methods of experiments and analysis for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology and Molecular sleep biology.	
02EW440	Laboratory in Medical Science of Sleep II	3	2.0	1, 2	Fall/ABC	by appointment		Masashi Yanagisawa, Hiroshi Nagase, Noriki Kutsumura, Qinghua LIU, Masanori Sakaguchi, Michael Lazarus, Yoshihiro Urade	This course is aimed to learn the principles and methods of experiments and analysis for research on Molecular Pharmacology, Functional neuroanatomy, Medicinal Chemistry, Organic Chemistry, Biochemistry /Chemical Biology /Genetics, Sleep and Memory, Systems Sleep Biology and Molecular sleep biology.	
02EX290	Lecture in Epidemiology	1	2.0	1, 2	Fall/AB	Thu5, 6		Yukiko Wagatsuma, Masafumi Okada	医学研究で用いられるサンプリング手法、統計手法の理解及びその結果の正しい解釈ができ、自ら医学研究を計画したときに応用できるようになることを目標とする。	必修
02EW176	Environmental Health Perspective	1	3.0	1, 2	Fall/ABC	Wed5 Intensive		Yoshito Kumagai, Ichiyo Matsuzaki, Eiji Warabi, Shinichiro Sasahara, Shinkai Yasuhiro	・親電子性環境化学物質のケミカルバイオロジー ・化学修飾を受けたタンパク質を感知する細胞内品質管理システム	
02EW183	Lecture in Community Medicine, Theory and Practice	1	3.0	1	Annual	Wed6		Naoyuki Tsuchiya, Kazumasa Yamagishi	・生活習慣病の動態と国際比較 ・生活習慣病の危険因子分析とその解釈 ・地域における予防対策の評価方法	
02EW197	Lecture in Forensic Science and Medicine	1	3.0	1, 2	Annual	Tue1		Katsuya Honda	・内因性急死の発生機序の解明 ・DNA多型の個人識別への応用 ・薬毒物測定法の開発およびその応用 ・中毒のメカニズムの解明 ・中毒情報の収集とその解析	
02EW203	Lecture in International Medicine and Health	1	3.0	1, 2	Annual	Intensive		Shigeyuki Kano, Takashi Hamabata	地球規模での人口の動態、環境保全、貧富、文化に基づいた医療の問題を概説し、特に熱帯医学、国際感染症学、国際医療協力についての実例について演習し問題の解決策を策定する。	
02EW301	Lecture on Social Psychiatry and Mental Health	1	3.0	1, 2	Annual	Tue5	5Z743	Nobuaki Morita	児童虐待、犯罪、DV、被害者ケア、アルコール・薬物乱用、PTSDなどメンタルヘルスが関わる今日の社会問題を取りあげ、基礎知識および評価や介入の方法を習得する。	
02EW302	Lecture on Medical Care and Welfare	1	3.0	1, 2	Annual	by appointment		Hisako Yanagi	医療の高度化や人口の高齢化に伴い「チームケア」の重要性が高まっている。医療から生活支援を目的とする福祉への流れを理解するため、高齢者の疾病・障害の特徴、医療・福祉を支える多くの専門職種間の連携などを中心として学習する。	

Course Number	Course Name	Course Type	Credits	Standard Academic Year	Course Offering Term	Weekday and Period	Classroom	Instructor	Course Overview	Remarks
02EW303	Lecture on Health Care Policy and Management	1	3.0	1, 2	Annual	by appointment		Ichiro Okubo, Yasushi Honda, Masahide Kondo	保健医療政策学の基礎を修得するために、保健医療制度、医療供給体制、医療保険制度、国民医療費、環境保健政策等の現状とその課題を論じ、これらの分析に必要な基本的な研究方法を解説する。	
02EW304	Lecture on Health Services Research	1	3.0	1	Annual	Thu4		Nanako Tamiya	国内外のヘルスサービスリサーチに関するトピックスを紹介するとともに、仮説のたて方や研究デザインなど、それぞれの実現場で経験してきた問題点を検証していくために必要となる、ヘルスサービスリサーチの基礎の修得を目的とする。	