

Master's Program in Medical Sciences

共通基礎科目(フロンティア医科学専攻)

Course Number	Course Name	Instruc-tional Type	Credits	stand-ard regis-tration year	Term	Meeting Days, Per-iod etc.	Classro-om	Instructor	Course Overview	Remarks
01EQ001	Human Anatomy: Lecture	1	2.0	1	SprAB	Wed1, 2	4F204	Shiga Takashi, Takei Yosuke, Masuda Tomoyuki, Hamada Michito	1. 肉眼解剖学—人体についての骨学、筋学、脈管学、神経学、内臓学の基礎を学び、それらの知識が臨床分野にどのように応用されているかを理解する。 2. 顕微鏡解剖学—人体各器官の組織学・微細構造学を学び、各器官の機能する有様を細胞、更には分子レベルにおいて理解する。	【医物必修】電子・物理工学専攻「医工学コース」
01EQ002	Human Anatomy: Laboratory Course	3	1.0	1, 2	Sum Vac	Intensive	4A111	Shiga Takashi, Masuda Tomoyuki	人体構造を解剖標本の見学実習により正確に把握する。人体構造学概論を受講することを、履修の要件とする。	9/16, 17
01EQ045	Lecture in Human Physiology	1	1.0	1	SprA	Thu4, 5		Koganezawa Tadachika, Matsumoto Masayuki, Sakurai Takeshi, Kunimatsu Jun, Yamada Hiroshi	Systematic understanding of human physiological functions. Goal: Upon completion of this course, students will be able to discuss functional mechanisms on various human functions.	Lecture is conducted in English.
01EQ046	Topics in Biochemistry	1	1.0	1	SprAB	Mon1	4F204	Fukuda Aya, Irie Kenji, Hisatake Koji, Uchida Kazuhiko, Mizuno Tomoaki, Shiomi Kensuke, Keino-Masu Kazuko	ヒトの生理機能とその異常である疾患を分子レベルで研究する為に必要な生化学の基本的事項を学習する。	Lecture is conducted in English.
01EQ004	Clinical Medicine	1	2.0	1	Fall IAB	Tue1, 2	4F204	Shoda Junichi, Arai Tetsuaki, Isobe Tomonori, Kawakami Yasushi, Sakae Takeji, Takekoshi Kazuhiro, Sekine Ikuo, Nishiyama Hiroyuki, Suzuki Hideo, Matsumoto Isao, Mori Kensaku, Isobe Kazumasa, Ishii Kazuhiro, Obara Naoshi, Ohara Yusuke	臨床医学の実践とは病める人を対象として、その人の持つ問題点を抽出し、それを把握した上で、その人の価値観と決定に従って治療することである。そしてその患者に満足してもらい幸せになってもらうことを目指している。このような臨床医学の基本的事項と分化した各専門分野の現状についても理解する。	【橋必修】電子・物理工学専攻「医工学コース」 Online (Asynchronous)
01EQ005	Introduction to Social Medicine	1	2.0	1	SprAB	Thu1, 2		Ichikawa Masao, Kondo Masahide, Goshō Masahiko, Saito Tamaki, Tamiya Nanako, Honda Katsuya, Yamagishi Kazumasa, Wagatsuma Yukiko, Sasahara Shinichiro, Morita Nobuaki, Ito Tomoko, Ogai Yasukazu, Okubo Reiko, Sugano Yukiko, Togoobaatar Ganchimeg, Fukushige Mizuho, Hori Ai, Hori Daisuke	This course aims to equip students with an understanding of the broad determinants of health – income and poverty, education, environmental factors such as housing and transport – as well as health care and genetic influences and of the importance of a multi-disciplinary approach which includes medicine, epidemiology, statistics, economics, social science and many other subjects in improving population health.	【橋必修】【公必修】 【ヒ必修】電子・物理工学専攻「医工学コース」 Identical to OAS0507. Lecture is conducted in English. Online (Asynchronous)

01EQ007	Introduction to Epidemiology	1	1.0	1, 2	SprAB	Tue3	4F204	Wagatsuma Yukiko	Epidemiology is the study of factors affecting the health and illness of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine. The aim of this course is to learn the fundamental concepts and uses of epidemiology, and its role in formulating principles.	Lecture is conducted in English. In class and on demand (Hybrid)
01EQ008	Topics in Medical Science	1	1.0	1, 2	Sum Vac	by appointment		Irie Kenji	医学研究の最先端や基礎医学・臨床医学、社会医学の境界を超えた学際的なテーマについてトピックスを取り上げ希望によりコースを選択して学習する。各教員が研究者としてどのようなテーマに取り組んでいるかを学びながら、問題点を的確にとらえ、解決するための方法論、その識評価法、現代医学の限界や今後の展望について学習する。	9/6-9/10(予定)
01EQ010	Applied Medical Information Technology: Lecture	1	1.0	1	SprAB	Fri6	4F204	Ohara Makoto	Goal: Get an overview of the "electronic health record" (EHR) system. Understand medical information and an overview of the EHR system. Then, after understanding how medical information and its processing technology support scarce in modern Japan and support the functions of hospitals, we consider how we can develop medical care in the future, and consider the ideal medical practice plan. The latest knowledge will also be introduced.	
01EQ011	Biostatistics, Basic	1	1.0	1	SprAB	Wed3	4F204	Gosho Masahiko, Maruo Kazushi	This course aims to equip students with understanding basic statistical methods and with interpreting the analysis results, and with applying them for their medical studies. Students will learn statistical test, estimate, correlation, regression, analysis of variance, multivariate analysis, survival analysis.	【橋必修】 【公必修】 電子・物理工学専攻 「医工学コース」 Lecture is conducted in English.
01EQ012	Biostatistics in Practice	3	1.0	1	SprAB	Wed5, 6	4F305	Maruo Kazushi, Gosho Masahiko	The goal of this course is for students to acquire skills in biostatistical practice. Using SAS OnDemand for Academics, students will learn how to analyze the actual data and to implement the statistical methods in medical researches.	Lecture is conducted in English.
01EQ013	English in Medical Science and Technology I	1	1.0	1	SprAB	Mon2	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	The goal of this course is for students to develop the English proficiency they need to effectively and energetically communicate their professional achievements within the international scientific community. To this end, students will be divided into three classes and will take four modules. In the first module, they will study the basics of scientific communication. Thereafter, they will rotate through three modules on scientific writing, scientific presentation, and multimedia communication. Classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.
01EQ014	English in Medical Science and Technology II	1	1.0	1	FallAB	Mon5	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	Dependent on the module they took in the English in Medical Science and Technology I course, students will rotate through two of the following modules: Scientific Writing, Scientific Presentation, Scientific Multimedia Communication. As in the spring semester, classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.
01EQ016	Lecture and Seminar on Research Management (Basic)	1	1.0	1	SprC	by appointment	4F204	Hashimoto Koichi	This course aims to equip students with an acquiring of the basic knowledge and skill to be needed for the promotion of various research and development projects.	【医必修】 【橋必修】
01EQ018	Dissertation in Medical Sciences	2	8.0	2	Annual	by appointment		Irie Kenji	医学の各専門領域に関連する実験、調査、解析、分析などの手法を取得させ、修士論文の作成の指導を行う。	【全必修】 Lecture is conducted in English.

01EQ019	Internship I	3	1.0	1, 2	Annual	by appointment		Miyoshi Hirotoishi	This course offers opportunities for internship at hospitals, national institutes, private companies, etc. The internship is performed in the authorized institutions, or other institutions after getting permission of the internship committee. Through this internship program, future role expected for the students in Medical Science Program is understood.	【医必修】【医必修】 【橋必修】 Hybrid or Others オンラインと対面の併用
01EQ020	Internship II	3	1.0	1, 2	Annual	by appointment		Miyoshi Hirotoishi	This course offers opportunities for internship at hospitals, national institutes, private companies, etc. The internship is performed in the authorized institutions, or other institutions after getting permission of the internship committee. Through this internship program, future role expected for the students in Medical Science Program is understood.	Hybrid or Others オンラインと対面の併用
01EQ023	Seminar on Basic Medical Sciences	2	3.0	1	Annual	by appointment		Irie Kenji	医学の各研究分野では、それぞれの分野に応じた独自の研究が展開されている。修士論文研究の遂行上必要となる先端的な研究テーマを各自選び、紹介すると共に討論することによって自身の研究戦略を明確にする。	【医物必修】 Lecture is conducted in English.
01EQ047	International Medical Sciences Exchange Program I	1	1.0	1, 2	Annual	by appointment		Morikawa Kazuya, Ho Kiong, Koganezawa Tadachika	Students are required to go abroad and attend International meetings or International internship to discuss with many scientists to broaden their view and understand own place in the world.	Lecture is conducted in English.
01EQ048	International Medical Sciences Exchange Program II	1	2.0	1, 2	Annual	by appointment		Morikawa Kazuya, Ho Kiong, Koganezawa Tadachika	Students are required to go abroad and attend International meetings or International internship to discuss with many scientists to broaden their view and understand own place in the world.	Lecture is conducted in English.
01EQ049	International Medical Sciences Exchange Program III	1	3.0	1, 2	Annual	by appointment		Morikawa Kazuya, Ho Kiong, Koganezawa Tadachika	Students are required to go abroad and attend International meetings or International internship to discuss with many scientists to broaden their view and understand own place in the world.	Lecture is conducted in English.
01EQ025	Seminar for International Students	1	1.0	1, 2				Ichikawa Masao	This course provides international students with an opportunity to get prepared for disasters they might face in Japan.	【留学生対象】 Lecture is conducted in English. Not open in 2021.
01EQ038	Medical Science Seminar I: Brain Science Seminar	1	1.0	1, 2	Annual	by appointment		Matsumoto Masayuki	分子レベルから形態・機能・臨床医学、社会医学にまでおよぶ神経科学のさまざまな分野で活躍する第一線の研究者が行う最新のトピックスに関するセミナーに出席し、討論に参加する。	(第2または第3火曜)
01EQ039	Medical Science Seminar II: Biochemistry and Molecular Biology	1	1.0	1, 2	Annual	by appointment		Irie Kenji	医学生物学研究の最前線にいる研究者によるセミナーに出席し、最新の知識を学び、研究の進んでいく過程を具体的に理解する。	
01EQ040	Medical Science Seminar III: Immunology	1	1.0	1, 2	Annual	by appointment		Shibuya Kazuko	免疫学および関連科学分野における最新のトピックスに関するセミナーに出席し、専門研究者の討論に参加する。学んだ内容や印象をレポートにまとめる。	
01EQ041	Medical Science Seminar IV: Primary care	1	1.0	1, 2	Annual	by appointment	5Z116	Yanagi Hisako, Maeno Tetsuhiro	プライマリーケアや保健医療福祉の現場で活躍する第一線の研究者が行う最新のトピックスに関する講義に参加し、現場の最前線を知るとともに、プライマリーケアや保健医療福祉の最新の研究成果について、自分自身の研究分野との関連で議論する。 トピック:プライマリーケア、保健医療福祉	Identical to OAS0504.
01EQ042	Medical Science Seminar V: Career Path	1	1.0	1, 2	Annual	by request		Kobayashi Makoto, Irie Kenji, Matsuzaka Takashi, Mizuno Seiya, Okawa Keiko, Tahara Satoko, Hamada Michito, Watanabe Yukihide, Vuong Cat Khanh, KIMURA KENICHI	The course consists of 3 lectures/seminars. 1) scientific writing 2) presentation 3) lectures with group discussion by alumni for their careers These classes provide to students opportunities to improve their skills of writing, presentation and discussion	【医必修】【橋必修】 4F204 or 8F auditorium in the Health and Medical Science innovation building 1. Most instructors are alumni of this graduate school. Feel free to consult about your studies, researches, careers and future plans. 2. Japanese and English versions of lectures/seminars will be hold in different days. You can choose either of them.

01EQ053	Medical Science Seminar VI: epidemiology and biostatistics	1	2.0	1, 2	Annual	Tue6	4G121	Wagatsuma Yukiko, Goshō Masahiko, Iwagami Masao	This course assists students in learning steps through the discussions over textbooks and articles in epidemiology and biostatistics. We encourage students majoring in epidemiology and biostatistics should attend the course.	【公必修】 Lecture is conducted in English. Online (Synchronous)
01EQ060	Medical Science Seminar VII: Seminar of Clinical Study	1	1.0	1, 2	Annual	by appointment		Hashimoto Koichi	疫学や生物統計学に関する講義の補完として、疫学や生物統計学分野で活躍する第一線の研究者が行う最新のトピックスに関する講義に参加し、現場の最前線を知るとともに、疫学や生物統計学の最新の研究成果について、自分自身の研究分野との関連で議論する。また、原著論文を担当を決めて紹介し、セミナー形式にてディスカッションすることで学習効果を高める。 トピック: 疫学、生物統計学	【橋必修】 Identical to OAS0505.

共通専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	stand- ard regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ031	Outline of Internal Medicine	1	2.0	1	Fall IAB	Wed7, Thu6	4F204	Yamagata Kunihiro, Aonuma Kazutaka, Kawakami Yasushi, Kuga Keisuke, Shimano Hitoshi, Takada Hidetoshi, Chiba Shigeru, Hizawa Nobuyuki, Ohto Tatsuyuki, Saito Chie, Sakata-Yanagimoto Mamiko, Nishikii Hidekazu, Miyazono Yayoi, Ishii Akiko, Kondo Yuya, Hasegawa Naoyuki, Matsuno Yosuke, Moriwaki Toshikazu, Tajiri Kazuko, Tsuji Hiroshi	内科学、小児科学の概要について、特に成人、小児の基本的疾患について疾患概念、発症機序、診断、治療の概要について学ぶ。	
01EQ032	Outline of Surgical Disorders	1	1.0	1	Fall IAB	Thu5	4F204	Sato Yukio, Inoue Yoshiaki, Hiramatsu Yuji, Masumoto Koji, Ishikawa Eiichi, Inomata Shinichi, Tsurushima Hideo, Hashimoto Shinji, Mishima Hajime, Wada Tetsuro, Kamada Hiroshi	To learn the outline of surgery with the concept, pathogenetic mechanism, diagnosis and treatment of fundamental diseases of each surgery department.	Identical to OATGC35. Hybrid or Others オンライン(オンデマンド型、同時双方向型)
01EQ033	Innovative Clinical Biochemistry in Life Science	1	2.0	1	Fall IAB	Wed3, 4	4F204	Shimano Hitoshi, Kawakami Yasushi, Hitomi Shigemi, Yatoh Shigeru, Suzuki Hiroaki, Suzuki Hiroyuki, Sekiya Motohiro, Yahagi Naoya, Miyamoto Takafumi	The object of this class is to learn basics of metabolism and endocrinology such as etiology, pathology, diagnosis, therapy, and updated topics in the light of biochemistry. You will see the deep secrets of gene expression, metabolism, hormones, and signalings at the molecular levels to understand physiology and pathophysiology in life science.	Hybrid or Others ※対面で行う。(一部の講義のみオンラインで実施)

01EQ034	Laboratory Medicine	1	1.0	1, 2	Fall IAB	Fri3	4F204	Kawakami Yasushi, Takekoshi Kazuhiro, Ishizu Tomoko, Yamauchi Kazuyoshi, Isobe Kazumasa, Kato Takayasu	分子生物学の進歩に伴い臨床検査分野でも遺伝子解析技術などの新しい技術が導入され、分子レベルでの“疾患の病態生理学”が構築されようとしている。本検査総論では、実際に疾患をとりあげ、最新の臨床検査医学を概説する。	face-to-face
01EQ050	English Discussion & Presentation on Medical Sciences I	2	2.0	1, 2	SprAB	Fri1,2		Irie Kenji, Suzuki Hiroyuki, Mizuno Tomoaki, Suda Yasuyuki	Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges.	Lecture is conducted in English.
01EQ051	English Discussion & Presentation on Medical Sciences II	2	2.0	1, 2	Fall IAB	Wed1,2		Irie Kenji, Kato Mitsuyasu, Kawaguchi Atsushi, Takahashi Satoru, Suzuki Hiroyuki, Mizuno Tomoaki, Suda Yasuyuki, Funakoshi Yuji	Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges.	Lecture is conducted in English. Hybrid or Others 対面とオンラインの併用
01EQ052	Prominent Discoveries in Neuroscience	1	1.0	1, 2	SprA	Tue/Thu7		Yanagisawa Masashi, Kutsumura Noriki, Sakurai Takeshi, Abe Takashi, Sakaguchi Masanori, Lazarus Michael, Sakurai Katsuyasu, Toda Hirofumi, Hirano Arisa, Honjoh Sakiko	The goal of this omnibus course is to learn advanced principles in neuroscience, by reading “landmark” papers of historical significance in the broad area of neurobiology chosen by each instructor.	Code share with HBP Lecture is conducted in English.
01EQ054	Scientific English for Neuroscience	1	2.0	1	Fall IAB	by appointment		Koganezawa Tadachika	Communication skills in Neuroscience Research	The class is held at University of Bordeaux. Lecture is conducted in English.
01EQ055	Neural Network	1	3.0	1	Fall IAB	by appointment		Koganezawa Tadachika	Systematic understanding of the basic functioning of the networks of the central nervous system	The class is held at University of Bordeaux. Lecture is conducted in English.
01EQ056	Cognitive Neuroscience	1	3.0	1	Fall IAB	by appointment		Koganezawa Tadachika	Understanding of the overarching relationships between cognition and biology.	The class is held at University of Bordeaux. Lecture is conducted in English.
01EQ057	Cellular and Molecular Neurobiology	1	3.0	1	Fall IAB	by appointment		Koganezawa Tadachika	Systematic understanding of the cellular and molecular aspects of Neuroscience	The class is held at University of Bordeaux. Lecture is conducted in English.
01EQ061	Scientific Ethics	1	1.0	1, 2	SprAB	Wed4	4F204	Irie Kenji	This course will use traditional lectures and interactive presentations in the Socratic method for didactic learning. Students will also convene into groups for intensive discussion and reaction papers will be issued as homework to carry the learning outside of the classroom. Digital learning through iTunes modules will reinforce concepts using interactive technology.	Required for 1st-year students of the Ph.D. Program in Human Biology Lecture is conducted in English.

01EQ062	Scientific Critical Reading & Analysis	1	1.0	1, 2					Irie Kenji	After an initial lecture series on diagramming and presenting papers, students will take over as they each present a paper with an in-depth presentation. Didactic instruction will take place as discussion of the paper under the supervision of the instructor. Use of Powerpoint will reinforce basic presentation skills. Only English shall be used to present the paper and the language of data will be solely in English. A final exam will test student skill on unknown papers.	Lecture is conducted in English. Not open in 2021.
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医科学プログラム基礎科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	standa- rd regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ101	Human Pathology: Lecture	1	2.0	1	SprAB	Wed5, 6	4F204	Noguchi Masayuki, Kato Mitsuyasu, Suzuki Hiroyuki, Takayas hiki Norio, Kano Junko	In the first half, students study the bases of human disease entity and etiology and in the second half, they study various diseases in various organs.	Lecture is conducted in English.
01EQ102	Laboratory Animal Science and Animal Experimentation	5	2.0	1	SprAB	Fri3-5	4F204	Sugiyama Fumihiko, Mizuno Seiya, Murata Kazuya	The course aims to equip students with understanding proper conduct of animal experiment and generation of gene-modified mice. Students also acquire basic skills for mouse handling and embryo manipulation. Upon completion of this course, students will be able to discuss the use of gene-modified mice for studying human diseases.	Lecture is conducted in English.

医科学プログラム専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	standa- rd regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ103	Functional Structure and Laboratory Course	5	2.0	1	SprAB	Tue4-6	4F305	Takei Yosuke, sasaki tetsuya, Hamada Michito	組織学、特に、超微形態学の理論と実際について学ぶ。形態の研究法について様々な角度から紹介し、実習で組織の電子顕微鏡観察を行う。	
01EQ106	Oncology	1	2.0	1	Fall AB	Mon/Tue 4	4F204	Noguchi Masayuki, Irie Kenji, Kato Mitsuyasu, Sakura i Hideyuki, Sato Yukio, Sekine Ikuo, Chiba Shigeru, Hisatake Koji, Masumoto Koji, Kojima Takahiro, Suzuki Hiroyuki, Takayas hiki Norio, Minaguchi Takeo, Mori Kensaku, Kato Kosuke, Funakoshi Yuji	The aim of this subject is to learn disease entity, etiology and progression mechanism of malignant tumor. Clinical application of the basic knowledge for diagnosis and treatment is also covered.	Lecture is conducted in English. Online (Asynchronous)
01EQ107	Pharmacology	1	1.0	1	SprAB	Mon5	4F204	Masu Masayuki, Sakurai Takeshi, Ohbayash i Norihiko, Shiomi Kensuke, Keino- Masu Kazuko, Okada Takuya, Funakoshi Yuji	The objective of this course is to learn the basic knowledge of pharmacology in the medical field. The students will study the interaction between the living body and endogenous or exogenous biological substances at the genetic, cellular, and individual levels and learn basic principles of drugs and toxins.	Lecture is conducted in English.

01EQ131	Human Infection and Immunology	1	2.0	1	SprAB	Mon3, 4	4F204	Shibuya Kazuko, Kawaguchi Atsushi, Morikawa Kazuya, Ho Kiong, Matsumoto Isao, Tahara Satoko, Tsuboi Hiroto, Oda Chigusa, NABEKURA TUKASA	To understand infection biology and immunology is the basis to develop a strategy for control of infectious diseases all over the world. In this course, students study the molecular mechanism of replication and pathogenicity of infectious microbes such as viruses and bacteria, and the structure and function of microbes-encoded factors and host cell-derived factors involved in the replication and pathogenicity. In addition, students also study the immune system, including adaptive and innate immunities, which is crucial for human health and survival.	Code share with HBP Lecture is conducted in English.
01EQ109	Genome Medicine	1	2.0	1, 2	Fall IAB	Tue5, 6	4F204	Noguchi Emiko, Sekine Ikuo, Takekoshi Kazuhiro, Tsuchiya Naoyuki, Noguchi Masayuki, Homma Masato, Muratani Masafumi, Morikawa Kazuya, Fukushima Hiroko, Miyadera Hiroko	ゲノム科学の基本原理とその医学への応用方法を修得する。このために、人類遺伝学、遺伝医学、ゲノム疫学に関する主要な原理について解説を受けた後、診断・治療におけるゲノム診断とパーソナルゲノム情報の臨床応用に言及して、ゲノム情報を疾患の診断・予防・治療に役立てるための方法と課題について学習する。	Online Lecture is conducted in English.
01EQ111	Biomedical Engineering	1	1.0	1	SprAB	Tue2	4F204	Miyoshi Hiroto, Nagasaki Yukio, Ookawa Keiko	The aim of this subject is to learn principles, mechanisms and applications of biological information measurement devices. This subject also aims to acquire knowledge of dynamic characteristic and biomechanics of blood circulation system.	Only for students who can understand Japanese.
01EQ132	Stem Cell Therapy	1	1.0	1	SprAB	Thu3		Ohneda Osamu, Yamashita Toshiharu, Vuong Cat Khanh	The objective of this class is to learn basic knowledge and the latest research progress on regenerative medicine and stem cell biology fields by reading original articles. In addition, this class aims to improve individual ability to extract the point at issue of the article and discuss with other participants. Students read the latest original articles on regenerative medicine and stem cell biology and perform presentation. Students are expected to understand research purpose, methods, results, and to have a discussion about significance or problem of the article.	Code share with HBP Lecture is conducted in English. online
01EQ114	Radiological Science	1	2.0	1	Fall IAB	Fri1, 2		Sakae Takeji, Isobe Tomonori, Sakurai Hideyuki, Kumada Hiroaki, Takei Hideyuki, Mori Yutarō	放射線医学を基礎および臨床の両面から理解する。基礎は放射線物理学と生物学に関し、臨床は画像診断学、放射線腫瘍学および核医学を含め、その現状を学習する。また、放射線管理についても習得する。	Hybrid or Others Onsite and/or online
01EQ115	Psychiatry	1	1.0	1	Fall IAB	Mon3	4F204	Arai Tetsuaki, Sato Shinji, Tachikawa Hirokazu, Ota Miho, Takahashi Sho, Nemoto Kiyotaka, Shiratori Yuki	The objective of this course is to educate students for understanding the basic knowledge of both biological and psychological aspects of psychiatric disorders. The main themes of our research are dementia, depression, schizophrenia, eating disorder, perinatal psychiatric disorders, suicide prevention, disaster psychiatry, using the methods such as intervention, radiology, social psychiatry, neuropathology, and molecular biology.	Online (Asynchronous)
01EQ117	Clinical Gerontology	1	1.0	1	Fall IAB	Fri7	4F204	Yanagi Hisako, Ishii Kazuhiro, Suzuki Hideo, Ishii Akiko	高齢者に多発する疾患について学び、老年病の特殊性を理解する。また、高齢社会を迎えた現在、老年病対策の現状を分析し、今後を展望する。 目標：臨床老年病学の今日的課題をさまざまな観点から論じることができる。	Hybrid or Others オンライン(同時双方向型(Zoom))と対面の併用
01EQ118	Pharmaceutical Sciences	1	1.0	1	Fall IAB	Wed6	4F204	Homma Masato, Doki Kosuke, Hatano Kentaro	This course aims to learn pharmacokinetics for understanding drug efficacy and adverse effects in several aspects: 1) basic consideration of pharmacokinetic analysis, 2) pharmaceutical formulation for regulating drug disposition, 3) drug metabolizing enzymes and transporters.	【橋必修】 face-to-face

01EQ119	Critical Path Research Management	1	2.0	1	Fall IAB	Mon6, 7	4F204	Hashimoto Koichi, Matsusaka Satoshi, Muratani Masafumi, Tsurushima Hideo, Machino Takeshi, Yamada Takeshi	This course aims to equip students with an acquiring of the basic knowledge and skill to be needed for the promotion of various research and development projects.	【橋必修】 Lecture is conducted in English. Hybrid or Others
01EQ133	Regulatory Science of Medical Products	1	1.0	1	Fall IC			Hashimoto Koichi	This course aims to equip students with an understanding of regulatory framework of medical products under the pharmaceuticals and medical devices act (PMD act). Upon completion of this course, students will be able to explain regulatory framework of medical products, applications for marketing approval, review process and post marketing safety under the PMD act, National Health Insurance (NHI) pricing formula in Japan and relief services for adverse health effects.	【橋必修】
01EQ134	Appropriate Technology	1	3.0	1, 2	Annual			Irie Kenji	“現地(途上国、国内過疎地域)のニーズ、文化、環境、人などを考慮したうえで、現地の人に必要とされる最善の技術を創出する。それにより、これからの社会で必要とされる問題解決力、現場対応力、起業力を身につける。 1. 適正技術の科目の履修に必要な基礎知識(適正技術教育、途上国や過疎地域の現状、フィールド活動等)について、講義と討論により学修する。 2. 現地(途上国、国内過疎地域)のニーズ、文化、環境、人などを考慮したうえで、現地の人に必要とされる最善の技術を創出する。 授業項目: (1) 適正技術教育入門の受講 (2) 現地(途上国、国内過疎地域)へのフィールドトリップ (3) 途上国向けの製品開発と討議、最終報告会での発表 (4) (1)~(3)のレポートの提出”	Lecture is conducted in English.
01EQ120	Frontier Science in Drug Discovery	1	1.0	1, 2	Fall IAB	Wed5	4F204	Takahashi Satoru	Scientific advancements during the past two decades have created a paradigm shift in drug discovery process from the traditional approach including long experiences and contingencies to innovative methods, which are based on logical approach utilizing the latest in computational simulation technology. The recent progress includes genome-wide identification of successful drug-target proteins and in silico designing and screening of lead compounds with the techniques of combinatorial chemistry. In addition, there has been remarkable progress in the field of ADME assessment and drug delivery system. This program will be focused on the fundamentals of the process of the drug discovery and development and strengthening of medical-pharmaceutical relations.	Code share with HBP and Hx Lecture is conducted in English. Hybrid or Others 対面とオンライン(オンデマンド型)の併用
01EQ420	Environmental Health Perspective	1	2.0	1, 2				Kumagai Yoshito, Yasuhiro Shinkai	We are exposed to a variety of environmental stresses on a daily basis through living environments, lifestyles, and dietary habits. For example, while we take the nutrients necessary for life support through our diet, overload and deficiency of the nutrients impair health. It is also little doubt that chemicals contaminated in water and foods affect human health, resulting in occurrence of a variety of diseases. In this lecture, first of all, the students will learn 1) fundamental biochemistry (e.g., metabolism and synthesis) of the five major nutrients (carbohydrates, lipids, proteins, vitamins, and minerals) in the body, 2) role of such nutrients in the body development/maintenance and aging, 3) onset of various diseases caused by excessive and deficient the nutrients, and 4) intake of the nutrients from food. Next, we will learn the health hazards caused by environmental pollutants contaminated in water and food.	オンライン(オンデマンド型) manaba, stream Identical to 01AD605. Lecture is conducted in English. Not open in 2021.



医学物理学プログラム基礎科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	standa- rd regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ001	Human Anatomy: Lecture	1	2.0	1	SprAB	Wed1,2	4F204	Shiga Takashi, Takei Yosuke, Masuda Tomoyuki, Hamada Michito	1. 肉眼解剖学—人体についての骨学、筋学、脈管学、神経学、内臓学の基礎を学び、それらの知識が臨床分野にどのように応用されているかを理解する。 2. 顕微鏡解剖学—人体各器官の組織学・微細構造学を学び、各器官の機能する有様を細胞、更には分子レベルにおいて理解する。	【医物必修】電子・物 理工学専攻「医工学 コース」
01EQ023	Seminar on Basic Medical Sciences	2	3.0	1	Annual	by appoint- ment		Irie Kenji	医科学の各研究分野では、それぞれの分野に応じた独創的な研究が展開されている。修士論文研究の遂行上必要となる先端的な研究テーマを各自選り、紹介すると共に討論することによって自身の研究戦略を明確にする。	【医物必修】 Lecture is conducted in English.

医学物理学プログラム専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	standa- rd regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ201	Medical Physics IA: Lecture	1	2.0	1	SprAB	Wed7,8		Sakae Takeji, Isobe Tomonori, Kumada Hiroaki, Takei Hideyuki, Mori Yutaro	To learn radiation physics in the field of medical physics. Purpose: To be able to understand properties of radiation and to apply knowledge and technologies obtained from both medical and technological fields to clinical medicine.	【Compulsory】 Hybrid or Others Onsite and/or online
01EQ208	Medical Physics IB: Lecture	1	2.0	1	FallAB	Fri5,6		Sakae Takeji, Isobe Tomonori, Takei Hideyuki, Mori Yutaro	Radiation measurement is learned in the field of medical physics. Purpose: To understand the principle of radiation measurement, and dosimeters and its usage suitable to purpose.	【Compulsory】 Hybrid or Others Onsite and/or online
01EQ202	Medical Physics II: Lecture	1	2.0	1	FallAB	Fri7,8		Sakae Takeji, Isobe Tomonori, Takei Hideyuki, Mori Yutaro	Physics in radiation therapy and health physics/radiation protection are learned as clinical application of medical physics. Purpose: 1. To be able to explain overall technology in radiation therapy. 2. To be able to direct the quality assurance of equipment used in radiation therapy. 3. To be able to make treatment planning with minimized risks in radiation therapy. 4. To be able to explain radiation protection.	【Compulsory】 Hybrid or Others Onsite and/or online
01EQ203	Medical Physics III: Lecture	1	2.0	1	FallABC	by appoint- ment		Sakae Takeji, Isobe Tomonori, Kumada Hiroaki, Takei Hideyuki, Mori Yutaro	Physics and diagnostics in diagnostic radiology and nuclear medicine are learned as a clinically-applied technology in the field of medical physics. Purpose: 1. To be able to explain the principle of equipment in image diagnosis. 2. To be able to explain the imaging acquisition and analysis method in image diagnosis. 3. To understand properties of radioactive medicines and direct safety management. 4. To understand properties of equipment used in image diagnosis and select suitable modality for each disease.	【Compulsory】 Hybrid or Others Onsite and/or online

01EQ204	Medical Physics IV: Lecture	1	2.0	1	FallABC	by appointment		Sakae Takeji, Isobe Tomonori, Kumada Hiroaki, Takei Hideyuki, Mori Yutaro	Data processing and image engineering are learned as a clinically-applied technology in the field of medical physics. Also learned about radiation-related laws / recommendations, medical ethics, and research ethics necessary for conducting radiotherapy and research. Purpose: 1. To be able to explain various theories necessary for computer system. 2. To be able to explain medical information systems. 3. To be able to propose an operational plan for medical information system. 4. To be able to formulate and execute research plans based on medical ethics and research ethics. 5. To be able to understand and explain the purpose of radiation regulations and laws. 6. To be able to explain other radiation-related regulations.	【Compulsory】 Hybrid or Others Onsite and/or online
01EQ205	Medical Physics V: Lecture	1	2.0	1	FallABC	by appointment		Sakae Takeji, Isobe Tomonori, Sakurai Hideyuki, Okumura Toshiyuki, Takei Hideyuki, Mori Yutaro	Radiation biology and radiation oncology are learned as an application of medical physics. Also learned about application to radiation therapy physics. Purpose: 1. To be able to explain radiation damages and their recovery in irradiation, interaction and sensitizing effects of medicine used in chemo therapy or hyperthermia. 2. To be able to explain origin and mechanism of tumor. 3. To be able to explain an outline of methods in radiation therapy.	【Compulsory】 Onsite and/or online
01EQ206	Medical Physics Seminar	2	1.0	1	SprABC	Thu7, 8		Sakae Takeji, Isobe Tomonori, Okumura Toshiyuki, Kumada Hiroaki, Takei Hideyuki, Mori Yutaro	Medical physics is a scientific field that applies knowledge and outcomes of physical engineering to medical science. Researchers who work in this field must have ability to find out solution when problems arise. You would be able to develop your ability to settle various problems by learning how to solve problems provided in this seminar.	【Compulsory】 Hybrid or Others Onsite and/or online
01EQ207	Medical Physics Practice	3	1.0	1	FallABC	Thu7, 8		Sakae Takeji, Isobe Tomonori, Okumura Toshiyuki, Kumada Hiroaki, Takei Hideyuki, Mori Yutaro	Medical physics is a scientific field that applies knowledge and outcomes of physical engineering to medical science. Researchers who work in this field must have ability to find out solution when problems arise. You would be able to develop your ability to settle various problems by learning how to solve problems provided as a possible clinical situation in this practice.	【Compulsory】 Hybrid or Others Onsite and/or online

橋渡し研究プログラム基礎科目(フロンティア医科学)

Course Number	Course Name	Instruc-tional Type	Credits	stand-ard regis-tration year	Term	Meeting Days, Per-iod etc.	Classro-om	Instructor	Course Overview	Remarks
01EQ004	Clinical Medicine	1	2.0	1	FallIAB	Tue1, 2	4F204	Shoda Junichi, Arai Tetsuaki, Isobe Tomonori, Kawakami Yasushi, Sakae Takeji, Takekoshi Kazuhiro, Sekine Ikuo, Nishiyama Hiroyuki, Suzuki Hideo, Matsumoto Isao, Mori Kensaku, Isobe Kazumasa, Ishii Kazuhiro, Obara Naoshi, Ohara Yusuke	臨床医学の実践とは病める人を対象として、その人の持つ問題点を抽出し、それを把握した上で、その人の価値観と決定に従って治療することである。そしてその患者に満足してもらい幸せになってもらうことを目指している。このような臨床医学の基本的事項と分化した各専門分野の現状についても理解する。	【橋必修】電子・物理工学専攻「医工学コース」 Online (Asynchronous)

01EQ005	Introduction to Social Medicine	1	2.0	1	SprAB	Thu1, 2		Ichikawa Masao, Kondo Masahide, Goshō Masahiko, Saito Tamaki, Tamiya Nanako, Honda Katsuya, Yamagishi Kazumasa, Wagatsuma Yukiko, Sasahara Shinichiro, Morita Nobuaki, Ito Tomoko, Ogai Yasukazu, Okubo Reiko, Sugano Yukiko, Togoobaatar Ganchimeg, Fukushige Mizuho, Hori Ai, Hori Daisuke	This course aims to equip students with an understanding of the broad determinants of health – income and poverty, education, environmental factors such as housing and transport – as well as health care and genetic influences and of the importance of a multi-disciplinary approach which includes medicine, epidemiology, statistics, economics, social science and many other subjects in improving population health.	【橋必修】 【公必修】 【ヒ必修】電子・物理工学専攻「医工学コース」 Identical to OAS0507. Lecture is conducted in English. Online (Asynchronous)
01EQ508	Health Economics	1	1.0	1, 2	FallC	Intensive	4F204	Kondo Masahide, Okubo Reiko	As a foundation of health economics, application of microeconomics, welfare economics, and new institutional economics in health care are explained. Goal: To be able to view the health system as a market for health care. To be able to appraise economic evaluations. (1) Introduction: health care, money and economic growth, (2) Microeconomics of health insurance, (3) Law of demand, (4) Theory of production, (5) Market mechanism, (6) Behaviour of health care provider, (7) Basics of welfare economics, (8) Economic evaluation of health care programme, (9) Equity: justice and fairness, (10) Overall discussion.	【橋必修】 【公必修】 国際地域研究専攻とコードシェア Lecture is conducted in English. Online (Asynchronous)
01EQ011	Biostatistics, Basic	1	1.0	1	SprAB	Wed3	4F204	Goshō Masahiko, Maruo Kazushi	This course aims to equip students with understanding basic statistical methods and with interpreting the analysis results, and with applying them for their medical studies. Students will learn statistical test, estimate, correlation, regression, analysis of variance, multivariate analysis, survival analysis.	【橋必修】 【公必修】 電子・物理工学専攻「医工学コース」 Lecture is conducted in English.

橋渡し研究プログラム専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru ctional Type	Credit s	standa rd regist ration year	Term	Meeting Days, Per iod etc.	Classro om	Instructor	Course Overview	Remarks
01EQ119	Critical Path Research Management	1	2.0	1	Fall IAB	Mon6, 7	4F204	Hashimoto Koichi, Matsusaka Satoshi, Muratani Masafumi, Tsurushima Hideo, Machino Takeshi, Yamada Takeshi	This course aims to equip students with an acquiring of the basic knowledge and skill to be needed for the promotion of various research and development projects.	【橋必修】 Lecture is conducted in English. Hybrid or Others
01EQ133	Regulatory Science of Medical Products	1	1.0	1	FallC	by appointment		Hashimoto Koichi	This course aims to equip students with an understanding of regulatory framework of medical products under the pharmaceuticals and medical devices act (PMD act). Upon completion of this course, students will be able to explain regulatory framework of medical products, applications for marketing approval, review process and post marketing safety under the PMD act, National Health Insurance (NHI) pricing formula in Japan and relief services for adverse health effects.	【橋必修】

01EQ403	Methods in Clinical Trials	1	1.0	1, 2	Fall IAB	Tue7, 8	4F204	Wagatsuma Yukiko, Goshō Masahiko	Clinical trial is a comparison test of a medical treatment, versus a placebo, or the standard medical treatment for a patient's condition. Good Clinical Practice (GCP) guidelines include the standards on how clinical trials should be conducted, define the roles and responsibilities of clinical trial sponsors, clinical research investigators and monitors. The aim of this course is to learn about the outline of clinical trials and GCP.	Lecture is conducted in English. Online (Synchronous)
01EQ409	Biostatistics Advanced	1	2.0	1, 2	Fall IAB	Wed4, 5	4F305	Goshō Masahiko, Maruo Kazushi	The goal of this course is for students to acquire skills in advanced biostatistical approaches. Using Applied Survival Analysis, students will learn survival analysis methods and their applications.	【公必修】 Lecture is conducted in English. Hybrid or Others オンライン(オンデマンド型、同時双方向型)

公衆衛生学プログラム基礎科目(フロンティア医科学専攻)

Course Number	Course Name	Instruc-tional Type	Credits	stand-ard registration year	Term	Meeting Days, Per-iod etc.	Classro-om	Instructor	Course Overview	Remarks
01EQ401	Lecture on Health Behavioral Science	1	1.0	1, 2	Fall IAB	Wed3	4E608	Sasahara Shinichiro, Saito Tamaki, Matsuzaki Ichiyo, Morita Nobuaki, Oi Yuichi, Ogai Yasukazu, Doki Syotaro, Hori Daisuke	This course aims to equip students with an understanding of the concept of health promotion, and theory and methodology of health behavior change through the real example in each field.	【公必修】 Lecture is conducted in English. Hybrid or Others 対面で行うが、講義内容はオンライン(オンデマンド型)で配信も行う。
01EQ517	Health Care Policy and Management	1	1.0	1, 2	Fall IAB	Thu3	4F204	Kondo Masahide, Okubo Reiko	1 To understand basic theories of health care policy science and challenges of health systems worldwide. 2 To understand health systems and challenges in Japan. Goal: To be able to argue issues of health systems based on basic theories from the viewpoint of health policy sciences.  (1) Introduction: health, health care and policy, (2) Determinants of health and policy, (3) Role of state and health system, (4) Japan's health care provision system, (5) Japan's health care financing system, (6) Practice of health policy sciences, (7) Topics in global health policy, (8) Health policy process, (9) Health planning and management, (10) Health policies beyond health care policy.	【公必修】 Code share with GIP-TRIAD. Lecture is conducted in English. Online (Asynchronous)
01EQ518	Health Service Administration	1	1.0	1, 2	Fall IAB	Thu4	4F204	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Inokuchi Ryota, Iwagami Masao, Morita Kojiro	To understand the approach of health service administration and management in various fields of health care.	Lecture is conducted in English. In class or on demand
01EQ508	Health Economics	1	1.0	1, 2	Fall IC	Intensi-ve	4F204	Kondo Masahide, Okubo Reiko	As a foundation of health economics, application of microeconomics, welfare economics, and new institutional economics in health care are explained. Goal: To be able to view the health system as a market for health care. To be able to appraise economic evaluations. (1) Introduction: health care, money and economic growth, (2) Microeconomics of health insurance, (3) Law of demand, (4) Theory of production, (5) Market mechanism, (6) Behaviour of health care provider, (7) Basics of welfare economics, (8) Economic evaluation of health care programme, (9) Equity: justice and fairness, (10) Overall discussion.	【橋必修】 【公必修】 国際地域研究専攻とコードシェア Lecture is conducted in English. Online (Asynchronous)

01EQ511	Introduction of Health Services Research	1	1.0	1, 2	SprAB	Thu4	4F305	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Ito Tomoko, Iwagami Masao	This course is designed for students to understand the basic concept of "Health Services Research" that scientifically evaluates and analyzes the quality of service (including hospitals, facility care and in-home care) in the field of public health and welfare.	【公必修】国際地域研究専攻とコードシェア Lecture is conducted in English. 対面またはオンデマンド
01EQ411	Critical Appraisal in Quantitative Health and Social Sciences Research	1	1.0	1	SprC	Fri3, 4		Togoobaatar Ganchimeg	The goal of this course is for students to acquire skills in critically appraising epidemiological research methods and biostatistical approaches. Students will use a variety of frameworks to critically appraise literature from their chosen field of study and examine and discuss the implications for evidence-based practice.	Lecture is conducted in English.
01EQ412	Systematic reviews and Introduction to Meta-analysis	1	2.0	1	FallAB	Mon2, 3	4F305	Togoobaatar Ganchimeg	The goal of this course is students to acquire knowledge and skills to conduct systematic review and meta-analysis. This course will provide a detailed description of the systematic review process, discuss the strengths and limitations of the method, and provide step-by-step guidance on how to perform a systematic review and meta-analysis.	Lecture is conducted in English.

公衆衛生学プログラム専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	stand- ard regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ402	Epidemiology	1	2.0	1, 2	FallAB	Tue3, 4	4F305	Wagatsuma Yukiko	The fundamental concepts and uses of epidemiology, and its role in formulating principles, are examined. The uses of information science and statistics in epidemiological and clinical researches are studied, and the role that these fields can play in EBM (Evidence-Based Medicine) are also examined. Exercises are conducted in which epidemiological methods are utilized, to promote understanding of the practice of this discipline.	Lecture is conducted in English. Hybrid or Others In class and on demand (Hybrid)
01EQ403	Methods in Clinical Trials	1	1.0	1, 2	FallAB	Tue7, 8	4F204	Wagatsuma Yukiko, Goshō Masahiko	Clinical trial is a comparison test of a medical treatment, versus a placebo, or the standard medical treatment for a patient's condition. Good Clinical Practice (GCP) guidelines include the standards on how clinical trials should be conducted, define the roles and responsibilities of clinical trial sponsors, clinical research investigators and monitors. The aim of this course is to learn about the outline of clinical trials and GCP.	Lecture is conducted in English. Online (Synchronous)
01EQ404	Health Promotion	1	1.0	1, 2	FallAB	Tue2	4F305	Anme Tokie	This course aims to equip students with an understanding of the theories and practices of health promotion, advocacy, communication and empowerment, as well as various research evidences.	Lecture is conducted in English. Online (Synchronous)
01EQ420	Environmental Health Perspective	1	2.0	1, 2				Kumagai Yoshito, Yasuhiro Shinkai	We are exposed to a variety of environmental stresses on a daily basis through living environments, lifestyles, and dietary habits. For example, while we take the nutrients necessary for life support through our diet, overload and deficiency of the nutrients impair health. It is also little doubt that chemicals contaminated in water and foods affect human health, resulting in occurrence of a variety of diseases. In this lecture, first of all, the students will learn 1) fundamental biochemistry (e.g., metabolism and synthesis) of the five major nutrients (carbohydrates, lipids, proteins, vitamins, and minerals) in the body, 2) role of such nutrients in the body development/maintenance and aging, 3) onset of various diseases caused by excessive and deficient the nutrients, and 4) intake of the nutrients from food. Next, we will learn the health hazards caused by environmental pollutants contaminated in water and food.	オンライン(オンデマ ンド型)manaba, stream Identical to 01AD605. Lecture is conducted in English. Not open in 2021.

01EQ409	Biostatistics Advanced	1	2.0	1, 2	Fall AB	Wed 4, 5	4F305	Gosho Masahiko, Maruo Kazushi	The goal of this course is for students to acquire skills in advanced biostatistical approaches. Using Applied Survival Analysis, students will learn survival analysis methods and their applications.	【公必修】 Lecture is conducted in English. Hybrid or Others オンライン(オンデマンド型、同時双方向型)
01EQ513	Mental Health	1	1.0	1	Spr AB	Mon 5	4F305	Saito Tamaki, Morita Nobuaki, Ogai Yasukazu	This course aims to equip students with an understanding of basic concepts, methods and social systems to assess and support persons with mental health problems. - Mechanisms and assessment of stress - Psychological development and crisis - Mental health care - Actual status of persons with mental disorders and support systems for them	Lecture is conducted in English.

ヒューマン・ケア科学プログラム専門科目(フロンティア医科学専攻)

Course Number	Course Name	Instru- ctional Type	Credit s	stand- ard regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ517	Health Care Policy and Management	1	1.0	1, 2	Fall AB	Thu 3	4F204	Kondo Masahide, Okubo Reiko	1 To understand basic theories of health care policy science and challenges of health systems worldwide. 2 To understand health systems and challenges in Japan. Goal: To be able to argue issues of health systems based on basic theories from the viewpoint of health policy sciences.  (1) Introduction: health, health care and policy, (2) Determinants of health and policy, (3) Role of state and health system, (4) Japan's health care provision system, (5) Japan's health care financing system, (6) Practice of health policy sciences, (7) Topics in global health policy, (8) Health policy process, (9) Health planning and management, (10) Health policies beyond health care policy.	【公必修】 Code share with GIP-TRIAD. Lecture is conducted in English. Online (Asynchronous)
01EQ518	Health Service Administration	1	1.0	1, 2	Fall AB	Thu 4	4F204	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Inokuchi Ryota, Iwagami Masao, Morita Kojiro	To understand the approach of health service administration and management in various fields of health care.	Lecture is conducted in English. In class or on demand
01EQ508	Health Economics	1	1.0	1, 2	Fall C	Intensive	4F204	Kondo Masahide, Okubo Reiko	As a foundation of health economics, application of microeconomics, welfare economics, and new institutional economics in health care are explained. Goal: To be able to view the health system as a market for health care. To be able to appraise economic evaluations. (1) Introduction: health care, money and economic growth, (2) Microeconomics of health insurance, (3) Law of demand, (4) Theory of production, (5) Market mechanism, (6) Behaviour of health care provider, (7) Basics of welfare economics, (8) Economic evaluation of health care programme, (9) Equity: justice and fairness, (10) Overall discussion.	【橋必修】 【公必修】 国際地域研究専攻と コードシェア Lecture is conducted in English. Online (Asynchronous)
01EQ509	Medical Science and Health Care for Elderly People	1	1.0	1, 2				Yanagi Hisako	高齢者は複数の慢性疾患を持つことが多いが、症状・経過が非典型的で個人差が大きく、不安、抑うつ、痴呆などの精神症状を呈しやすい。高齢者が疾病・障害を負った場合、病院内での治療・管理で治療することは少なく、地域での医療ケアが必要となる例が多い。高齢者に発症しやすい疾病の病態・治療・管理について学習し、地域における医療ケアを支える保健・医療・福祉の仕組みについて理解を深める。	【選択必修】 Not open in 2021.
01EQ510	Palliative Medicine	1	1.0	1	Fall AB	by appointment	4F305	Hamano Jun	This course aims to equip students with an understanding of core concepts of palliative care as well as knowledge and skills to provide essential palliative care as health care provider such as communication skill, cancer pain control, other symptom management and spiritual care.	12/10 face-to-face

01EQ511	Introduction of Health Services Research	1	1.0	1, 2	SprAB	Thu4	4F305	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Ito Tomoko, Iwagami Masao	This course is designed for students to understand the basic concept of "Health Services Research" that scientifically evaluates and analyzes the quality of service (including hospitals, facility care and in-home care) in the field of public health and welfare.	【公必修】国際地域研究専攻とコードシェア Lecture is conducted in English. 対面またはオンデマンド
01EQ513	Mental Health	1	1.0	1	SprAB	Mon5	4F305	Saito Tamaki, Morita Nobuaki, Ogai Yasukazu	This course aims to equip students with an understanding of basic concepts, methods and social systems to assess and support persons with mental health problems. - Mechanisms and assessment of stress - Psychological development and crisis - Mental health care - Actual status of persons with mental disorders and support systems for them	Lecture is conducted in English.
01EQ514	Gerontological Nursing and Caring	1	1.0	1, 2	SprAB	Wed7	5Z310	Hashizume Yumi	Learn about qualitative research method as for the beginner level in order to explore the meaning of effective human caring for the older adults and the family	bilingual

General Foundation Subjects

Course Number	Course Name	Instruc-tional Type	Credit s	standa rd regist ration year	Term	Meeting Days, Per iod etc.	Classro om	Instructor	Course Overview	Remarks
01EQ005	Introduction to Social Medicine	1	2.0	1	SprAB	Thu1, 2		Ichikawa Masao, Kondo Masahide, Goshō Masahiko, Saito Tamaki, Tamiya Nanako, Honda Katsuya, Yamagishi Kazumasa, Wagatsuma Yukiko, Sasahara Shinichiro, Morita Nobuaki, Ito Tomoko, Ogai Yasukazu, Okubo Reiko, Sugano Yukiko, Togoobaatar Ganchimeg, Fukushige Mizuho, Hori Ai, Hori Daisuke	This course aims to equip students with an understanding of the broad determinants of health – income and poverty, education, environmental factors such as housing and transport – as well as health care and genetic influences and of the importance of a multi-disciplinary approach which includes medicine, epidemiology, statistics, economics, social science and many other subjects in improving population health.	【橋必修】 【公必修】 【ヒ必修】電子・物理工学専攻「医工学コース」 Identical to OAS0507. Lecture is conducted in English. Online (Asynchronous)
01EQ007	Introduction to Epidemiology	1	1.0	1, 2	SprAB	Tue3	4F204	Wagatsuma Yukiko	Epidemiology is the study of factors affecting the health and illness of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine. The aim of this course is to learn the fundamental concepts and uses of epidemiology, and its role in formulating principles.	Lecture is conducted in English. In class and on demand (Hybrid)
01EQ011	Biostatistics, Basic	1	1.0	1	SprAB	Wed3	4F204	Goshō Masahiko, Maruo Kazushi	This course aims to equip students with understanding basic statistical methods and with interpreting the analysis results, and with applying them for their medical studies. Students will learn statistical test, estimate, correlation, regression, analysis of variance, multivariate analysis, survival analysis.	【橋必修】 【公必修】 電子・物理工学専攻「医工学コース」 Lecture is conducted in English.
01EQ012	Biostatistics in Practice	3	1.0	1	SprAB	Wed5, 6	4F305	Maruo Kazushi, Goshō Masahiko	The goal of this course is for students to acquire skills in biostatistical practice. Using SAS OnDemand for Academics, students will learn how to analyze the actual data and to implement the statistical methods in medical researches.	Lecture is conducted in English.

01EQ013	English in Medical Science and Technology I	1	1.0	1	SprAB	Mon2	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	The goal of this course is for students to develop the English proficiency they need to effectively and energetically communicate their professional achievements within the international scientific community. To this end, students will be divided into three classes and will take four modules. In the first module, they will study the basics of scientific communication. Thereafter, they will rotate through three modules on scientific writing, scientific presentation, and multimedia communication. Classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.
01EQ014	English in Medical Science and Technology II	1	1.0	1	FallAB	Mon5	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	Dependent on the module they took in the English in Medical Science and Technology I course, students will rotate through two of the following modules: Scientific Writing, Scientific Presentation, Scientific Multimedia Communication. As in the spring semester, classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.
01EQ018	Dissertation in Medical Sciences	2	8.0	2	Annual	by appointment		Irie Kenji	医学の各専門領域に関連する実験、調査、解析、分析などの手法を取得させ、修士論文の作成の指導を行う。	【全必修】 Lecture is conducted in English.
01EQ029	Advanced Exercise on Public Health	1	4.0	1				Chair of Medical Sciences	This is compulsory in the Accelerated MPH program (instead of 01EQ018)	Lecture is conducted in English. Not open in 2021. 2018/10/24 開講中止決定
01EQ023	Seminar on Basic Medical Sciences	2	3.0	1	Annual	by appointment		Irie Kenji	医学の各研究分野では、それぞれの分野に応じた独創的な研究が展開されている。修士論文研究の遂行上必要となる先端的な研究テーマを各自選び、紹介すると共に討論することによって自身の研究戦略を明確にする。	【医物必修】 Lecture is conducted in English.
01EQ025	Seminar for International Students	1	1.0	1, 2				Ichikawa Masao	This course provides international students with an opportunity to get prepared for disasters they might face in Japan.	【留学生対象】 Lecture is conducted in English. Not open in 2021.
01EQ401	Lecture on Health Behavioral Science	1	1.0	1, 2	FallAB	Wed3	4E608	Sasahara Shinichiro, Saito Tamaki, Matsuzaki Ichiyo, Morita Nobuaki, Oi Yuichi, Ogai Yasukazu, Doki Syotaro, Hori Daisuke	This course aims to equip students with an understanding of the concept of health promotion, and theory and methodology of health behavior change through the real example in each field.	【公必修】 Lecture is conducted in English. Hybrid or Others 対面で行うが、講義内容はオンライン(オンデマンド型)で配信も行う。
01EQ517	Health Care Policy and Management	1	1.0	1, 2	FallAB	Thu3	4F204	Kondo Masahide, Okubo Reiko	1 To understand basic theories of health care policy science and challenges of health systems worldwide. 2 To understand health systems and challenges in Japan. Goal: To be able to argue issues of health systems based on basic theories from the viewpoint of health policy sciences.  (1) Introduction: health, health care and policy, (2) Determinants of health and policy, (3) Role of state and health system, (4) Japan's health care provision system, (5) Japan's health care financing system, (6) Practice of health policy sciences, (7) Topics in global health policy, (8) Health policy process, (9) Health planning and management, (10) Health policies beyond health care policy.	【公必修】 Code share with GIP-TRIAD. Lecture is conducted in English. Online (Asynchronous)



01EQ518	Health Service Administration	1	1.0	1, 2	Fall AB	Thu4	4F204	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Inokuchi Ryota, Iwagami Masao, Morita Kojiro	To understand the approach of health service administration and management in various fields of health care.	Lecture is conducted in English. In class or on demand
01EQ508	Health Economics	1	1.0	1, 2	Fall C	Intensive	4F204	Kondo Masahide, Okubo Reiko	As a foundation of health economics, application of microeconomics, welfare economics, and new institutional economics in health care are explained. Goal: To be able to view the health system as a market for health care. To be able to appraise economic evaluations. (1) Introduction: health care, money and economic growth, (2) Microeconomics of health insurance, (3) Law of demand, (4) Theory of production, (5) Market mechanism, (6) Behaviour of health care provider, (7) Basics of welfare economics, (8) Economic evaluation of health care programme, (9) Equity: justice and fairness, (10) Overall discussion.	【橋必修】 【公必修】 国際地域研究専攻とコードシェア Lecture is conducted in English. Online (Asynchronous)
01EQ511	Introduction of Health Services Research	1	1.0	1, 2	Spr AB	Thu4	4F305	Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Ito Tomoko, Iwagami Masao	This course is designed for students to understand the basic concept of "Health Services Research" that scientifically evaluates and analyzes the quality of service (including hospitals, facility care and in-home care) in the field of public health and welfare.	【公必修】 国際地域研究専攻とコードシェア Lecture is conducted in English. 対面またはオンデマンド
01EQ411	Critical Appraisal in Quantitative Health and Social Sciences Research	1	1.0	1	Spr C	Fri 3, 4		Togoobaatar Ganchimeg	The goal of this course is for students to acquire skills in critically appraising epidemiological research methods and biostatistical approaches. Students will use a variety of frameworks to critically appraise literature from their chosen field of study and examine and discuss the implications for evidence-based practice.	Lecture is conducted in English.
01EQ412	Systematic reviews and Introduction to Meta-analysis	1	2.0	1	Fall AB	Mon 2, 3	4F305	Togoobaatar Ganchimeg	The goal of this course is students to acquire knowledge and skills to conduct systematic review and meta-analysis. This course will provide a detailed description of the systematic review process, discuss the strengths and limitations of the method, and provide step-by-step guidance on how to perform a systematic review and meta-analysis.	Lecture is conducted in English.

#### Major Subjects

Course Number	Course Name	Instruc-tional Type	Credits	stand-ard registration year	Term	Meeting Days, Per-iod etc.	Classro-om	Instructor	Course Overview	Remarks
01EQ109	Genome Medicine	1	2.0	1, 2	Fall AB	Tue 5, 6	4F204	Noguchi Emiko, Sekine Ikuo, Takekoshi Kazuhiro, Tsuchiya Naoyuki, Noguchi Masayuki, Homma Masato, Muratani Masafumi, Morikawa Kazuya, Fukushima Hiroko, Miyadera Hiroko	ゲノム科学の基本原理とその医学への応用方法を修得する。このために、人類遺伝学、遺伝医学、ゲノム疫学に関する主要な原理について解説を受けた後、診断・治療におけるゲノム診断とパーソナルゲノム情報の臨床応用に言及して、ゲノム情報を疾患の診断・予防・治療に役立てるための方法と課題について学習する。	Online Lecture is conducted in English.
01EQ402	Epidemiology	1	2.0	1, 2	Fall AB	Tue 3, 4	4F305	Wagatsuma Yukiko	The fundamental concepts and uses of epidemiology, and its role in formulating principles, are examined. The uses of information science and statistics in epidemiological and clinical researches are studied, and the role that these fields can play in EBM (Evidence-Based Medicine) are also examined. Exercises are conducted in which epidemiological methods are utilized, to promote understanding of the practice of this discipline.	Lecture is conducted in English. Hybrid or Others In class and on demand (Hybrid)

01EQ404	Health Promotion	1	1.0	1, 2	Fall IAB	Tue2	4F305	Anne Tokie	This course aims to equip students with an understanding of the theories and practices of health promotion, advocacy, communication and empowerment, as well as various research evidences.	Lecture is conducted in English. Online (Synchronous)
01EQ420	Environmental Health Perspective	1	2.0	1, 2				Kumagai Yoshito, Yasuhiro Shinkai	We are exposed to a variety of environmental stresses on a daily basis through living environments, lifestyles, and dietary habits. For example, while we take the nutrients necessary for life support through our diet, overload and deficiency of the nutrients impair health. It is also little doubt that chemicals contaminated in water and foods affect human health, resulting in occurrence of a variety of diseases. In this lecture, first of all, the students will learn 1) fundamental biochemistry (e.g., metabolism and synthesis) of the five major nutrients (carbohydrates, lipids, proteins, vitamins, and minerals) in the body, 2) role of such nutrients in the body development/maintenance and aging, 3) onset of various diseases caused by excessive and deficient the nutrients, and 4) intake of the nutrients from food. Next, we will learn the health hazards caused by environmental pollutants contaminated in water and food.	オンライン(オンデマンド型) manaba, stream Identical to 01AD605. Lecture is conducted in English. Not open in 2021.
01EQ409	Biostatistics Advanced	1	2.0	1, 2	Fall IAB	Wed4, 5	4F305	Gosho Masahiko, Maruo Kazushi	The goal of this course is for students to acquire skills in advanced biostatistical approaches. Using Applied Survival Analysis, students will learn survival analysis methods and their applications.	【公必修】 Lecture is conducted in English. Hybrid or Others オンライン(オンデマンド型、同時双方向型)
01EQ513	Mental Health	1	1.0	1	SprAB	Mon5	4F305	Saito Tamaki, Morita Nobuaki, Ogai Yasukazu	This course aims to equip students with an understanding of basic concepts, methods and social systems to assess and support persons with mental health problems. - Mechanisms and assessment of stress - Psychological development and crisis - Mental health care - Actual status of persons with mental disorders and support systems for them	Lecture is conducted in English.
01EQ053	Medical Science Seminar VI: epidemiology and biostatistics	1	2.0	1, 2	Annual	Tue6	4G121	Wagatsuma Yukiko, Gosho Masahiko, Iwagami Masao	This course assists students in learning steps through the discussions over textbooks and articles in epidemiology and biostatistics. We encourage students majoring in epidemiology and biostatistics should attend the course.	【公必修】 Lecture is conducted in English. Online (Synchronous)

#### General Foundation Subjects

Course Number	Course Name	Instructional Type	Credits	standard registration year	Term	Meeting Days, Period etc.	Classroom	Instructor	Course Overview	Remarks
01EQ045	Lecture in Human Physiology	1	1.0	1	SprA	Thu4, 5		Koganezawa Tadachika, Matsumoto Masayuki, Sakurai Takeshi, Kunimatsu Jun, Yamada Hiroshi	Systematic understanding of human physiological functions. Goal: Upon completion of this course, students will be able to discuss functional mechanisms on various human functions.	Lecture is conducted in English.
01EQ046	Topics in Biochemistry	1	1.0	1	SprAB	Mon1	4F204	Fukuda Aya, Irie Kenji, Hisatake Koji, Uchida Kazuhiko, Mizuno Tomoaki, Shiomi Kensuke, Keino-Masu Kazuko	ヒトの生理機能とその異常である疾患を分子レベルで研究する為に必要な生化学の基本的事項を学習する。	Lecture is conducted in English.

01EQ005	Introduction to Social Medicine	1	2.0	1	SprAB	Thu1, 2		Ichikawa Masao, Kondo Masahide, Goshō Masahiko, Saito Tamaki, Tamiya Nanako, Honda Katsuya, Yamagishi Kazumasa, Wagatsuma Yukiko, Sasahara Shinichiro, Morita Nobuaki, Ito Tomoko, Ogai Yasukazu, Okubo Reiko, Sugano Yukiko, Togoobaatar Ganchimeg, Fukushige Mizuho, Hori Ai, Hori Daisuke	This course aims to equip students with an understanding of the broad determinants of health – income and poverty, education, environmental factors such as housing and transport – as well as health care and genetic influences and of the importance of a multi-disciplinary approach which includes medicine, epidemiology, statistics, economics, social science and many other subjects in improving population health.	【橋必修】 【公必修】 【ヒ必修】電子・物理工学専攻「医工学コース」 Identical to OAS0507. Lecture is conducted in English. Online (Asynchronous)
01EQ007	Introduction to Epidemiology	1	1.0	1, 2	SprAB	Tue3	4F204	Wagatsuma Yukiko	Epidemiology is the study of factors affecting the health and illness of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine. The aim of this course is to learn the fundamental concepts and uses of epidemiology, and its role in formulating principles.	Lecture is conducted in English. In class and on demand (Hybrid)
01EQ011	Biostatistics, Basic	1	1.0	1	SprAB	Wed3	4F204	Goshō Masahiko, Maruo Kazushi	This course aims to equip students with understanding basic statistical methods and with interpreting the analysis results, and with applying them for their medical studies. Students will learn statistical test, estimate, correlation, regression, analysis of variance, multivariate analysis, survival analysis.	【橋必修】 【公必修】 電子・物理工学専攻「医工学コース」 Lecture is conducted in English.
01EQ012	Biostatistics in Practice	3	1.0	1	SprAB	Wed5, 6	4F305	Maruo Kazushi, Goshō Masahiko	The goal of this course is for students to acquire skills in biostatistical practice. Using SAS OnDemand for Academics, students will learn how to analyze the actual data and to implement the statistical methods in medical researches.	Lecture is conducted in English.
01EQ013	English in Medical Science and Technology I	1	1.0	1	SprAB	Mon2	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	The goal of this course is for students to develop the English proficiency they need to effectively and energetically communicate their professional achievements within the international scientific community. To this end, students will be divided into three classes and will take four modules. In the first module, they will study the basics of scientific communication. Thereafter, they will rotate through three modules on scientific writing, scientific presentation, and multimedia communication. Classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.
01EQ014	English in Medical Science and Technology II	1	1.0	1	FallAB	Mon5	4F305, 4F204	Miyamasu Flaminia, Mayers Thomas David	Dependent on the module they took in the English in Medical Science and Technology I course, students will rotate through two of the following modules: Scientific Writing, Scientific Presentation, Scientific Multimedia Communication. As in the spring semester, classes will be conducted entirely in English, so students will also hone their listening skills. Upon completion of the course, students will have a foundation for sharing their knowledge and ideas with other scientists in English.	【医必修】 Lecture is conducted in English.

01EQ023	Seminar on Basic Medical Sciences	2	3.0	1	Annual	by appointment		Irie Kenji	医科学の各研究分野では、それぞれの分野に応じた独創的な研究が展開されている。修士論文研究の遂行上必要となる先端的な研究テーマを各自選び、紹介すると共に討論することによって自身の研究戦略を明確にする。	【医物必修】 Lecture is conducted in English.
01EQ018	Dissertation in Medical Sciences	2	8.0	2	Annual	by appointment		Irie Kenji	医科学の各専門領域に関連する実験、調査、解析、分析などの手法を取得させ、修士論文の作成の指導を行う。	【全必修】 Lecture is conducted in English.
01EQ101	Human Pathology: Lecture	1	2.0	1	SprAB	Wed5,6	4F204	Noguchi Masayuki, Kato Mitsuyasu, Suzuki Hiroyuki, Takayashi Norio, Kano Junko	In the first half, students study the bases of human disease entity and etiology and in the second half, they study various diseases in various organs.	Lecture is conducted in English.
01EQ102	Laboratory Animal Science and Animal Experimentation	5	2.0	1	SprAB	Fri3-5	4F204	Sugiyama Fumihiro, Mizuno Seiya, Murata Kazuya	The course aims to equip students with understanding proper conduct of animal experiment and generation of gene-modified mice. Students also acquire basic skills for mouse handling and embryo manipulation. Upon completion of this course, students will be able to discuss the use of gene-modified mice for studying human diseases.	Lecture is conducted in English.

#### Major Subjects

Course Number	Course Name	Instru- ctional Type	Credit s	stand- ard regist- ration year	Term	Meeting Days, Per- iod etc.	Classro- om	Instructor	Course Overview	Remarks
01EQ050	English Discussion & Presentation on Medical Sciences I	2	2.0	1, 2	SprAB	Fri1,2		Irie Kenji, Suzuki Hiroyuki, Mizuno Tomoaki, Suda Yasuyuki	Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges.	Lecture is conducted in English.
01EQ051	English Discussion & Presentation on Medical Sciences II	2	2.0	1, 2	Fall AB	Wed1,2		Irie Kenji, Kato Mitsuyasu, Kawaguchi Atsushi, Takahashi Satoru, Suzuki Hiroyuki, Mizuno Tomoaki, Suda Yasuyuki, Funakoshi Yuji	Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges.	Lecture is conducted in English. Hybrid or Others 対面とオンラインの併用
01EQ106	Oncology	1	2.0	1	Fall AB	Mon/Tue 4	4F204	Noguchi Masayuki, Irie Kenji, Kato Mitsuyasu, Sakurai Hideyuki, Sato Yukio, Sekine Ikuo, Chiba Shigeru, Hisatake Koji, Masumoto Koji, Kojima Takahiro, Suzuki Hiroyuki, Takayashi Norio, Minaguchi Takeo, Mori Kensaku, Kato Kosuke, Funakoshi Yuji	The aim of this subject is to learn disease entity, etiology and progression mechanism of malignant tumor. Clinical application of the basic knowledge for diagnosis and treatment is also covered.	Lecture is conducted in English. Online (Asynchronous)
01EQ107	Pharmacology	1	1.0	1	SprAB	Mon5	4F204	Masu Masayuki, Sakurai Takeshi, Ohbayashi Norihiko, Shiomi Kensuke, Keino-Masu Kazuko, Okada Takuya, Funakoshi Yuji	The objective of this course is to learn the basic knowledge of pharmacology in the medical field. The students will study the interaction between the living body and endogenous or exogenous biological substances at the genetic, cellular, and individual levels and learn basic principles of drugs and toxins.	Lecture is conducted in English.

01EQ131	Human Infection and Immunology	1	2.0	1	SprAB	Mon3, 4	4F204	Shibuya Kazuko, Kawaguchi Atsushi, Morikawa Kazuya, Ho Kiong, Matsumoto Isao, Tahara Satoko, Tsuboi Hiroto, Oda Chigusa, NABEKURA TUKASA	To understand infection biology and immunology is the basis to develop a strategy for control of infectious diseases all over the world. In this course, students study the molecular mechanism of replication and pathogenicity of infectious microbes such as viruses and bacteria, and the structure and function of microbes-encoded factors and host cell-derived factors involved in the replication and pathogenicity. In addition, students also study the immune system, including adaptive and innate immunities, which is crucial for human health and survival.	Code share with HBP Lecture is conducted in English.
01EQ109	Genome Medicine	1	2.0	1, 2	Fall IAB	Tue5, 6	4F204	Noguchi Emiko, Sekine Ikuo, Takekoshi Kazuhiro, Tsuchiya Naoyuki, Noguchi Masayuki, Homma Masato, Muratani Masafumi, Morikawa Kazuya, Fukushima Hiroko, Miyadera Hiroko	ゲノム科学の基本原理とその医学への応用方法を修得する。このために、人類遺伝学、遺伝医学、ゲノム疫学に関する主要な原理について解説を受けた後、診断・治療におけるゲノム診断とパーソナルゲノム情報の臨床応用に言及して、ゲノム情報を疾患の診断・予防・治療に役立てるための方法と課題について学習する。	Online Lecture is conducted in English.
01EQ132	Stem Cell Therapy	1	1.0	1	SprAB	Thu3		Ohneda Osamu, Yamashita Toshiharu, Vuong Cat Khanh	The objective of this class is to learn basic knowledge and the latest research progress on regenerative medicine and stem cell biology fields by reading original articles. In addition, this class aims to improve individual ability to extract the point at issue of the article and discuss with other participants. Students read the latest original articles on regenerative medicine and stem cell biology and perform presentation. Students are expected to understand research purpose, methods, results, and to have a discussion about significance or problem of the article.	Code share with HBP Lecture is conducted in English. online
01EQ119	Critical Path Research Management	1	2.0	1	Fall IAB	Mon6, 7	4F204	Hashimoto Koichi, Matsusaka Satoshi, Muratani Masafumi, Tsurushima Hideo, Machino Takeshi, Yamada Takeshi	This course aims to equip students with an acquiring of the basic knowledge and skill to be needed for the promotion of various research and development projects.	【橋必修】 Lecture is conducted in English. Hybrid or Others
01EQ120	Frontier Science in Drug Discovery	1	1.0	1, 2	Fall IAB	Wed5	4F204	Takahashi Satoru	Scientific advancements during the past two decades have created a paradigm shift in drug discovery process from the traditional approach including long experiences and contingencies to innovative methods, which are based on logical approach utilizing the latest in computational simulation technology. The recent progress includes genome-wide identification of successful drug-target proteins and in silico designing and screening of lead compounds with the techniques of combinatorial chemistry. In addition, there has been remarkable progress in the field of ADME assessment and drug delivery system. This program will be focused on the fundamentals of the process of the drug discovery and development and strengthening of medical-pharmaceutical relations.	Code share with HBP and Hx Lecture is conducted in English. Hybrid or Others 対面とオンライン(オンデマンド型)の併用
01EQ402	Epidemiology	1	2.0	1, 2	Fall IAB	Tue3, 4	4F305	Wagatsuma Yukiko	The fundamental concepts and uses of epidemiology, and its role in formulating principles, are examined. The uses of information science and statistics in epidemiological and clinical researches are studied, and the role that these fields can play in EBM (Evidence-Based Medicine) are also examined. Exercises are conducted in which epidemiological methods are utilized, to promote understanding of the practice of this discipline.	Lecture is conducted in English. Hybrid or Others In class and on demand (Hybrid)

01EQ420	Environmental Health Perspective	1	2.0	1, 2					Kumagai Yoshito, Yasuhiro Shinkai	We are exposed to a variety of environmental stresses on a daily basis through living environments, lifestyles, and dietary habits. For example, while we take the nutrients necessary for life support through our diet, overload and deficiency of the nutrients impair health. It is also little doubt that chemicals contaminated in water and foods affect human health, resulting in occurrence of a variety of diseases. In this lecture, first of all, the students will learn 1) fundamental biochemistry (e.g., metabolism and synthesis) of the five major nutrients (carbohydrates, lipids, proteins, vitamins, and minerals) in the body, 2) role of such nutrients in the body development/maintenance and aging, 3) onset of various diseases caused by excessive and deficient the nutrients, and 4) intake of the nutrients from food. Next, we will learn the health hazards caused by environmental pollutants contaminated in water and food.	オンライン(オンデマンド型)manaba, stream Identical to 01AD605. Lecture is conducted in English. Not open in 2021.
01EQ517	Health Care Policy and Management	1	1.0	1, 2	Fall AB	Thu3	4F204		Kondo Masahide, Okubo Reiko	1 To understand basic theories of health care policy science and challenges of health systems worldwide. 2 To understand health systems and challenges in Japan. Goal: To be able to argue issues of health systems based on basic theories from the viewpoint of health policy sciences.  (1) Introduction: health, health care and policy, (2) Determinants of health and policy, (3) Role of state and health system, (4) Japan's health care provision system, (5) Japan's health care financing system, (6) Practice of health policy sciences, (7) Topics in global health policy, (8) Health policy process, (9) Health planning and management, (10) Health policies beyond health care policy.	【公必修】Code share with GIP-TRIAD. Lecture is conducted in English. Online (Asynchronous)
01EQ518	Health Service Administration	1	1.0	1, 2	Fall AB	Thu4	4F204		Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Inokuchi Ryota, Iwagami Masao, Morita Kojiro	To understand the approach of health service administration and management in various fields of health care.	Lecture is conducted in English. In class or on demand
01EQ511	Introduction of Health Services Research	1	1.0	1, 2	Spr AB	Thu4	4F305		Tamiya Nanako, Sakata Nobuo, Sugiyama Takehiro, Ito Tomoko, Iwagami Masao	This course is designed for students to understand the basic concept of "Health Services Research" that scientifically evaluates and analyzes the quality of service (including hospitals, facility care and in-home care) in the field of public health and welfare.	【公必修】国際地域研究専攻とコードシェア Lecture is conducted in English. 対面またはオンデマンド
01EQ039	Medical Science Seminar II: Biochemistry and Molecular Biology	1	1.0	1, 2	Annual	by appointment			Irie Kenji	医学生物学研究の最前線にいる研究者によるセミナーに出席し、最新の知識を学び、研究の進んでいく過程を具体的に理解する。	
01EQ040	Medical Science Seminar III: Immunology	1	1.0	1, 2	Annual	by appointment			Shibuya Kazuko	免疫学および関連科学分野における最新のトピックスに関するセミナーに出席し、専門研究者の討論に参加する。学んだ内容や印象をレポートにまとめる。	
01EQ053	Medical Science Seminar VI: epidemiology and biostatistics	1	2.0	1, 2	Annual	Tue6	4G121		Wagatsuma Yukiko, Goshō Masahiko, Iwagami Masao	This course assists students in learning steps through the discussions over textbooks and articles in epidemiology and biostatistics. We encourage students majoring in epidemiology and biostatistics should attend the course.	【公必修】 Lecture is conducted in English. Online (Synchronous)