

<b>Lecture No</b>	031942				
<b>Subject title</b>	Public Health Biology	<b>Subject ID</b>	GP—b3321—L		
<b>Instructors</b>	長谷川 久紀[HASEGAWA Hisanori]				
<b>Semester</b>	Spring 2025	<b>Level</b>	1st year	<b>Units</b>	2
<b>Course by the instructor with practical experiences</b>	<p>(Course director) Takeo Fujiwara, Professor, Department of Public Health</p> <p>(Instructors) Hisanori Hasegawa, MD, PhD Junior Associate Professor, Office of Global Affairs Yoshimitsu Akiyama, PhD Junior Associate Professor, Department of Molecular Oncology Takasato Fujiwara, MD Hospital Director, Tanaka Clinic Sadakatsu Ikeda, MD, PhD Professor, Cancer Center, Medical Hospital Janelle Moross, RN Associate Professor, Office of Education Shun Nakagama, MD, PhD Clinical Lecturer, Department of Virology &amp; Parasitology, Osaka Metropolitan University Hiroshi Noto, MD, PhD Director, Endocrinology Department, St. Luke's International Hospital Koh Okamoto, MD, PhD Associate Professor, Department of Infectious Diseases Yasuaki Tagashira, MD, PhD Junior Associate Professor, Department of Infectious Diseases Kentaro Takahashi, MD, PhD Assistant Professor, Department of Human Genetics and Disease Diversity Akihito Uezato, MD, PhD Professor, Center for Basic Medical Research, International University of Health and Welfare</p> <p>Availability in English: All classes are taught in English. Key word: Public Health</p>				
<b>Lecture place</b>	Refer to the course schedule				
<b>Course Purpose and Outline</b>	<p>Course Purpose: The goals of this course are to provide students with a fundamental understanding of the biology and pathophysiology underlying major human diseases which cause significant morbidity or mortality that are necessary for the practice of public health. This course is mandatory for MPH students without MD, DDS, DMD, or RN.</p> <p>Outline: Discusses the molecular, cellular, physiological, genetic and immunological determinants of human diseases and disease susceptibility, including infectious disease, pulmonary diseases related to air pollution, diabetes and obesity, cardiovascular diseases, stress-related conditions, psychiatric diseases, perinatal complications, and cancer.</p>				
<b>Course Objective(s)</b>	<p>Upon successfully completing this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1) Describe the public health strategies for the prevention of the infectious diseases of public health concern worldwide</li> <li>2) Explain how a vaccine works to achieve resistance to an infectious organism, define the term herd immunity, and explain how it provides protection for the non-immunized person as well as its philosophical consideration</li> <li>3) Describe the psychophysiological effector mechanisms that represent the stress response and the effect of the stress response on the target organ systems and its public health implications</li> <li>4) Describe the prevalence, clinical manifestations, natural history and societal impact, pathophysiology, and management of mood and anxiety disorders, schizophrenia, developmental disorders, and dementia</li> <li>5) Outline normal pregnancy and parturition and describe the effects of host environment on fetus</li> <li>6) Describe the public health strategies for the prevention of the pulmonary diseases related to air pollution and the respiratory tract infection of public-health concerns</li> </ol>				

- 7) Describe the public health burden (domestic and global) of and the public health strategies for the prevention of cardiovascular diseases
- 8) Describe the public health burden (domestic and global) of and the public health strategies for the prevention of diabetes/obesity
- 9) Define genetics and its relationship to the health of individuals and populations, and define major ethical, legal, and social implications of genetics as applied in the clinical setting and in public health
- 10) Describe the effects of epigenetic states on health outcomes related to cardiovascular and respiratory disease, aging, reproductive health, neurological and neuropsychological diseases, and cancer
- 11) Describe the public health burden (domestic and global) of and the public health strategies for various cancer

#### Lecture plan

No	Date	Time	Room	Lecture theme	Staff	Learning objectives*Learning methods* Instructions
1	4/22	08:50-10:20	G-Lab	Host response to infection: the immune response and vaccination	HASEGAWA Hisanori	Objectives:2) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
2	4/22	10:45-12:15	G-Lab	Host response to infection: the immune response and vaccination	HASEGAWA Hisanori	Objectives:2) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
3	4/22	13:30-15:00	G-Lab	Pulmonary diseases related to air pollution and respiratory tract infection of public-health concern	Takasato Fujiwara	Objectives:6) Class Style:Class discussion Pre-Assignments:None
4	4/23	08:50-10:20	G-Lab	Genetics for public health students	TAKAHASHI Kentaro	Obj:9) Style:Class discussion Pre-Assignments:Refer syllabus on the WebClass
5	4/23	10:45-12:15	G-Lab	Essentials of obstetrics for public health students	JANELLE RENEE MOROSS	Objectives:5) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
6	4/23	13:30-15:00	G-Lab	Cardiovascular diseases for public health students	NAKAGAMA Shunn	Objectives:7) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
7	4/23	15:25-16:55	G-Lab	Cardiovascular diseases for public health students	NAKAGAMA Shunn	Objectives:7) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
8	4/24	13:30-15:00	G-Lab	Diabetes and obesity for public health students	NOTO Hiroshi	Objectives:8) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
9	4/24	15:25-16:55	G-Lab	Diabetes and obesity for public health students	NOTO Hiroshi	Objectives:8) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
10	4/25	10:45-12:15	G-Lab	Genetics for public health students	TAKAHASHI Kentaro	Obj:9) Style:Class discussion Pre-Assignments:Refer syllabus on the WebClass
11	4/25	13:30-15:00	Live/G-lab	Cancer for public health students	IKEDA Sadakatsu	Objectives:11) Class Style:Class discussion Pre-Assignments:None
12	4/25	15:25-16:55	Live/G-lab	Cancer for public health students	IKEDA Sadakatsu	Objectives:11) Class Style:Class discussion Pre-Assignments:None
13	4/30	13:30-15:00	G-Lab	Overview of infectious diseases	OKAMOTO Koh	Objectives:1) Class Style:Class discussion Pre-Assignments:None

14	5/1	10:45-12:15	G-Lab	Epigenetics for public health students	AKIYAMA Yoshimitsu	Objectives:10) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
15	5/1	14:30-16:00	G-Lab	Antimicrobial resistance, One Health and Antimicrobial Stewardship	TAGASHIRA Yasuaki	Objectives:1) Class Style:Class discussion Pre-Assignments:None
16	5/2	10:45-12:15	Live	Stress Response / Essentials of neuroscience and psychiatric illness	UEZATO Akihito	Obj:3), 4) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass
17	5/2	13:30-15:00	Live	Stress Response / Essentials of neuroscience and psychiatric illness	UEZATO Akihito	Obj:3), 4) Class Style:Class discussion Pre-Assignments:Refer course syllabus on the WebClass

### Lecture Style

All sessions will use both the didactic method and the case method with class discussion and group work.

### Course Outline

Refer to the course schedule

### Grading System

The final grade will be based on the sum of all points granted. For those students who fail to meet the requirements for grading or those students who did not fulfill attendance requirements or other necessary requirements, the grade will be marked as credit not granted.

#### Grading Criteria

Grades are finalized by taking into account the sum of all points granted for the following items.

#### (1) Preparation Assignment: 15% of the total course points

Points will be granted upon each Preparation Assignment submission. However, a Preparation Assignment may not be accepted if it is judged to be incomplete.

#### (2) Class Participation: 15% of the total course points

The statements you make during each class will be graded from both qualitative and quantitative perspectives, taking into account your grasp of the assigned materials, the responsiveness to in-class questions posed by the instructor and the quality of contributions made to in-class discussions and debate, for the purpose of assessing your contribution to the class. Key evaluative questions are:

- How deeply did each student analyze issues?
- How well did one mobilize learning of fellow students in the class?

#### (3) Final Report: 70% of the total course points

The evaluation of Final Report will be based NOT on the quantity (the length) but on the quality (content and organization) by taking into account the following factors:

- Analytical ability and insights
- Reasoning skills
- Ability to develop and evaluate hypotheses
- Comprehension of learned concepts and frameworks
- Strength of the argument presented

### Prerequisite Reading

Preparation (reading, viewing, assignments, etc) will be specified in the course syllabus which will be provided to registered students on WebClass.

### Exam eligibility

There will be no final exams in this course. Course gradings will be based on the sum of all points granted from the Preparation Assignment, Class Participation and Final Report.

<p><b>Module Unit Judgment</b></p> <p>2 units</p>
<p><b>TextBook</b></p> <p>Human Genetic Diversity / Julian C. Knight: Oxford University Press, 2009</p> <p>Please purchase the above textbooks before the session "Genetics for public health students" (Sessions 4 and 10)</p>
<p><b>Reference Materials</b></p> <p>Reference materials will be specified in the course syllabus on WebClass.</p>
<p><b>Important Course Requirements</b></p> <p>(1) Self Introduction Set your concrete goal for taking this course and post it, along with your self-introduction, to the course mailing list (phb@ml.tmd.ac.jp) at latest one day prior to the first class. (2) Attendance Attendance of at least 12 out of 17 sessions. You will be marked as absent if you are more than 10 minutes late or you leave the class more than 10 minutes before the class ends. However, if tardiness overall is excessive (in frequency and length, even if it does not go beyond the 10-minute allowance range), some points may be deducted when calculating your final grade. (3) Preparation Assignments When indicated in the course syllabus, students are required to turn in Preparation Assignments. Preparation Assignments assist you in understanding the topic for the class and help you better prepare for class discussion. (4) Preparation and Class Participation All sessions are conducted with the assumption that all students are fully prepared. Students attending class without having prepared will not benefit themselves and, even worse, hold back other students in group discussions. Therefore, all students are expected to prepare thoroughly. (5) Submission of Final Report A report is required for the completion of the course and its deadline will be specified in the course syllabus. The most important point in completing Final Report is to develop and explain your own opinions which should be thought through thoroughly and lead you to make your own conclusion. Merely summarizing cases, methods or frameworks is not sufficient. Explain your thoughts clearly and concisely. Use simple and clear expressions. If you use any charts in your Report, clarify and explain what information those can tell readers. Detailed direction for Final Report will be given at the end of the course syllabus on WebClass. Final report is due at 9:00 am on June 9, 2025. Note: Measures against cheating and plagiarism When writing your Final Report, it is strictly forbidden to copy or use ideas from Final Reports of your classmates or those students who took this course in past terms, handouts from other courses, or materials from past terms. Students should refrain from sharing solutions for Final Report exercises and any other information that could impact the outcome of it through any forms of communication. Both the provider and beneficiary of relevant information shall become disqualified from completing the course in the case of such cheating and plagiarism.</p>
<p><b>Note(s) to Students</b></p> <p>Preparation assignments, dates, time, location of each session are subject to change. Please check with the most updated course syllabus. For non-MPH students, instructor's permission is required before registration.</p> <p>Please submit an email when you receive permission through the Forms below.</p> <p><a href="https://forms.office.com/r/5S5i8Xwhit">https://forms.office.com/r/5S5i8Xwhit</a></p>
<p><b>Email</b></p> <p>HASEGAWA Hisanori: hasegawa.rheu@tmd.ac.jp</p>
<p><b>Instructor's Contact Information</b></p> <p>HASEGAWA Hisanori: Please call 81600 or mail hasegawa.rheu@tmd.ac.jp if contact needed.</p>