

Master's Program in Medical Sciences

| Course Number | Course Name                      | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks  |
|---------------|----------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ001       | Human Anatomy: Lecture           | 1           | 2.0     | 1                      | SprAB                | Wed1, 2            | 4F204     | Takashi Shiga, Michito Hamada, Fumihiko Shutoh   | 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。<br>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          |           | Takashi Shiga, Tomoyuki Masuda   | 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。  |  |
| 01EQ045       | Lecture in Human Physiology      | 1           | 1.0     | 1                      | SprA                 | Thu4, 5            |           | Munetaka Shidara, Masayuki Matsumoto, Shigeru Ozaki, Tadachika Koganezawa, Takashi Mizuhiki  | Understanding human physiological functions. Topics include blood circulation, respiration, motor control and reflex, prefrontal cortex, midbrain dopamine neurons, visual recognition, motivation and emotion, etc.  | Lectures are conducted in English.   |
| 01EQ046       | Topics in Biochemistry           | 1           | 1.0     | 1                      | SprAB                | Mon1               |           | Aya Fukuda, Kenji Irie, Koji Hisatake, Kazuhiko Uchida, Ken Nishimura, Kensuke Shiomi, Kazuko Keino-Masu, Yuji Funakoshi, Tomoaki Mizuno   | 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。  | Lectures are conducted in English.   |
| 01EQ004       | Clinical Medicine                | 1           | 2.0     | 1                      | FallAB               | Tue1, 2            | 4F204     | Junichi Shoda, Yasushi Kawakami, Takeji Sakae, Takayuki Sumida, Akira Tamaoka, Shigeru Chiba, Hiroyuki Nishiyama, Haruhiko Ninomiya, Manabu Minami, Kazuhiro Takekoshi, Kazumasa Isobe, Tetsuhiro Maeno, Taichi Hayashi  | 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」   |
| 01EQ005       | Introduction to Social Medicine  | 1           | 2.0     | 1                      | SprAB                | Thu1, 2            | 4F204     | Masao Ichikawa, Yuichi Oi, Yasukazu Ogai, Masahide Kondo, Shinichiro Sasahara, Naoyuki Tsuchiya, Katsuya Honda, Nobuaki Morita, Hisako Yanagi, Kazumasa Yamagishi, Yukiko Wagatsuma, Masahiko Gosyo, Ai Hori, Tamaki Saito, Yukiko Sugano, Ganchimeg Togoobaatar | 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】<br>【ヒ必修】電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English. |

| Course Number | Course Name                                     | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom    | Instructor   | Course Overview   | Remarks   |
|---------------|---|-------------|---------|------------------------|----------------------|--------------------|--------------|--|---|---|
| 01EQ006       | Selected Topics in International Health         | 1           | 1.0     | 1, 2                   | Fall/AB              | Thu2               |              | Mizuho Fukushima, Yukiko Wagatsuma, Masahide Kondo   | The aim of this course is to learn the fundamentals of international health and issues on health in developing countries and international cooperation to deal with them.   | 電子・物理工学専攻「医工学コース」、国際地域研究専攻 Code share with Graduate School of Humanities and Social Sciences Identical to 01D2596. Lectures are conducted in English. |
| 01EQ007       | Introduction to Epidemiology                    | 1           | 1.0     | 1, 2                   | SprAB                | Tue3               | 4F305        | Yukiko Wagatsuma, Mizuho Fukushima   | 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.  | 【公必修】電子・物理工学専攻「医工学コース」 Lectures are conducted in English.   |
| 01EQ008       | Topics in Medical Science                       | 1           | 1.0     | 1, 2                   | SprC                 | by appointment     |              | Kenji Irie   | 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、その議評技法、現代医学の限界や今後の展望について学習する。  |   |
| 01ZZ106       | Bioethics in medical research and practice      | 0           | 1.0     | 1 - 5                  | SprC                 | Fri5, 6            | 4F204        | Emiko Noguchi, Yukiko Wagatsuma, Fumihiko Sugiyama, Hisako Yanagi, Yoshiyuki Kizawa, Yukiko Sugano | 遺伝子治療、臓器移植、人工臓器、生殖医療、遺伝子診療、薬物やその他の治療法の治験などの現代の医療や医学研究には、インフォームドコンセント、個人の尊厳やプライバシー、脳死判定やリスキーマネジメント、治療停止の選択など生命倫理にかかわる多くの問題を含んでいる。現代医療が抱える生命倫理諸問題の基礎知識、基本的考え方を習得するとともに、実例により学ぶ。   | Identical to 01EQ009.   |
| 01EQ010       | Applied Medical Information Technology: Lecture | 1           | 1.0     | 1                      | SprAB                | Fri6               | 4F204        | Makoto Ohara   | いわゆる「電子カルテ」システムの概要を理解し、その上で医療情報とその処理技術がいかに現代の我が国の医療を支え、病院の機能を支えているかを理解し、これからの医療をいかに発展させ得るかをサーベイし、理想的な医療の実践プランについて考える。   |   |
| 01EQ011       | Biostatistics                                   | 1           | 1.0     | 1                      | SprAB                | Wed3               | 4F204        | Masahiko Gosyo, Kazushi Maruo  | 医科学領域における統計学的アプローチの具体的方法について学ぶ。検定、推定、相関、回帰、分散分析、多変量解析、生存時間分析など、特に応用の広い重要な手法を理解し、正しく手法を用いるための基礎を学ぶ。  | 【橋必修】【公必修】電子・物理工学専攻「医工学コース」 Lectures are conducted in English.  |
| 01EQ012       | Biostatistics in Practice                       | 3           | 1.0     | 1                      | SprAB                | Wed6, 7            | 4B212        | Masahiko Gosyo, Kazushi Maruo  | 統計解析ソフトウェアを用いて、医学データ解析に用いられる統計手法の実践について学ぶ。  | Lectures are conducted in English.  |
| 01EQ013       | English in Medical Science and Technology I     | 1           | 1.0     | 1                      | SprAB                | Mon2               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis   | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】 Lectures are conducted in English.  |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom    | Instructor   | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|--------------|--|---|--|
| 01EQ014       | English in Medical Science and Technology II                   | 1           | 1.0     | 1                      | Fall/AB              | Mon5               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】<br>Identical to 01ER105. Lectures are conducted in English.  |
| 01EQ016       | Lecture and Seminar on Research Management (Basic)             | 1           | 1.0     | 1                      | SprC                 | by appointment     | 4F204        | Koichi Hashimoto                                     | 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     |              | Chair of Medical Sciences                            | 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】<br>Lectures are conducted in English.                        |
| 01EQ019       | Internship I   | 3           | 1.0     | 1, 2                   | Annual               | by appointment     |              | Chair of Medical Sciences                            | 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】 【医物必修】 【橋必修】   |
| 01EQ020       | Internship II  | 3           | 1.0     | 1, 2                   | Annual               | by appointment     |              | Chair of Medical Sciences                            | 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.   |  |
| 01EQ023       | Seminar on Basic Medical Sciences                              | 2           | 3.0     | 1                      | Annual               | by appointment     |              | Chair of Medical Sciences                            | 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】<br>Lectures are conducted in English.                       |
| 01EQ047       | International Medical Sciences Exchange Program I              | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |              | Kazuya Morikawa, Tadachi Ka Koganezawa, Kiong Ho     | 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.   | Lectures are conducted in English.                                 |
| 01EQ048       | International Medical Sciences Exchange Program II             | 1           | 2.0     | 1, 2                   | Annual               | by appointment     |              | Kazuya Morikawa, Tadachi Ka Koganezawa, Kiong Ho     | 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.   | Lectures are conducted in English.                                 |
| 01EQ049       | International Medical Sciences Exchange Program III            | 1           | 3.0     | 1, 2                   | Annual               | by appointment     |              | Kazuya Morikawa, Tadachi Ka Koganezawa, Kiong Ho     | 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.   | Lectures are conducted in English.                                 |
| 01EQ025       | Seminar for International Students                             | 1           | 1.0     | 1, 2                   |                      |                    |              |  | This course provides international students with an opportunity to get prepared for disasters they might face in Japan.   | 【留学生対象】<br>Lectures are conducted in English.<br>Not open in 2018. |
| 01EQ038       | Medical Science Seminar I: Brain Science Seminar               | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |              | Takashi Shiga  | 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     |              | Koji Hisatake  | 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。  |  |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ040       | Medical Science Seminar III: Immunology                    | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |           | Akira Shibuya   | 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     |           | Hisako Yanagi, Tetsuhiro Maeno  | 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.   |  |
| 01EQ042       | Medical Science Seminar V: Career Path                     | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |           | Makoto Kobayashi, Kenji Irie, Satoko Tahara, Keiko Ookawa, Yumi Kanemaru, Aya Shiba, Michito Hamada, Keiko Fujie, Seiya Mizuno, Seiji Segawa, Yukihide Watanabe | Visiting lecturers including alumni, from a variety of medical fields will make lecture about their business, life, future and school days story. You will also have opportunity to make a group discussion and/or interview with them, and to improve your presentation skills.<br>1. Experiences of Alumni (Career Path Development): Lecture<br>2. Group discussion with alumni, seniors, faculties and classmates<br>3. Writing and speaking practice | 【医必修】 【橋必修】<br>Lectures are conducted in both English and Japanese.  |
| 01EQ043       | Medical Science Seminar VI: epidemiology and biostatistics | 1           | 1.0     | 1, 2                   | Annual               | Tue6               |           |   | 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.  | Subject to the enrolled students in or before 2014. Conducted in the classroom 4G121. Lectures are conducted in English. |
| 01EQ053       | Medical Science Seminar VI: epidemiology and biostatistics | 1           | 2.0     | 1, 2                   | Annual               | Tue6               |           | Mizuho Fukushige, Yukiko Wagatsuma, Masahiko Gosyo  | 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.  | Subject to the enrolled students in or after 2015. Conducted in the classroom 4G121. Lectures are conducted in English.  |
| 01EQ060       | Medical Science Seminar VII: Seminar of Clinical Study     | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |           | Koichi Hashimoto  | 臨床研究の倫理・専門職のセミナーに出席し、GCP (Good Clinical Practice)、人を対象とする医学系研究に関する倫理指針、臨床研究実施体制などに関して理解する。  | 【橋必修】  |

| Course Number | Course Name                  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview  | Remarks |
|---------------|------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|--|---------|
| 01EQ031       | Outline of Internal Medicine | 1           | 2.0     | 1                      | Fall/AB              | Wed7<br>Thu6       | 4F204     | Kunihiro Yamagata, Kazutaka Aonuma, Yasushi Kawakami, Keisuke Kuga, Hitoshi Shimano, Takayuki Sumida, Akira Tamaoka, Shigeru Chiba, Hiromi Hamada, Nobuyuki Hizawa, Ichinosuke Hyodo, Tetsuhiro Maeno, Shigeyuki Watanabe, Masato Abei, Yasushi Okoshi, Tomohiro Kamoda, Yoshihiro Seo, Yuichi Hasegawa, Akiko Ishii, Yayoi Miyazono, Yuko Morishima | 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。 |         |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview  | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---|--|--|
| 01EQ032       | Outline of Surgical Disorders                            | 1           | 1.0     | 1                      | Fall/AB              | Thu5               | 4F204     | Yukio Sato, Yuji Hiramatsu, Koji Masumoto, Akira Matsumura, Yoshiaki Inoue, Hajime Mishima, Tetsuro Wada, Shumpei Miyakawa      | 外科学の概要を、各科の基本的疾患を中心にそれらの疾患概念、発症機序、診断、治療について学ぶ。   |  |
| 01EQ033       | Innovative Clinical Biochemistry in Life Science         | 1           | 2.0     | 1                      | Fall/AB              | Thu1,2             | 4F305     | Hitoshi Shimano, Yasushi Kawakami, Akira Tamaoka, Shigemi Hitomi, Hiroaki Suzuki, Shigeru Yatoh, Naoya Yahagi, Hiroyuki Suzuki  | 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. |  |
| 01EQ034       | Laboratory Medicine                                      | 1           | 1.0     | 1, 2                   | Fall/AB              | Fri3               | 4F204     | Yasushi Kawakami, Kazuhiko Takekoshi, Kazuyoshi Yamauchi, Tomoko Ishizu, Kazumasa Isobe, Takayasu Kato                          | 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。   |  |
| 01EQ050       | English Discussion & Presentation on Medical Sciences I  | 2           | 2.0     | 1, 2                   | Spr/AB               | Fri1,2             |           | Kenji Irie, Hiroyuki Suzuki, Tomoaki Mizuno, Yasuyuki Suda  | 英語による論文紹介と討論、インターネット回線を使った国立台湾大学、京都大学との交流授業を通して、生命科学の知識、および英語によるサイエンスコミュニケーション能力を身につける。<br><br>Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges  | Lectures are conducted in English.   |
| 01EQ051       | English Discussion & Presentation on Medical Sciences II | 2           | 2.0     | 1, 2                   | Fall/AB              | Wed1,2             |           | Kenji Irie, Mitsuyasu Kato, Satoru Takahashi, Hiroyuki Suzuki, Atsushi Kawaguchi, Yasuyuki Suda, Yuji Funakoshi, Tomoaki Mizuno | 英語による論文紹介と討論、インターネット回線を使った国立台湾大学、京都大学との交流授業を通して、生命科学の知識、および英語によるサイエンスコミュニケーション能力を身につける。<br><br>Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges  | Identical to 01ER233. Lectures are conducted in English.                                 |
| 01EQ052       | Prominent Discoveries in Neuroscience                    | 1           | 1.0     | 1, 2                   | Spr/A                | Tue/Thu7           |           | Masashi Yanagisawa, Hiroshi Nagase, Masanori Sakaguchi, Michael Lazarus, Hiromasa Funato, Qinghua Liu, Yoshihiro Urade          | 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 Identical to 01RC105 and 02RA185. Lectures are conducted in English. |
| 01EQ054       | Scientific English for Neuroscience                      | 1           | 2.0     | 1                      | Fall/AB              | by appointment     |           | Tadachika Koganezawa  | Communication skills in Neuroscience Research  | The class is held at University of Bordeaux. Lectures are conducted in English.          |

| Course Number | Course Name                            | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor           | Course Overview  | Remarks   |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|----------------------|--|---|
| 01EQ055       | Neural Network                         | 1           | 3.0     | 1                      | Fall AB              | by appointment     |           | Tadachika Koganezawa | Systematic understanding of the basic functioning of the networks of the central nervous system  | The class is held at University of Bordeaux. Lectures are conducted in English.   |
| 01EQ056       | Cognitive Neuroscience                 | 1           | 3.0     | 1                      | Fall AB              | by appointment     |           | Tadachika Koganezawa | Understanding of the overarching relationships between cognition and biology.  | The class is held at University of Bordeaux. Lectures are conducted in English.   |
| 01EQ057       | Cellular and Molecular Neurobiology    | 1           | 3.0     | 1                      | Fall AB              | by appointment     |           | Tadachika Koganezawa | Systematic understanding of the cellular and molecular aspects of Neuroscience   | The class is held at University of Bordeaux. Lectures are conducted in English.   |
| 01EQ061       | Scientific Ethics                      | 1           | 1.0     | 1, 2                   | Spr AB               | Wed 4              |           | Bryan James Mathis   | 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 Identical to 02RA065. Lectures are conducted in English. |
| 01EQ062       | Scientific Critical Reading & Analysis | 1           | 1.0     | 1, 2                   | Spr AB               | Thu 6              |           | Bryan James Mathis   | 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. | Lectures are conducted in English.  |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks   |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---|
| 01EQ101       | Human Pathology: Lecture                             | 1           | 2.0     | 1                      | Spr AB               | Wed 5, 6           | 4F204     | Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Noriko Uesugi, Hiroyuki Suzuki, Norio Takayashiki, Shingo Sakashita, Junko Kano | ヒトの代表的な病気の概念と発病のメカニズムについて学ぶ。または病気の診断や治療方針の決定などに際して病理診断の重要性について理解する。   | 電子・物理工学専攻「医工学コース」Lectures are conducted in English. |
| 01EQ102       | Laboratory Animal Science and Animal Experimentation | 5           | 2.0     | 1                      | Spr AB               | Fri 3-5            | 4F204     | Fumihiro Sugiyama, Seiya Mizuno  | 医科学実験の基礎である実験動物学について、実験動物の基礎知識、遺伝統御、環境統御、微生物統御、各種実験動物の特性と取扱い法、動物実験の倫理、基本的な動物実験手法を学ぶ。さらに、トランスジェニックマウスやノックアウトマウス作製原理とそのための発生活工学手法についても学ぶ。 | Lectures are conducted in English.                  |

| Course Number | Course Name                                | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                                    | Course Overview   | Remarks |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|---------|
| 01EQ103       | Functional Structure and Laboratory Course | 5           | 2.0     | 1                      | Spr AB               | Tue 4-6            | 4F305     | Yosuke Takei, Fumihiro Shutoh, Michito Hamada | 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。 |         |

| Course Number | Course Name                    | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks  |
|---------------|--------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ106       | Oncology                       | 1           | 2.0     | 1                      | FallAB               | Mon/Tue 4          | 4F204     | Masayuki Noguchi, Kenji Irie, Mitsuyasu Kato, Hideyuki Sakurai, Yukio Sato, Shigeru Chiba, Koji Hisatake, Ichinosuke Hyodo, Manabu Minami, Shingo Sakashita, Hiroyuki Suzuki, Norio Takayashiki, Yuji Mizokami, Takeo Minaguchi, Koji Kawai, Shoko Saito, Aya Shiba | This subject is aiming to understand disease entity, etiology, and the progression mechanism of malignant tumor at the molecular level. The topics of the latest tumor research (basic) and diagnostic treatment (clinical) are also covered while aiming at acquiring basic knowledge.   | Identical to 01ER234. Lectures are conducted in English. |
| 01EQ107       | Pharmacology                   | 1           | 1.0     | 1                      | SprAB                | Mon5               | 4F204     | Masayuki Masu, Takeshi Sakurai, Kensuke Shiomi, Kazuko Keino-Masu, Yoshihiro Miwa, Yuji Funakoshi, Keiji Miyata, Takuya Okada   | 1. 医学領域における薬理学の概念について学ぶ。<br>2. 生体と内因性及び外因性生体活性物質の相互作用を分子、遺伝子、細胞、個体レベルで学び、薬物・毒物の薬理作用の基本について学ぶ。   | Lectures are conducted in English.                       |
| 01EQ131       | Human Infection and Immunology | 1           | 2.0     | 1                      | SprAB                | Mon3, 4            |           | Akira Shibuya, Takayuki Sumida, Kazuya Morikawa, Shinji Saito, Kazuko Shibuya, Kaoru Takeuchi, Kiong Ho, Satoko Tahara, Chigusa Oda, Atsushi Kawaguchi  | 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 Lectures are conducted in English.   |
| 01EQ109       | Genome Medicine                | 1           | 2.0     | 1, 2                   | FallAB               | Tue5, 6            | 4F204     | Emiko Noguchi, Kazuhiro Takekoshi, Naoyuki Tsuchiya, Masayuki Noguchi, Masato Homma, Kazuya Morikawa, Hiroshi Furukawa, Masafumi Muratani, Koji Kawai, Hiroko Fukushima, Hiroko Miyadera  | ゲノム科学の基本原則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。   | Lectures are conducted in English.                       |
| 01EQ111       | Biomedical Engineering         | 1           | 1.0     | 1                      | SprAB                | Tue2               | 4F204     | Hirotohi Miyoshi, Keiko Ookawa, Kenichi Yanagi, Yukio Nagasaki  | 疾病の診断と治療に広く用いられている医用電子機器、生体情報計測装置、治療用医用機器及び人工臓器の基礎理論と臨床応用の実際を学ぶ。また、血液循環系を対象として、力学的特性やバイオメカニクス概念についても学習する。   | Only for students who can understand Japanese.           |

| Course Number | Course Name                            | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview  | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---|--|--|
| 01EQ132       | Stem Cell Therapy                      | 1           | 1.0     | 1                      | SprAB                | Thu3               |           | Osamu Ohneda, Toshiharu Yamashita   | 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 Lectures are conducted in English.         |
| 01EQ114       | Radiological Science                   | 1           | 2.0     | 1                      | FallAB               | Fri1,2             | 4F204     | Manabu Minami, Takeji Sakae, Koji Tsuboi, Hiroaki Kumada, Kiyoshi Yasuoka, Hideyuki Sakurai, Tomonori Isobe | 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。  |  |
| 01EQ115       | Psychiatry                             | 1           | 1.0     | 1                      | FallAB               | Mon3               | 4F204     | Tetsuaki Arai, Kiyotaka Nemoto, Shinji Higashi, Asaki Matsuzaki   | 精神医学の基礎知識を学び、精神神経疾患の臨床的特徴を把握する。その上で遺伝子解析やプロテオミクスによる蛋白質解析の手法により、これら疾患の病因を探索する。  |  |
| 01EQ117       | Clinical Gerontology                   | 1           | 1.0     | 1                      | FallAB               | Fri7               | 4F204     | Akira Tamaoka, Hideo Terashima, Hirofumi Matsui, Hisako Yanagi  | 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。  |  |
| 01EQ118       | Pharmaceutical Sciences                | 1           | 1.0     | 1                      | FallAB               | Wed6               |           | Masato Homma, Kentaro Hatano, Kosuke Doki   | 薬物による生体機能制御では、体内動態(体液・組織中濃度)が重要である。1)薬物動態解析方法、2)薬物動態を制御する製剤開発、3)薬物動態に影響する薬物代謝酵素及び輸送タンパクの基礎知識と研究方法について学ぶ。   |  |
| 01EQ119       | Critical Path Research Management      | 1           | 2.0     | 1                      | FallAB               | Mon6,7             | 4F204     | Koichi Hashimoto  | 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】 Identical to 01ER232. Lectures are conducted in English. |
| 01EQ133       | Regulatory Science of Medical Products | 1           | 1.0     | 1                      | FallABC              | by appointment     |           | Koichi Hashimoto  | 医薬品・医療機器の開発はの薬事法による規制を遵守して実施しなければならない。薬事法による規制と承認審査について体系的に理解する。また、医薬品・医療機器等の品質・安全性・有効性の試験結果を的確に評価するための基盤となる科学(レギュラトリーサイエンス)の概念についても学習する。  | 【橋必修】  |
| 01EQ134       | Appropriate Technology                 | 1           | 3.0     | 1, 2                   | Annual               | by appointment     |           | Kenji Irie  | 現地のニーズ、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。<br>In terms of local needs, cultures, environments, and people, Appropriate Technology provides opportunities for the students to develop the optimum technology needed for targeted communities and to generate problem-solving skills, improvisational capabilities, and entrepreneurial abilities for future social needs.  | Lectures are conducted in English.                             |



| Course Number | Course Name                        | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                        | Course Overview  | Remarks  |
|---------------|------------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|-----------------------------------|--|--|
| 01EQ120       | Frontier Science in Drug Discovery | 1           | 1.0     | 1, 2                   | Fall/AB              | Wed5               |           | Satoru Takahashi                  | 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 Lectures are conducted in English.               |
| 01EQ406       | Environmental Health Perspective   | 1           | 2.0     | 1, 2                   | Fall/AB              | Fri3, 4            | 4E608     | Yoshito Kumagai, Shinkai Yasuhiro | There are numerous chemical substances in the environment, resulting in some serious effects on the body. However, current molecular studies suggest that illnesses caused by exposure to environmental chemicals are, at least in part, attributable to the interaction with macromolecules like proteins in the organism. This lecture offers an opportunity to learn about a variety of symptoms caused by exposure of humans to environmental chemical and initial response and cellular protection against such chemicals.  | Identical to 01AD605 and 01ER102. Lectures are conducted in English. |

| Course Number | Course Name                                | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks                                  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ001       | Human Anatomy: Lecture                     | 1           | 2.0     | 1                      | Spr/AB               | Wed1, 2            | 4F204     | Takashi Shiga, Michito Hamada, Fumihiro Shutoh   | 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。<br>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「理工学コース」                  |
| 01ZZ106       | Bioethics in medical research and practice | 0           | 1.0     | 1 - 5                  | Spr/C                | Fri5, 6            | 4F204     | Emiko Noguchi, Yukiko Wagatsuma, Fumihiro Sugiyama, Hisako Yanagi, Yoshiyuki Kizawa, Yukiko Sugano | 遺伝子治療、臓器移植、人工臓器、生殖医療、遺伝子診療、薬物やその他の治療法の治験などの現代の医療や医学研究には、インフォームドコンセント、個人の尊厳やプライバシー、脳死判定やリスキューメント、治療停止の選択など生命倫理にかかわる多くの問題を含んでいる。現代医療が抱える生命倫理諸問題の基礎知識、基本的考え方を習得するとともに、実例により学ぶ。 | Identical to 01EQ009.                    |
| 01EQ023       | Seminar on Basic Medical Sciences          | 2           | 3.0     | 1                      | Annual               | by appointment     |           | Chair of Medical Sciences  | 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】Lectures are conducted in English. |

| Course Number | Course Name                 | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks |
|---------------|-----------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|---------|
| 01EQ201       | Medical Physics IA: Lecture | 1           | 2.0     | 1                      | Spr/AB               | Wed7, 8            |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka | Radiation physics is learned in the field of medical physics. Audio, video and electronic materials are effectively used in this lecture. | 【医物必修】  |

| Course Number | Course Name                  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks |
|---------------|------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---------|
| 01EQ208       | Medical Physics IB: Lecture  | 1           | 2.0     | 1                      | Fall AB              | Fri 5, 6           |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                                    | Radiation measurement is learned in the field of medical physics. Audio, video and electronic materials are effectively used in this lecture. | 【医物必修】  |
| 01EQ202       | Medical Physics II: Lecture  | 1           | 2.0     | 1                      | Fall AB              | Fri 7, 8           |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                                    | 医学物理分野の治療領域における臨床応用技術の一部として、放射線治療物理学について教授する。なお、本講義では視聴覚教材や電子教材を有効活用する。   | 【医物必修】  |
| 01EQ203       | Medical Physics III: Lecture | 1           | 2.0     | 1                      | Fall C               | by appointment     |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                                    | 医学物理分野の診断領域における臨床応用技術の一部として、放射線診断および核医学に関する物理学と診断学について教授する。なお、本講義では視聴覚教材や電子教材を有効活用する。   | 【医物必修】  |
| 01EQ204       | Medical Physics IV: Lecture  | 1           | 2.0     | 1                      | Fall C               | by appointment     |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                                    | 医学物理分野の情報工学における臨床応用技術の一部として、情報処理や画像工学について教授する。なお、本講義では視聴覚教材や電子教材を有効活用する。  | 【医物必修】  |
| 01EQ205       | Medical Physics V: Lecture   | 1           | 2.0     | 1                      | Fall C               | by appointment     |           | Takeji Sakae, Hideyuki Sakurai, Koji Tsuboi, Toshiyuki Okumura, Hitoshi Ishikawa, Tomonori Isobe | 医学物理分野のなかでも特に放射線診断に関連する物理学、および情報処理や画像工学について教授する。なお、本講義では視聴覚教材や電子教材を有効活用する。  | 【医物必修】  |
| 01EQ206       | Medical Physics Seminar      | 2           | 1.0     | 1                      | Spr C                | Thu 7, 8           |           | Takeji Sakae, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                                    | 医学物理学は理工学の知識と成果を医学に応用する分野である。この分野に携わる研究者は、何か問題が生じたときに解決手段を見いだす能力を持たなければならない。本演習では、幾つかの課題を解くことで、医学物理分野における種々の問題を解決する能力を養う。                     | 【医物必修】  |
| 01EQ207       | Medical Physics Practice     | 3           | 1.0     | 1                      | Fall C               | Thu 7, 8           |           | Takeji Sakae, Toshiyuki Okumura, Tomonori Isobe, Hiroaki Kumada, Kiyoshi Yasuoka                 | 医学物理学は理工学の知識と成果を医学に応用する分野である。この分野に携わる研究者は、何か問題が生じたときに解決手段を見いだす能力を想定したテーマの実習により、問題解決型の実用的な知識と技術を養う。  | 【医物必修】  |

| Course Number | Course Name       | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview  | Remarks                |
|---------------|-------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|--|------------------------|
| 01EQ004       | Clinical Medicine | 1           | 2.0     | 1                      | Fall AB              | Tue 1, 2           | 4F204     | Junichi Shoda, Yasushi Kawakami, Takeji Sakae, Takayuki Sumida, Akira Tamaoka, Shigeru Chiba, Hiroyuki Nishiyama, Haruhiko Ninomiya, Manabu Minami, Kazuhiro Takekoshi, Kazumasa Isobe, Tetsuhiro Maeno, Taichi Hayashi | 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」 |

| Course Number | Course Name                     | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks   |
|---------------|---------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---|
| 01EQ005       | Introduction to Social Medicine | 1           | 2.0     | 1                      | SprAB                | Thu1, 2            | 4F204     | Masao Ichikawa, Yuichi Oi, Yasukazu Ogai, Masahide Kondo, Shinichiro Sasahara, Naoyuki Tsuchiya, Katsuya Honda, Nobuaki Morita, Hisako Yanagi, Kazumasa Yamagishi, Yukiko Wagatsuma, Masahiko Gosyo, Ai Hori, Tamaki Saito, Yukiko Sugano, Ganchimeg Togoobaatar | 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】<br>【ヒ必修】 電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.                  |
| 01EQ508       | Health Economics                | 1           | 1.0     | 1, 2                   | FallC                | Intensive          | 4F204     | Masahide Kondo   | As a foundation of health economics, microeconomics, welfare economics, and new institutional economics in health care are explained in order to nurture a view of the health system as a market for health care.   | 【橋必修】 【公必修】<br>国際地域研究専攻とコードシェア<br>Identical to 01D2512.<br>Lectures are conducted in English. |
| 01EQ011       | Biostatistics                   | 1           | 1.0     | 1                      | SprAB                | Wed3               | 4F204     | Masahiko Gosyo, Kazushi Maruo  | 医学領域における統計学的アプローチの具体的な方法について学ぶ。検定、推定、相関、回帰、分散分析、多変量解析、生存時間分析など、特に応用の広い重要な手法を理解し、正しく手法を用いるための基礎を学ぶ。  | 【橋必修】 【公必修】<br>電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.                        |

| Course Number | Course Name                            | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ119       | Critical Path Research Management      | 1           | 2.0     | 1                      | FallAB               | Mon6, 7            | 4F204     | Koichi Hashimoto                                   | 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】<br>Identical to 01ER232.<br>Lectures are conducted in English. |
| 01EQ133       | Regulatory Science of Medical Products | 1           | 1.0     | 1                      | FallABC              | by appointment     |           | Koichi Hashimoto                                   | 医薬品・医療機器の開発はの薬事法による規制を遵守して実施しなければならない。薬事法による規制と承認審査について体系的に理解する。また、医薬品・医療機器等の品質・安全性・有効性の試験結果を的確に評価するための基盤となる科学(レギュラトリーサイエンス)の概念についても学習する。   | 【橋必修】  |
| 01EQ403       | Clinical Trials                        | 1           | 1.0     | 1, 2                   | FallAB               | Tue7, 8            | 4F204     | Yukiko Wagatsuma, Mizuho Fukushige, Masahiko Gosyo | 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. | Lectures are conducted in English.                                   |
| 01EQ409       | Biostatistics Advanced                 | 1           | 2.0     | 1, 2                   | FallAB               | Wed4, 5            | 4F305     | Masahiko Gosyo, Kazushi Maruo                      | 医学研究で重要である統計手法、生存時間解析を学ぶ。   | 【公必修】<br>Lectures are conducted in English.                          |

| Course Number | Course Name                          | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks                                     |
|---------------|--------------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---|
| 01EQ401       | Lecture on Health Behavioral Science | 1           | 1.0     | 1, 2                   | FallAB               | Wed3               |           | Shinichiro Sasahara, Ichiyo Matsuzaki, Tamaki Saito, Nobuaki Morita, Yuichi Oi, Yasuhito Hirai | 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】<br>Lectures are conducted in English. |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                            | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---------------------------------------|---|--|
| 01EQ517       | Health Care Policy and Management                                      | 1           | 1.0     | 1, 2                   | Fall/AB              | Thu3               | 4F204     | Masahide Kondo                        | 1 To understand basic theories of health care policy science.<br>2 To understand health systems and challenges they face in the world and Japan.  | 【公必修】 Code share with GIP-TRIAD. Lectures are conducted in English.                  |
| 01EQ518       | Health Service Administration  | 1           | 1.0     | 1, 2                   | Fall/AB              | Thu4               |           | Nanako Tamiya                         | To understand the approach of health service administration and management in various fields of health care.  | 【公必修】 Lectures are conducted in English.   |
| 01EQ508       | Health Economics   | 1           | 1.0     | 1, 2                   | Fall/C               | Intensive          | 4F204     | Masahide Kondo                        | As a foundation of health economics, microeconomics, welfare economics, and new institutional economics in health care are explained in order to nurture a view of the health system as a market for health care.   | 【橋必修】 【公必修】 国際地域研究専攻とコードシェア Identical to 01DZ512. Lectures are conducted in English. |
| 01EQ511       | Introduction of Health Services Research                               | 1           | 1.0     | 1, 2                   | Spr/AB               | Thu4               | 5Z740     | Nanako Tamiya                         | 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 Identical to 01DZ510. Lectures are conducted in English.       |
| 01EQ411       | Critical Appraisal in Quantitative Health and Social Sciences Research | 1           | 1.0     | 1                      | Spr/C                | Fri3, 4            | 4F204     | Ganchimeg Togoobaatar, Masao Ichikawa | 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.                 | Lectures are conducted in English.   |
| 01EQ412       | Systematic reviews and Introduction to Meta-analysis                   | 1           | 2.0     | 1                      | Fall/AB              | Mon1, 2            |           | Ganchimeg Togoobaatar, Masao Ichikawa | 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. | Lectures are conducted in English.   |

| Course Number | Course Name      | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks                                  |
|---------------|------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ402       | Epidemiology     | 1           | 2.0     | 1, 2                   | Fall/AB              | Tue3, 4            | 4F305     | Yukiko Wagatsuma, Mizuho Fukushige                 | 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.       | 【公必修】 Lectures are conducted in English. |
| 01EQ403       | Clinical Trials  | 1           | 1.0     | 1, 2                   | Fall/AB              | Tue7, 8            | 4F204     | Yukiko Wagatsuma, Mizuho Fukushige, Masahiko Gosyo | 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. | Lectures are conducted in English.       |
| 01EQ404       | Health Promotion | 1           | 1.0     | 1, 2                   | Spr/AB               | Wed4               | 4F305     | Tokie Anme   | ヘルスプロモーション、アドボカシー、コミュニケーション、エンパワメントの理論と実践について、多面的な研究成果を活用し取得することを目的とする。   | Lectures are conducted in English.       |

| Course Number | Course Name                      | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                                  | Course Overview   | Remarks  |
|---------------|----------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ405       | Topics in Environmental Health   | 1           | 1.0     | 1, 2                   | SprAB                | Mon4               | 5C502     | Yasushi Honda                               | This course introduces study methods of environmental health and has students obtain knowledge on effects of various environmental factors on health and learn the environmental-health-specific way of thinking.   | Identical to 01EH206. Lectures are conducted in English.             |
| 01EQ406       | Environmental Health Perspective | 1           | 2.0     | 1, 2                   | FallAB               | Fri3, 4            | 4E608     | Yoshito Kumagai, Shinkai Yasuhiro           | There are numerous chemical substances in the environment, resulting in some serious effects on the body. However, current molecular studies suggest that illnesses caused by exposure to environmental chemicals are, at least in part, attributable to the interaction with macromolecules like proteins in the organism. This lecture offers an opportunity to learn about a variety of symptoms caused by exposure of humans to environmental chemical and initial response and cellular protection against such chemicals. | Identical to 01AD605 and 01ER102. Lectures are conducted in English. |
| 01EQ409       | Biostatistics Advanced           | 1           | 2.0     | 1, 2                   | FallAB               | Wed4, 5            | 4F305     | Masahiko Gosyo, Kazushi Maruo               | 医科学研究で重要である統計手法、生存時間解析を学ぶ。  | 【公必修】<br>Lectures are conducted in English.                          |
| 01EQ513       | Mental Health                    | 1           | 1.0     | 1                      | SprAB                | Mon5               | 4F305     | Tamaki Saito, Nobuaki Morita, Yasukazu Ogai | ライフサイクルの各段階での心理的課題と危機、ストレスのメカニズム、心理的ケア、心理的側面の評価法、社会精神医学、精神保健対策について学ぶ。   | Lectures are conducted in English.                                   |

| Course Number | Course Name                          | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks  |
|---------------|--------------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ501       | Lecture on Human Care Science I      | 1           | 1.0     | 1, 2                   | SprA                 | Intensive          |           | Yoshikazu Hamaguchi, Ichiko Shoji, Tetsuji Yokoyama, Yasushi Honda, Yoko Sawamiya | 対人援助にかかわる諸問題を、さまざまな学問分野から交叉的かつ体系的に把握し、基礎的知識を得るためのヒューマン・ケア科学の基礎講義として開設される。すなわち、対人援助の基本として、対象の対人的理解、援助方法の策定と介入、そして対象の置かれている状況の社会的制度的理解と援助が求められるが、これらの問題を教育学、心理学、保健学の研究分野から論じる。              | 【必修】<br>Identical to 02EU001.<br>5/12、5/13<br>主専攻必修科目。   |
| 01EQ502       | Lecture on Human Care Science II     | 1           | 1.0     | 1, 2                   | FallB                | Intensive          |           | Tamaki Saito, Hitomi Matsuda, Naoki Kunugita, Fumi Takeda, Katsuyoshi Mizukami    | 対人援助にかかわる諸問題を、さまざまな学問分野から交叉的かつ体系的に把握し、基礎的知識を得るためのヒューマン・ケア科学の基礎講義として開設される。すなわち、対人援助の基本として、対象の対人的理解、援助方法の策定と介入、そして対象の置かれている状況の社会的制度的理解と援助が求められるが、これらの問題を福祉学、保健学、看護学、精神保健学の研究分野から論じる。        | 【必修】<br>Identical to 02EU002.<br>11/10、11/11<br>主専攻必修科目。 |
| 01EQ503       | Lecture on Human Care Science III    | 1           | 1.0     | 1, 2                   | FallB                | Intensive          |           | Masao Ichikawa, Nobuaki Morita, Nanako Tamiya, Masahide Kondo, Katsumi Tokuda     | 対人援助にかかわる諸問題を、さまざまな学問分野から交叉的かつ体系的に把握し、基礎的知識を得るためのヒューマン・ケア科学の基礎講義として開設される。すなわち、対人援助の基本として、対象の対人的理解、援助方法の策定と介入、そして対象の置かれている状況の社会的制度的理解と援助が求められるが、これらの問題を医療経済学、社会医学およびヘルスサービスリサーチの研究分野から論じる。 | 【必修】<br>Identical to 02EU003.<br>12/15、12/16<br>主専攻必修科目。 |
| 01EQ504       | Methodology of Human Care Science I  | 1           | 1.0     | 1, 2                   | SprB                 | Intensive          |           | Hiroyuki Iida, Sanae Aoki, Tomoko Ito, Yoshiyuki Kawano                           | ヒューマン・ケア科学は学際的な領域であるために、関連する多様な分野の研究手法に対する基礎的な理解が必要となる。本科目では、社会調査、臨床心理学、公衆衛生学にかかわる基本的な研究方法について解説する。   | 【必修】<br>Identical to 02EU004.<br>6/16、6/17<br>主専攻必修科目。   |
| 01EQ505       | Methodology of Human Care Science II | 1           | 1.0     | 1, 2                   | FallA                | Intensive          |           | Sayuri Hashimoto, Yumi Hashizume, Tomomi Mizuno, Noriko Okamoto                   | ヒューマン・ケア科学は学際的な領域であるために、関連する多様な分野の研究手法に対する基礎的な理解が必要となる。本科目では看護学、健康行動科学、バリアフリーにかかわる基本的な研究方法について解説する。   | 【必修】<br>Identical to 02EU005.<br>10/13、10/14<br>主専攻必修科目。 |

| Course Number | Course Name                           | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                            | Course Overview  | Remarks                                      |
|---------------|---------------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---------------------------------------|--|--|
| 01EQ506       | Methodology of Human Care Science III | 1           | 1.0     | 1, 2                   | Fall B               | Intensive          |           | Hisako Yanagi, Yasukazu Ogai, Ai Hori | ヒューマン・ケア科学は学際的な領域であるため、関連する多様な分野の研究方法に対する基礎的な理解が必要となる。本科目では、福祉医療学、社会医学、社会心理学にかかわる基本的な研究方法について解説する。 | 【必修】 Identical to 02EU006. 12/1、12/2 専攻必修科目。 |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                                     | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ517       | Health Care Policy and Management                  | 1           | 1.0     | 1, 2                   | Fall AB              | Thu3               | 4F204     | Masahide Kondo                                 | 1 To understand basic theories of health care policy science.<br>2 To understand health systems and challenges they face in the world and Japan.  | 【公必修】 Code share with GIP-TRIAD. Lectures are conducted in English.                  |
| 01EQ518       | Health Service Administration                      | 1           | 1.0     | 1, 2                   | Fall AB              | Thu4               |           | Nanako Tamiya                                  | To understand the approach of health service administration and management in various fields of health care.  | 【公必修】 Lectures are conducted in English.   |
| 01EQ508       | Health Economics                                   | 1           | 1.0     | 1, 2                   | Fall C               | Intensive          | 4F204     | Masahide Kondo                                 | As a foundation of health economics, microeconomics, welfare economics, and new institutional economics in health care are explained in order to nurture a view of the health system as a market for health care.   | 【橋必修】 【公必修】 国際地域研究専攻とコードシェア Identical to 01D2512. Lectures are conducted in English. |
| 01EQ509       | Medical Science and Health Care for Elderly People | 1           | 1.0     | 1, 2                   | Spr AB               | Mon7               | 4F305     | Hisako Yanagi, Masao Ichikawa, Ai Hori         | 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・管理で治癒することは少なく、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】   |
| 01EQ510       | Palliative Medicine                                | 1           | 1.0     | 1                      | Fall AB              | Tue6               | 4F305     | Jun Hamano                                     | 治癒することが難しく、死に臨んでいる患者およびその家族に対する医療は単なる延命のためではなく、質を求め、全人的にアプローチすることが求められている。本授業では緩和医療の基本的事項を学び、基礎となる価値観の確立のために演習や討論を行う。   |  |
| 01EQ511       | Introduction of Health Services Research           | 1           | 1.0     | 1, 2                   | Spr AB               | Thu4               | 5Z740     | Nanako Tamiya                                  | 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 Identical to 01D2510. Lectures are conducted in English.       |
| 01EQ513       | Mental Health                                      | 1           | 1.0     | 1                      | Spr AB               | Mon5               | 4F305     | Tamaki Saito, Nobuaki Morita, Yasukazu Ogai    | ライフサイクルの各段階での心理的課題と危機、ストレスのメカニズム、心理的ケア、心理的側面の評価法、社会精神医学、精神保健対策について学ぶ。   | Lectures are conducted in English.   |
| 01EQ514       | Gerontological Nursing and Caring                  | 1           | 1.0     | 1, 2                   | Spr AB               | Wed7               | 5Z310     | Hitomi Matsuda, Yumi Hashizume, Noriko Okamoto | 高齢者とその家族及び地域社会を対象にしたヒューマン・ケアリングの意味と効果を探求するために、その研究方法として質的研究の理論と実践を学ぶ。   |  |

| Course Number | Course Name   | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                                     | Course Overview  | Remarks |
|---------------|---|-------------|---------|------------------------|----------------------|--------------------|-----------|--|--|---------|
| 01EQ515       | Gerontological Nursing and Caring for the elderly with dementia | 1           | 1.0     | 1, 2                   | Fall C               | by appointment     |           | Hitomi Matsuda, Yumi Hashizume, Noriko Okamoto | 認知症高齢者の心身・社会的機能を総合的に評価し、生活リズムの調整(介入)による効果を学ぶ。また、人権を侵害される場面として虐待を想定し、ケア担当者の倫理感と行動を育成するための方法を学ぶ。 |         |

General Foundation Subjects

| Course Number | Course Name                             | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks   |
|---------------|---|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---|
| 01EQ005       | Introduction to Social Medicine         | 1           | 2.0     | 1                      | SprAB                | Thu1, 2            | 4F204     | Masao Ichikawa, Yuichi Oi, Yasukazu Ogai, Masahide Kondo, Shinichiro Sasahara, Naoyuki Tsuchiya, Katsuya Honda, Nobuaki Morita, Hisako Yanagi, Kazumasa Yamagishi, Yukiko Wagatsuma, Masahiko Gosyo, Ai Hori, Tamaki Saito, Yukiko Sugano, Ganchimeg Togoobaatar | 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】<br>【ヒ必修】電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.  |
| 01EQ006       | Selected Topics in International Health | 1           | 1.0     | 1, 2                   | Fall IAB             | Thu2               |           | Mizuho Fukushige, Yukiko Wagatsuma, Masahide Kondo   | The aim of this course is to learn the fundamentals of international health and issues on health in developing countries and international cooperation to deal with them.   | 電子・物理工学専攻「医工学コース」、国際地域研究専攻 Code share with Graduate School of Humanities and Social Sciences Identical to 01D2596. Lectures are conducted in English. |
| 01EQ007       | Introduction to Epidemiology            | 1           | 1.0     | 1, 2                   | SprAB                | Tue3               | 4F305     | Yukiko Wagatsuma, Mizuho Fukushige   | 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.  | 【公必修】電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.  |
| 01EQ011       | Biostatistics                           | 1           | 1.0     | 1                      | SprAB                | Wed3               | 4F204     | Masahiko Gosyo, Kazushi Maruo  | 医学領域における統計学的アプローチの具体的な方法について学ぶ。検定、推定、相関、回帰、分散分析、多変量解析、生存時間分析など、特に応用の広い重要な手法を理解し、正しく手法を用いるための基礎を学ぶ。  | 【橋必修】【公必修】<br>電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.   |
| 01EQ012       | Biostatistics in Practice               | 3           | 1.0     | 1                      | SprAB                | Wed6, 7            | 4B212     | Masahiko Gosyo, Kazushi Maruo  | 統計解析ソフトウェアを用いて、医学データ解析に用いられる統計手法の実際について学ぶ。  | Lectures are conducted in English.  |

| Course Number | Course Name                                   | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom    | Instructor   | Course Overview   | Remarks  |
|---------------|---|-------------|---------|------------------------|----------------------|--------------------|--------------|--|---|--|
| 01EQ013       | English in Medical Science and Technology I   | 1           | 1.0     | 1                      | SprAB                | Mon2               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis   | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】<br>Lectures are conducted in English.                            |
| 01EQ014       | English in Medical Science and Technology II  | 1           | 1.0     | 1                      | FallAB               | Mon5               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis   | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】<br>Identical to 01ER105. Lectures are conducted in English.      |
| 01EQ015       | English in Medical Science and Technology III | 1           | 1.0     | 1                      | Annual               | by appointment     |              | Flaminia Miyamasu  | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 24年度以前の入学者に限る<br>Lectures are conducted in English.                    |
| 01EQ018       | Dissertation in Medical Sciences              | 2           | 8.0     | 2                      | Annual               | by appointment     |              | Chair of Medical Sciences  | 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】<br>Lectures are conducted in English.                            |
| 01EQ023       | Seminar on Basic Medical Sciences             | 2           | 3.0     | 1                      | Annual               | by appointment     |              | Chair of Medical Sciences  | 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】<br>Lectures are conducted in English.                           |
| 01EQ025       | Seminar for International Students            | 1           | 1.0     | 1, 2                   |                      |                    |              |  | This course provides international students with an opportunity to get prepared for disasters they might face in Japan.   | 【留学生対象】<br>Lectures are conducted in English.<br>Not open in 2018.     |
| 01EQ401       | Lecture on Health Behavioral Science          | 1           | 1.0     | 1, 2                   | FallAB               | Wed3               |              | Shinichiro Sasahara, Ichiyo Matsuzaki, Tamaki Saito, Nobuaki Morita, Yuichi Oi, Yasuhito Hirai | 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】<br>Lectures are conducted in English.                            |
| 01EQ517       | Health Care Policy and Management             | 1           | 1.0     | 1, 2                   | FallAB               | Thu3               | 4F204        | Masahide Kondo   | 1 To understand basic theories of health care policy science.<br>2 To understand health systems and challenges they face in the world and Japan.  | 【公必修】 Code share with GIP-TRIAD.<br>Lectures are conducted in English. |
| 01EQ518       | Health Service Administration                 | 1           | 1.0     | 1, 2                   | FallAB               | Thu4               |              | Nanako Tamiya  | To understand the approach of health service administration and management in various fields of health care.  | 【公必修】<br>Lectures are conducted in English.                            |



| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                            | Course Overview   | Remarks   |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---------------------------------------|---|---|
| 01EQ508       | Health Economics   | 1           | 1.0     | 1, 2                   | Fall C               | Intensive          | 4F204     | Masahide Kondo                        | As a foundation of health economics, microeconomics, welfare economics, and new institutional economics in health care are explained in order to nurture a view of the health system as a market for health care.   | 【橋必修】【公必修】国際地域研究専攻とコードシェア<br>01DZ512.<br>Lectures are conducted in English. |
| 01EQ511       | Introduction of Health Services Research                               | 1           | 1.0     | 1, 2                   | Spr AB               | Thu 4              | 5Z740     | Nanako Tamiya                         | 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<br>01DZ510.<br>Lectures are conducted in English.      |
| 01EQ411       | Critical Appraisal in Quantitative Health and Social Sciences Research | 1           | 1.0     | 1                      | Spr C                | Fri 3, 4           | 4F204     | Ganchimeg Togoobaatar, Masao Ichikawa | 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.                 | Lectures are conducted in English.  |
| 01EQ412       | Systematic reviews and Introduction to Meta-analysis                   | 1           | 2.0     | 1                      | Fall AB              | Mon 1, 2           |           | Ganchimeg Togoobaatar, Masao Ichikawa | 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. | Lectures are conducted in English.  |

#### Major Subjects

| Course Number | Course Name      | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks                                     |
|---------------|------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|---|
| 01EQ109       | Genome Medicine  | 1           | 2.0     | 1, 2                   | Fall AB              | Tue 5, 6           | 4F204     | Emiko Noguchi, Kazuhiro Takekoshi, Naoyuki Tsuchiya, Masayuki Noguchi, Masato Homma, Kazuya Morikawa, Hiroshi Furukawa, Masafumi Muratani, Koji Kawai, Hiroko Fukushima, Hiroko Miyadera | ゲノム科学の基本原則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。   | Lectures are conducted in English.          |
| 01EQ402       | Epidemiology     | 1           | 2.0     | 1, 2                   | Fall AB              | Tue 3, 4           | 4F305     | Yukiko Wagatsuma, Mizuho Fukushige   | 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. | 【公必修】<br>Lectures are conducted in English. |
| 01EQ404       | Health Promotion | 1           | 1.0     | 1, 2                   | Spr AB               | Wed 4              | 4F305     | Tokie Anme   | ヘルスプロモーション、アドボカシー、コミュニケーション、エンパワメントの理論と実践について、多面的な研究成果を活用し取得することを目的とする。   | Lectures are conducted in English.          |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ405       | Topics in Environmental Health                             | 1           | 1.0     | 1, 2                   | SprAB                | Mon4               | 5C502     | Yasushi Honda                                      | This course introduces study methods of environmental health and has students obtain knowledge on effects of various environmental factors on health and learn the environmental-health-specific way of thinking.   | Identical to 01EH206. Lectures are conducted in English.   |
| 01EQ406       | Environmental Health Perspective                           | 1           | 2.0     | 1, 2                   | FallAB               | Fri3, 4            | 4E608     | Yoshito Kumagai, Shinkai Yasuhiro                  | There are numerous chemical substances in the environment, resulting in some serious effects on the body. However, current molecular studies suggest that illnesses caused by exposure to environmental chemicals are, at least in part, attributable to the interaction with macromolecules like proteins in the organism. This lecture offers an opportunity to learn about a variety of symptoms caused by exposure of humans to environmental chemical and initial response and cellular protection against such chemicals. | Identical to 01AD605 and 01ER102. Lectures are conducted in English.   |
| 01EQ409       | Biostatistics Advanced                                     | 1           | 2.0     | 1, 2                   | FallAB               | Wed4, 5            | 4F305     | Masahiko Gosyo, Kazushi Maruo                      | 疫学研究で重要である統計手法、生存時間解析を学ぶ。   | 【公必修】Lectures are conducted in English.  |
| 01EQ513       | Mental Health  | 1           | 1.0     | 1                      | SprAB                | Mon5               | 4F305     | Tamaki Saito, Nobuaki Morita, Yasukazu Ogai        | ライフサイクルの各段階での心理的課題と危機、ストレスのメカニズム、心理的ケア、心理的側面の評価法、社会精神医学、精神保健対策について学ぶ。   | Lectures are conducted in English.   |
| 01EQ043       | Medical Science Seminar VI: epidemiology and biostatistics | 1           | 1.0     | 1, 2                   | Annual               | Tue6               |           |  | 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.  | Subject to the enrolled students in or before 2014. Conducted in the classroom 4G121. Lectures are conducted in English. |
| 01EQ053       | Medical Science Seminar VI: epidemiology and biostatistics | 1           | 2.0     | 1, 2                   | Annual               | Tue6               |           | Mizuho Fukushige, Yukiko Wagatsuma, Masahiko Gosyo | 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.  | Subject to the enrolled students in or after 2015. Conducted in the classroom 4G121. Lectures are conducted in English.  |

#### General Foundation Subjects

| Course Number | Course Name                 | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview  | Remarks                            |
|---------------|-----------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|--|--|------------------------------------|
| 01EQ045       | Lecture in Human Physiology | 1           | 1.0     | 1                      | SprA                 | Thu4, 5            |           | Munetaka Shidara, Masayuki Matsumoto, Shigeru Ozaki, Tadachika Koganezawa, Takashi Mizuhiki  | Understanding human physiological functions. Topics include blood circulation, respiration, motor control and reflex, prefrontal cortex, midbrain dopamine neurons, visual recognition, motivation and emotion, etc. | Lectures are conducted in English. |
| 01EQ046       | Topics in Biochemistry      | 1           | 1.0     | 1                      | SprAB                | Mon1               |           | Aya Fukuda, Kenji Irie, Koji Hisatake, Kazuhiko Uchida, Ken Nishimura, Kensuke Shiomi, Kazuko Keino-Masu, Yuji Funakoshi, Tomoaki Mizuno | 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。   | Lectures are conducted in English. |

| Course Number | Course Name                                 | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom    | Instructor   | Course Overview   | Remarks  |
|---------------|---|-------------|---------|------------------------|----------------------|--------------------|--------------|--|---|--|
| 01EQ005       | Introduction to Social Medicine             | 1           | 2.0     | 1                      | SprAB                | Thu1, 2            | 4F204        | Masao Ichikawa, Yuichi Oi, Yasukazu Ogai, Masahide Kondo, Shinichiro Sasahara, Naoyuki Tsuchiya, Katsuya Honda, Nobuaki Morita, Hisako Yanagi, Kazumasa Yamagishi, Yukiko Wagatsuma, Masahiko Gosyo, Ai Hori, Tamaki Saito, Yukiko Sugano, Ganchimeg Togoobaatar | 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」 Lectures are conducted in English.   |
| 01EQ006       | Selected Topics in International Health     | 1           | 1.0     | 1, 2                   | FallAB               | Thu2               |              | Mizuho Fukushige, Yukiko Wagatsuma, Masahide Kondo   | The aim of this course is to learn the fundamentals of international health and issues on health in developing countries and international cooperation to deal with them.   | 電子・物理工学専攻「医工学コース」, 国際地域研究専攻 Code share with Graduate School of Humanities and Social Sciences Identical to 01DZ596. Lectures are conducted in English. |
| 01EQ007       | Introduction to Epidemiology                | 1           | 1.0     | 1, 2                   | SprAB                | Tue3               | 4F305        | Yukiko Wagatsuma, Mizuho Fukushige   | 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.  | 【公必修】 電子・物理工学専攻「医工学コース」 Lectures are conducted in English.   |
| 01EQ011       | Biostatistics                               | 1           | 1.0     | 1                      | SprAB                | Wed3               | 4F204        | Masahiko Gosyo, Kazushi Maruo  | 医科学領域における統計学的アプローチの具体的方法について学ぶ。検定、推定、相関、回帰、分散分析、多変量解析、生存時間分析など、特に応用の広い重要な手法を理解し、正しく手法を用いるための基礎を学ぶ。  | 【橋必修】 【公必修】 電子・物理工学専攻「医工学コース」 Lectures are conducted in English.   |
| 01EQ012       | Biostatistics in Practice                   | 3           | 1.0     | 1                      | SprAB                | Wed6, 7            | 4B212        | Masahiko Gosyo, Kazushi Maruo  | 統計解析ソフトウェアを用いて、医学データ解析に用いられる統計手法の実際について学ぶ。  | Lectures are conducted in English.   |
| 01EQ013       | English in Medical Science and Technology I | 1           | 1.0     | 1                      | SprAB                | Mon2               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis   | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】 Lectures are conducted in English.   |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom    | Instructor   | Course Overview   | Remarks   |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|--------------|--|---|---|
| 01EQ014       | English in Medical Science and Technology II         | 1           | 1.0     | 1                      | Fall/AB              | Mon5               | 4F305, 4F204 | Flaminia Miyamasu, Thomas Mayers, Bryan James Mathis   | 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 study aspects of scientific communication, including oral presentation and writing of scientific reports. Classes will be conducted entirely in English, so students will also hone their listening skills. | 【医必修】<br>Identical to 01ER105. Lectures are conducted in English. |
| 01EQ023       | Seminar on Basic Medical Sciences                    | 2           | 3.0     | 1                      | Annual               | by appointment     |              | Chair of Medical Sciences  | 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】<br>Lectures are conducted in English.                      |
| 01EQ018       | Dissertation in Medical Sciences                     | 2           | 8.0     | 2                      | Annual               | by appointment     |              | Chair of Medical Sciences  | 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】<br>Lectures are conducted in English.                       |
| 01EQ101       | Human Pathology: Lecture                             | 1           | 2.0     | 1                      | Spr/AB               | Wed5, 6            | 4F204        | Masayuki Noguchi, Mitsuyasu Kato, Michio Nagata, Noriko Uesugi, Hiroyuki Suzuki, Norio Takayashiki, Shingo Sakashita, Junko Kano | ヒトの代表的な病気の概念と発病のメカニズムについて学ぶ。または病気の診断や治療方針の決定などに際して病理診断の重要性について理解する。   | 電子・物理工学専攻「医工学コース」<br>Lectures are conducted in English.           |
| 01EQ102       | Laboratory Animal Science and Animal Experimentation | 5           | 2.0     | 1                      | Spr/AB               | Fri3-5             | 4F204        | Fumihiro Sugiyama, Seiya Mizuno  | 医科学実験の基礎である実験動物学について、実験動物の基礎知識、遺伝統御、環境統御、微生物統御、各種実験動物の特性と取扱い法、動物実験の倫理、基本的な動物実験手法を学ぶ。さらに、トランスジェニックマウスやノックアウトマウス作製原理とそのための発生工学手法についても学ぶ。  | Lectures are conducted in English.                                |

#### Major Subjects

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ050       | English Discussion & Presentation on Medical Sciences I  | 2           | 2.0     | 1, 2                   | Spr/AB               | Fri1, 2            |           | Kenji Irie, Hiroyuki Suzuki, Tomoaki Mizuno, Yasuyuki Suda  | 英語による論文紹介と討論、インターネット回線を使った国立台湾大学、京都大学との交流授業を通して、生命科学の知識、および英語によるサイエンスコミュニケーション能力を身につける。<br><br>Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges | Lectures are conducted in English.                       |
| 01EQ051       | English Discussion & Presentation on Medical Sciences II | 2           | 2.0     | 1, 2                   | Fall/AB              | Wed1, 2            |           | Kenji Irie, Mitsuyasu Kato, Satoru Takahashi, Hiroyuki Suzuki, Atsushi Kawaguchi, Yasuyuki Suda, Yuji Funakoshi, Tomoaki Mizuno | 英語による論文紹介と討論、インターネット回線を使った国立台湾大学、京都大学との交流授業を通して、生命科学の知識、および英語によるサイエンスコミュニケーション能力を身につける。<br><br>Boosting scientific communication in English, exploring biological sciences, and promoting international long-distance academic and research exchanges | Identical to 01ER233. Lectures are conducted in English. |

| Course Number | Course Name                    | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor  | Course Overview   | Remarks  |
|---------------|--------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|---|---|--|
| 01EQ106       | Oncology                       | 1           | 2.0     | 1                      | Fall AB              | Mon/Tue 4          | 4F204     | Masayuki Noguchi, Kenji Irie, Mitsuyasu Kato, Hideyuki Sakurai, Yukio Sato, Shigeru Chiba, Koji Hisatake, Ichinosuke Hyodo, Manabu Minami, Shingo Sakashita, Hiroyuki Suzuki, Norio Takayashiki, Yuji Mizokami, Takeo Minaguchi, Koji Kawai, Shoko Saito, Aya Shiba | This subject is aiming to understand disease entity, etiology, and the progression mechanism of malignant tumor at the molecular level. The topics of the latest tumor research (basic) and diagnostic treatment (clinical) are also covered while aiming at acquiring basic knowledge.   | Identical to 01ER234. Lectures are conducted in English. |
| 01EQ107       | Pharmacology                   | 1           | 1.0     | 1                      | Spr AB               | Mon5               | 4F204     | Masayuki Masu, Takeshi Sakurai, Kensuke Shiomi, Kazuko Keino-Masu, Yoshihiro Miwa, Yuji Funakoshi, Keiji Miyata, Takuya Okada   | 1. 医学領域における薬理学の概念について学ぶ。<br>2. 生体と内因性及び外因性生理活性物質の相互作用を分子、遺伝子、細胞、個体レベルで学び、薬物・毒物の薬理作用の基本について学ぶ。   | Lectures are conducted in English.                       |
| 01EQ131       | Human Infection and Immunology | 1           | 2.0     | 1                      | Spr AB               | Mon3, 4            |           | Akira Shibuya, Takayuki Sumida, Kazuya Morikawa, Shinji Saito, Kazuko Shibuya, Kaoru Takeuchi, Kiong Ho, Satoko Tahara, Chigusa Oda, Atsushi Kawaguchi  | 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 Lectures are conducted in English.   |
| 01EQ109       | Genome Medicine                | 1           | 2.0     | 1, 2                   | Fall AB              | Tue5, 6            | 4F204     | Emiko Noguchi, Kazuhiro Takekoshi, Naoyuki Tsuchiya, Masayuki Noguchi, Masato Homma, Kazuya Morikawa, Hiroshi Furukawa, Masafumi Muratani, Koji Kawai, Hiroko Fukushima, Hiroko Miyadera  | 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。   | Lectures are conducted in English.                       |

| Course Number | Course Name                        | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor                         | Course Overview  | Remarks  |
|---------------|------------------------------------|-------------|---------|------------------------|----------------------|--------------------|-----------|------------------------------------|--|--|
| 01EQ132       | Stem Cell Therapy                  | 1           | 1.0     | 1                      | SprAB                | Thu3               |           | Osamu Ohneda, Toshiharu Yamashita  | 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<br>Lectures are conducted in English.            |
| 01EQ119       | Critical Path Research Management  | 1           | 2.0     | 1                      | FallAB               | Mon6, 7            | 4F204     | Koichi Hashimoto                   | 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】<br>Identical to 01ER232.<br>Lectures are conducted in English. |
| 01EQ120       | Frontier Science in Drug Discovery | 1           | 1.0     | 1, 2                   | FallAB               | Wed5               |           | Satoru Takahashi                   | 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<br>Lectures are conducted in English.            |
| 01EQ402       | Epidemiology                       | 1           | 2.0     | 1, 2                   | FallAB               | Tue3, 4            | 4F305     | Yukiko Wagatsuma, Mizuho Fukushige | 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.  | 【公必修】<br>Lectures are conducted in English.                          |

| Course Number | Course Name  | Course Type | Credits | Standard Academic Year | Course Offering Term | Weekday and Period | Classroom | Instructor   | Course Overview   | Remarks  |
|---------------|--|-------------|---------|------------------------|----------------------|--------------------|-----------|--|---|--|
| 01EQ406       | Environmental Health Perspective                               | 1           | 2.0     | 1, 2                   | Fall/AB              | Fri3,4             | 4E608     | Yoshito Kumagai, Shinkai Yasuhiro                  | There are numerous chemical substances in the environment, resulting in some serious effects on the body. However, current molecular studies suggest that illnesses caused by exposure to environmental chemicals are, at least in part, attributable to the interaction with macromolecules like proteins in the organism. This lecture offers an opportunity to learn about a variety of symptoms caused by exposure of humans to environmental chemical and initial response and cellular protection against such chemicals. | Identical to 01AD605 and 01ER102. Lectures are conducted in English.   |
| 01EQ517       | Health Care Policy and Management                              | 1           | 1.0     | 1, 2                   | Fall/AB              | Thu3               | 4F204     | Masahide Kondo                                     | 1 To understand basic theories of health care policy science.<br>2 To understand health systems and challenges they face in the world and Japan.  | 【公必修】 Code share with GIP-TRIAD. Lectures are conducted in English.  |
| 01EQ518       | Health Service Administration                                  | 1           | 1.0     | 1, 2                   | Fall/AB              | Thu4               |           | Nanako Tamiya                                      | To understand the approach of health service administration and management in various fields of health care.  | 【公必修】 Lectures are conducted in English.   |
| 01EQ511       | Introduction of Health Services Research                       | 1           | 1.0     | 1, 2                   | Spr/AB               | Thu4               | 5Z740     | Nanako Tamiya                                      | 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<br>Identical to 01DZ510. Lectures are conducted in English.  |
| 01EQ039       | Medical Science Seminar II: Biochemistry and Molecular Biology | 1           | 1.0     | 1, 2                   | Annual               | by appointment     |           | Koji Hisatake                                      | 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     |           | Akira Shibuya                                      | 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。  |  |
| 01EQ043       | Medical Science Seminar VI: epidemiology and biostatistics     | 1           | 1.0     | 1, 2                   | Annual               | Tue6               |           |  | 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.  | Subject to the enrolled students in or before 2014. Conducted in the classroom 4G121. Lectures are conducted in English. |
| 01EQ053       | Medical Science Seminar VI: epidemiology and biostatistics     | 1           | 2.0     | 1, 2                   | Annual               | Tue6               |           | Mizuho Fukushige, Yukiko Wagatsuma, Masahiko Gosyo | 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.  | Subject to the enrolled students in or after 2015. Conducted in the classroom 4G121. Lectures are conducted in English.  |