Contents

HIGO Program Basic Course

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])
HIGO Morphological Human Physiology I
(Elective: 1 credit)
Subject Code

Course Director: Shigeo Ekino (Histology TEL: 373-5047) ekino@kumamoto-u.ac.jp
Instructors: Takaichi Fukuda (Anatomy TEL: 373-5041） tfukuda@kumamoto-u.ac.jp

【Objectives】

To provide students with opportunities to gain an understanding of human anatomy and histology.

【Content Description】

The course systematically examines the normal structures of the human body through visual as well as microscopic observations.

【Keywords】

Anatomy, histology, phylogeny

【Class Style】 PowerPoint and/or an overhead projector will be used in lectures and active participation in discussions is encouraged.

【Textbooks】 No textbooks have been specified but handouts summarizing lectures will be distributed.

【Recommended Readings】

【Office Hours】

Students who have questions about the lectures, etc. may contact the instructors listed above by phone or e-mail, or visit their offices.

【Evaluation for Grades and Credits】

Grading will be based on the student's understanding of the subject matter, attendance, participation in class discussions, and reports on lecture topics.

【Before Classes】 Read the syllabus and recommended readings.

【After Classes】 Review handouts distributed and notes taken during class. Students may speak with faculty members during their office hours.

【Lecture Schedule】 Please also note the course schedule that has been provided separately.

Session	Date & time	Instructors	Topics
1.	APR 16 TUE 1st period	Takaichi Fukuda	Anatomy I
2.	APR 16 TUE 3rd period	Shigeo Ekino	General Theory of Histology
3.	APR 18 THU 1st period	Takaichi Fukuda	Anatomy II
4.	APR 18 THU 3rd period	Shigeo Ekino	Theories of Histology I
5.	APR 19 FRI 1st period	Takaichi Fukuda	Anatomy III
6.	APR 19 FRI 3rd period	Shigeo Ekino	Theories of Histology II
7.	APR 22 MON 1st period	Takaichi Fukuda	Anatomy IV
8.	APR 23 THU 1st period	Shigeo Ekino	Theories of Histology III

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences[)
HIGO Morphological Human Physiology II
(Elective: 1 credit)
Subject Code

Course Director: Minetaro Ogawa (Cell Differentiation TEL:373-6591） ogawamin@kumamoto-u.ac.jp
Instructors: Tetsuro Yamamoto (Molecular Pathology TEL: 373-5305) tetsu@gpo.kumamoto-u.ac.jp
Motohiro Takeya (Cell Pathology TEL: 373-5095) takeya@kumamoto-u.ac.jp
Takaaki Ito (Pathology and Experimental Medicine TEL: 373-5086) takaito@kumamoto-u.ac.jp
Takashi Ohba (Obstetrics and Gynecology TEL: 373-5269) tkohba@kumamoto-u.ac.jp
Takumi Era (Cell Modulation TEL: 373-6587) tera@kumamoto-u.ac.jp
Kenji Shimamura (Brain Morphogenesis TEL: 373-6583) simamura@kumamoto-u.ac.jp

【Objectives】

To provide students with opportunities to gain an understanding of the embryonic development of the human body and to learn about the pathologic basis of diseases.

【Content Description】

This course examines the structure of the human body in light of ontogeny and systematically classifies anomalies in order to explain how diseases develop.

【Keywords】

Embryology, pathology, ontogeny

【Class Style】 PowerPoint and/or an overhead projector will be used in lectures, and active participation in discussions is encouraged.

【Textbooks】 No textbooks have been specified but handouts summarizing lectures will be distributed.

【Recommended Readings】

【Office Hours】

Students who have questions about the lectures, etc. may contact the instructors listed above by phone or e-mail, or visit their offices.

【Evaluation for Grades and Credits】

Grading will be based on the student's understanding of the course subject matter. Students will be evaluated on the basis of their attendance, participation in class discussions, and reports on lecture topics.

【Before Classes】 Read the syllabus and the recommended readings.

【After Classes】 Review handouts distributed and notes taken during class. Students may speak with faculty members during their office hours.

【Lecture Schedule】 Please also note the course schedule that has been provided separately.

Session	Date & time		Instructors	Topics
1.	APR 22	MON 3rd period	Tetsuro Yamamoto	Inflammation
2.	APR 23	TUE 3rd period	Takaaki Ito	Tumors
3.	APR 25	THU 1st period	Tetsuro Yamamoto	Congenital Disorders
4.	APR 25	THU 3rd period	Motohiro Takeya	Disturbance of Metabolism
5.	APR 26	FRI 1st period	Minetaro Ogawa	Mesoderm and Cell Lineage Specification
6.	APR 26	FRI 3rd period	Takumi Era	Early Embryo Axis and Endoderm Development
7.	APR 30	Tue 1st period	Takashi Ohba	Reproductive Cell Development and Maturation; Follicular Growth and Fertilization
8.	APR 30	Tue 3rd period	Kenji Shimamura	Ectoderm Regionalization and Morphogenesis

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])

HIGO Functional Human Physiology I
(Selective: 1 credit)
Subject Code

Course Director: Kazuhito Tomizawa (Molecular Physiology TEL: 373-5050)
tomikt@kumamoto-u.ac.jp
Instructors: Wen-Jie Song (Sensory and Cognitive Physiology TEL: 373-5056)
song@kumamoto-u.ac.jp
Hideaki Tanaka (Developmental Neurobiology TEL: 373-5292)
hitanaka@kumamoto-u.ac.jp
Kunimasa Ohta (Developmental Neurobiology TEL: 373-5293)
ohta9203@kumamoto-u.ac.jp
Teru Ogura (Molecular Cell Biology TEL: 373-6578)
ogura@gpo.kumamoto-u.ac.jp

【Objectives】

This course provides students with opportunities to understand and discuss how the human body's molecules, cells, tissues, and organs function in light of physiology and cell biology. Cell biology helps students understand how cells, the basic unit of the human body, work. Physiology, on the other hand, helps students understand the mechanisms behind the human body's physiological functions.

【Content Description】

The classes dealing with cell biology illustrate the structure of the cell membrane; transport and signal transduction across the membrane; protein transport, modification, arrangement, degradation, as well as the cell organelles involved in these functions; cytoskeletons; and the molecular motors that control cell type and motility.
The classes that deal with physiology illuminate neurological functions (e.g. senses, motion, and memory) as well as cellular and molecular mechanisms that maintain the homeostasis of a living organism.

【Keywords】

Cell biology: Cell structure, signal intercellular and intracellular signal transduction, protein modification and degradation, cytoskeletons, molecular motors
Physiology: Ion channels, nerve activity, synapses, neural circuits, plasticity, emotion, homeostasis, hormones

【Class Style】 Visual aids, including a projector and video, will be used in the lectures and active participation in discussions is encouraged.

【Textbooks】 No textbooks have been specified but handouts summarizing the lecture will be distributed.

【Recommended Readings】

- Sylvia S. Mader, *Human Biology*, translated by Takeo Sakai and Takao Okada, Igaku-Shoin, October 2005
- Bruce Alberts, Alexander Johnson, Peter Walter, Julian Lewis, *Molecular Biology of the Cell*, January 2008

【Office Hours】

Students who have questions about the lectures, etc. may contact the instructors listed above by phone or e-mail, or visit their offices.

【Evaluation for Grades and Credits】

Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.

【Before Classes】 Read the syllabus and recommended readings.

【After Classes】 Review class handouts and notes. Students who have any questions may visit the instructors during their office hours.

【**Lecture Schedule**】 Please also note the course schedule that has been provided separately.

Session	Date & time	Instructors	Topics
1.	APR 16 TUE 2nd period	Wen-Jie Song	Vision and Visual Plasticity
2.	APR 16 TUE 4th period	Wen-Jie Song	Neural Mechanism for Motion Control
3.	APR 17 WED 2nd period	Kazuhito Tomizawa	Mechanism of Homeostasis in Living Organisms
4.	APR 18 THU 4th period	Kazuhito Tomizawa	Learning and Emotional Memory
5.	APR 19 FRI 2nd period	Hideaki Tanaka	Cell Membrane Structure and Membrane Transport
6.	APR 19 FRI 4th period	Kunimasa Ohta	Cellular Signal Transduction
7.	APR 22 MON 2nd period	Teru Ogura	Intracellular Protein Dynamics
8.	APR 22 MON 4th period	Teru Ogura	Cytoskeletons and Molecular Motors

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])

HIGO Functional Human Physiology II
(Selective: 1 credit)
Subject Code

Course Director: Kazuya Yamagata (Medical Biochemistry TEL: 373-5068)
k-yamaga@kumamoto-u.ac.jp
Instructors: Chiaki Setoyama (Molecular Enzymology TEL: 373-5064)
setoyama@gpo.kumamoto-u.ac.jp
Nobuo Sakaguchi (Immunology TEL: 373-5134)
nobusaka@gpo.kumamoto-u.ac.jp
Kazuhiko Kuwahara (Immunology TEL: 373-5135)
kazukuwa@gpo.kumamoto-u.ac.jp
Yasuharu Nishimura (Immunogentics TEL: 373-5310)
mxnishim@gpo.kumamoto-u.ac.jp

【Objectives】

This course provides students with opportunities to understand and discuss how the human body's molecules, cells, tissues, and organs function in light of biochemistry and immunology. Biochemistry helps students understand the body's basic metabolic dynamics as well as its regulatory mechanisms and their relation to pathological conditions. Immunology, on the other hand, helps students understand how a living organism distinguishes foreign molecules from its own and combats them.

【Content Description】

Classes dealing with biochemistry illustrate metabolic pathways in the human body and their relation to pathological conditions.
Classes in immunology cover the molecules, cells, tissues, and organs that comprise the immune system, and lay out the molecular mechanism by which the immune system identifies and removes various infectious organisms.

【Keywords】

Biochemistry: Glycometabolism, nucleotide metabolism, amino acid metabolism, lipid metabolism, metabolic diseases
Immunology: Antigens, natural immunity, acquired immunity, immunocompetent cells, immunocompetent molecules, immune reactions, immune tolerance

【Class Style】 Visual aids, including a projector and video, will be used in lectures where active participation in discussions is encouraged.

【Textbooks】 No textbooks have been specified but handouts summarizing the lecture will be distributed.

【Recommended Readings】

- Sylvia S. Mader, *Human Biology*, translated by Takeo Sakai and Takao Okada, Igaku-Shoin, October 2005
- Bruce Alberts, Alexander Johnson, Peter Walter, Julian Lewis, *Molecular Biology of the Cell*, January 2008

【Office Hours】

Students who have questions about the lectures, etc. may contact the instructors listed above by phone or e-mail, or visit their offices.

【Evaluation for Grades and Credits】

Grading will be based on the student's understanding of the course subject matter. The students' understanding will be evaluated on the basis of papers and quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average score of the papers and quizzes as well as participation in class discussions.

【Before Classes】 Read the syllabus and recommended readings.

【After Classes】 Review class handouts and notes. Students who wish to speak with faculty members may see them during their office hours.

【**Lecture Schedule**】 Please also note the course schedule that has been provided separately.

Session	Date & time	Instructors	Topics
1.	APR 23 TUE 2nd period	Kazuya Yamagata	Glucose Metabolism and Disorders
2.	APR 23 TUE 4th period	Kazuya Yamagata	Lipid Metabolism and Disorders
3.	APR 24 TUE 2nd period	Chiaki Setoyama	Biosynthesis and Decomposition of Purines and Pyrimidine
4.	APR 25 THU 4th period	Chiaki Setoyama	Amino Acid Metabolism and Disorders
5.	APR 26 FRI 2nd period	Nobuo Sakaguchi	Lymphatic Vessel Network, Cells, Tissues, and Organs
6.	APR 26 FRI 4th period	Kazuhiko Kuwahara	Structures and Functions of Antibodies; Antibody Production in B Cells
7.	APR 30 TUE 2nd period	Yasuharu Nishimura	The T Cell Biological Defense Mechanism
8.	APR 30 TUE 4th period	Yasuharu Nishimura	Diverse Types and Functions of T Cells

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])

HIGO Bioethics
(Elective: 1 credit)
Subject Code

Course Director: Atsushi Asai (Bioethics TEL: 373-5534) aasai@kumamoto-u.ac.jp

【Objectives】

1. To introduce students to a wide range of ethical and historical problems associated with medical treatment and science.
2. To provide students with opportunities that will help them understand the basic problems inherent in the practice of medicine as well as the conduct of research and enable them to make logical arguments in exploring these problems.
3. To give students an in-depth knowledge of relevant ethical guidelines and help them understand their basis.
4. To help students forge a solid intellectual foundation in biomedical ethics.

【Content Description】

This course explores the history, case examples, problems, principles, concepts, and relevant ideas regarding bioethics and medical ethics so students will gain the ethical footing they will need as medical researchers and professionals. The class is occasionally divided into small groups for discussion and students will be required to give presentations. Reading relevant articles from major journals with a critical eye, students examine problems associated with medical treatment and science. The topics this course covers are subject to change.

【Keywords】 Bioethics, medical ethics

【Textbooks】 Handouts will be distributed every class period.

【Recommended Readings】

V. Ravitsky, A. Fiester, A. L. Caplan (eds). *The Penn Center Guide to Bioethics* (171-180), New York: Springer Publishing Company, 2009.
Bonnie Steinbock (Editor) The Oxford Handbook of Bioethics, Oxford University Press, Oxford, 2007.
Stephan G. Post (Editor) Encyclopedia of Bioethics, 3rd edition, Volume 1, Macmillan Reference USA, Thomson/Gale, 2004.
Carl Mitchan (Editor in Chief) Encyclopedia of Science, Technology, and Ethics. Volume 1, Macmillan Reference USA, Thomson/Gale, 2005.
Sylvia S. Mader: Bioethical Focus. Human Biology, eighth edition. McGraw-Hill, 2004.
Tony Hope. Medical Ethics A very short introduction. Oxford University Press, Oxford, 2004
Tom L. Beauchamp, James F. Childress: Principles of Biomedical Ethics 4th edition. Oxford University Press, New York, 1994.
Kuhse H, Singer P(eds). A Companion to Bioethics, London; Oxford University Press:,1998.
Lo B: Resolving ethical dilemmas A Guide for Clinician, Lippincott Williams and Wilkins, Baltimore, 2000.
Raymond Devettere: Practical Decision Making in Health Care Ethics, 2nd edition, GUP, 2000.
Deborah R. Barnbaum, Michael Byron: Research Ethics, Prentice Hall, New Jersey, 2001.
Peter Singer: Unsanctifying Human Life, (edited by Kuhse H), Blackwell Publishers, 1999, Oxford,2002
Rachels J: The Element of Moral Philosophy 2nd ed., McGraw-Hill, 1993.

【Office Hours】 Students who have questions may contact the instructor by phone or e-mail, or visit his office.

【Evaluation for Grades and Credits】 Student evaluations will be weighted on attendance and a term paper.

【Before Classes】 Read the syllabus and recommended readings.

【After Classes】 Review handouts distributed and notes taken during class. Students may speak with faculty members during their office hours.

【**Lecture Schedule**】

Session	Date & time	Instructor	Topic
1.	APR 18 THU 2nd period	Atsushi Asai	General Theory of Bioethics
2.	APR 25 THU 2nd period	Atsushi Asai	Research Ethics I (Research ethics principles, history, and guidelines)
3.	MAY 2 THU 2nd period	Atsushi Asai	Research Ethics II (Ethical issues in epidemiological and sociological research)
4.	MAY 9 THU 2nd period	Atsushi Asai	Ethics of Advanced Medicine I (Organ transplants, abortion, assisted reproduction technologies)
5.	MAY 16 THU 2nd period	Atsushi Asai	Ethics of Advanced Medicine II (Regenerative medicine, genetic diagnoses and therapies)
6.	MAY 23 THU 2nd period	Atsushi Asai	Clinical Ethics I (Informed consent, selective non-treatment)
7.	MAY 30 THU 2nd period	Atsushi Asai	Clinical Ethics II (Terminal care, privacy)
8.	JUN 6 THU 2nd period	Atsushi Asai	Ethics in Public Health Policies

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])

Course Title: HIGO Clinical Pathology
(Compulsory: 1 credit)
Subject Code

Course Director: Shuzo Matsushita (AIDS Research II TEL: 373-6536) shuzo@kumamoto-u.ac.jp
Assistant Director: Hirotsugu Korogi (Respiratory Medicine TEL: 373-5012) kohrogi@kumamoto-u.ac.jp
Instructors: Eiichi Araki (Metabolic Medicine TEL: 373-5169) earaki@gpo.kumamoto-u.ac.jp
Yukio Ando (Neurology TEL: 373-5893) andoy709@kumamoto-u.ac.jp
Fumio Endo (Pediatrics TEL: 373-5188) fendo@kumamoto-u.ac.jp
Yutaka Sasaki (Gastroenterology and Hepatology TEL: 373-5150) sasakiy@kumamoto-u.ac.jp
Masanori Shinohara (Oral and Maxillofacial Surgery TEL: 373-5285)
shinora@kumamoto-u.ac.jp
Koichi Kaikita (Cardiovascular Medicine TEL: 373-5175) kaikitak@kumamoto-u.ac.jp

【Objectives】
In Pathology and Pathological Conditions students learned about how diseases are classified and how they develop. Clinical Pathology picks up where that course left off with a focus on major diseases. This course provides students with opportunities to learn about specific clinical and pathological conditions along with their underlying molecular mechanisms so that they can expand their understanding of the nature of various diseases. Students will also learn about the particular characteristics of diseases that manifest themselves in the nervous system, motor system, and tissues as well as the mechanisms behind systemic conditions, such as immune deficiency.

【Course Description】Instructors will discuss eight major diseases using the aid of an LCD projector. See the schedule of topics below.

【Keywords】 Congenital anomaly, metabolic disorder, degenerative disease, circulatory disturbance, inflammation, tumor, immune deficiency

【Class Style】 PowerPoint and/or an overhead projector will be used in lectures where active participation in discussions is encouraged.

【Textbooks】 Some instructors may distribute handouts.

【Recommended Readings】 The instructors will suggest readings during class.

【Office Hours】
Students who have questions about the lectures, etc. may contact the instructors listed above by phone or e-mail, or visit their offices.

【Evaluation for Grades and Credits】
Evaluation of coursework will be weighted by attendance, quizzes, and papers. Attendance will account for 40 percent (5 percent per class period x 8), and quizzes or papers 60 percent. Students who have scored a 60 for attendance and papers will pass the course.
Instructors look at the following when grading quizzes and papers:
1) Whether the student correctly understands the terms used in the selected area under study.
2) Whether the student correctly understands the background of the selected area under study.
3) Whether the student correctly understands the current state of the selected area under study.
4) Whether the student correctly grasps the subject matter discussed in class.
5) Whether the student offers his/her own view.
The instructors evaluate quizzes and papers on a scale of 1 to 10 (10 x 8 would yield a maximum score of 80 points). The total score at the end of the semester is multiplied by 3/4 and added to the score for attendance to calculate the final grade.

【**Before Class**】Read the syllabus and recommended readings.

【**After Classes**】Review class handouts and notes. Students may consult with the instructors during their office hours.

【**Lecture Schedule**】

Session	Date & Time		Instructors	Topics
1.	JUN 3 MON	4th period	Eiichi Araki	Molecular Pathology of Diabetes
2.	JUN 4 TUE	4th period	Fumio Endo	Congenital Disorders of Amino Acid Metabolism
3.	JUN 6 THU	4th period	Hirotsugu Korogi	Pneumonia and Bronchial Asthma
4.	JUN 7 FRI	4th period	Koichi Kaikita	Pathology and Treatment of Acute Coronary Syndrome
5.	JUN 10 MON	4th period	Yutaka Sasaki	Hepatic Cirrhosis and Liver Cancer
6.	JUN 11 TUE	4th period	Masanori Shinohara	Pathology and Characteristics of Periodontal Disease
7.	JUN 13 THU	4th period	Yukio Ando	Diagnosis and Treatment of Intractable Neurological Diseases
8.	JUN 14 FRI	4th period	Shuzo Matsushita	AIDS and Its Pathological Characteristics

HIGO Program (Basic Course, Four-year Course [Graduate School of Pharmaceutical Sciences])

HIGO General Social Medicine

(Compulsory: 2 credits)

Subject Code

Course Director: Yoko Nishitani (Forensic Medicine TEL: 373-5124) n-yoko@kumamoto-u.ac.jp
Instructors: Hideki Kishikawa (Health Care Science TEL: 342-2164) hdkkishi@gpo.kumamoto-u.ac.jp
Takahiko Kato (Public Health TEL: 373-5112) katoht@gpo.kumamoto-u.ac.jp
Wei Changnain (Preventive and Environmental Medicine TEL: 373-5321) cnwei@gpo.kumamoto-u.ac.jp
Takao Kitano (Public Health TEL: 373-5112) kitano@gpo.kumamoto-u.ac.jp
Wataru Miyazaki (Public Health TEL: 373-5112) miya@kumamoto-u.ac.jp
Kosei Yonemitsu (Forensic Medicine TEL: 373-5124) yonemie@gpo.kumamoto-u.ac.jp

【**Objectives**】Environmental and socio medical sciences are vital spheres of medicine. Research in these disciplines examines how social forces impact human health. Our health is determined largely by the environment in which we live and the strength of the social safety net that safeguards public health and welfare. This course provides students with opportunities to examine the relationship between the environment and health as they grasp the need for comprehensive health care and disease prevention. Students will study health care and legal measures designed to protect an individual's basic human rights and ensure public safety as they master the fundamental concepts of interpersonal social relationships based on social psychology.

【**Content Description**】 This course fully explores the environmental and socio medical sciences in light of preventive and environmental medicine (hygiene), public health, forensic medicine, psychiatry, neuropathobiology, and child development. Classes on preventive and environmental medicine (hygiene) include practical lectures on environmental dynamics; the relationship between the environment and people; environmental indicators and assessment; establishing and maintaining environmental standards; the concept of public health; nurturing a healthy society through preventive medicine; and epidemiology, the discipline that underpins public health. Lectures on forensic medicine lay the groundwork for everything from identifying and classifying causes of death to medical, legal, and social aspects of death, while illustrating how forensics can create better lives for all.

【**Keywords**】 The environment - people, environmental and social diseases, quantity - reactions and confluent relations, public health studies, promoting better health, epidemiology, forensic medicine, medical jurisprudence studies, somatic death, social psychiatry, social psychology

【**Textbooks**】 Handouts summarizing lecture topics will be distributed.

【**Recommended Readings**】

・Kazuo Saito, et al. eds., *Atarashii kankyo eisei (New environmental hygiene)*, Nankodo, Tokyo ・Motonori Fujiwara, et al. eds., *Sogo eisei koshu eisei gaku (General hygiene and public health studies)*, Nankodo, Tokyo ・Maxy-Rosenan-Last, *Public Health & Preventive Medicine*, 14th ed., Appleton & Lange, 1998 ・The Japan Epidemiological Association eds., *Ekigaku handobukku: Juyo shikkan no ekigaku to yobo (Epidemiology handbook: epidemiology and preventive care for severe diseases)*, Nankodo, Tokyo, 1998 ・Seiichi Kashimura, Shigeyuki Tsunenari, et al., *Gakusei no tame no hoigaku (Forensic medicine for students)*, Nankodo, Tokyo, 2006 ・ "Forensic Pathology"by Bernard Knight, 2nd ed., Arnold, London, Sydney and Auckland, 1996・Brown, G., & Harris, T. (1978). Social Origin of Depression: A study of Psychiatric Disorder in Women. London: Tavistock. ・Henderson, A.S.(1998). An Introduction to Social Psychiatry. Oxford: Oxford University Press.

【**Evaluation for Grades and Credits**】Students will be graded on the basis of mini-reports submitted after each class.

【**Grading and Evaluation Criteria**】 Students will be asked to take about 15 minutes after every class to write and submit a mini-report related to the topic of that day's discussion. These brief reports will be scored from 0 to 100. The scores for all the papers combined will be totaled and divided by 16 (the number of class periods). Students who have scored 60 or higher will receive a passing grade. The mini-reports will also be used to check students' attendance. The papers will be reviewed with an eye to whether the student:
1) correctly understands the topic.
2) has completely grasped everything presented in the lecture.
3) has clearly and logically expressed his/her own views.

【**Before Classes**】Read the syllabus and the recommended readings.

【**After Classes**】Review handouts distributed and notes taken during class. Students may speak with faculty members during their office hours.

【Lecture Schedule】

Session	Date & Time	Instructor	Field	Topic & Keyword
1.	MAY 1 WED 2nd period	Hideki Kishikawa	General Medicine (1)	Basics of Clinical Nutrition
2.	MAY 2 THU 1st period	Hideki Kishikawa	General Medicine (2) Pathological Conditions	Clinical Nutrition and
3.	MAY 7 TUE 1st period	Yoko Nishitani	Forensic Medicine (1)	Definition and Objectives of Forensic Medicine
4.	MAY 7 TUE 2nd period	Yoko Nishitani	Forensic Medicine (2)	Forensic Medicine and Science
5.	MAY 8 WED 2nd period	Kosei Yonemitsu	Forensic Medicine (3)	Techniques for Investigating Unnatural Deaths
6.	MAY 9 THU 1st period	Takahiko Kato	Public Health Studies (1)	General Theory and Concepts
7.	MAY 10 FRI 1st period	Wataru Miyazaki	Public Health Studies (2)	General Theory of Toxicology
8.	MAY 10 FRI 2nd period	Takao Kitano	Public Health Studies (3)	International Public Health
9.	MAY 13 MON 1st period	Takahiko Kato	Public Health Studies (4)	Epidemiology (1)
10.	MAY 13 MON 2nd period	Takahiko Kato	Public Health Studies (5)	Epidemiology (2)
11.	MAY 14 TUE 1st period	Yoko Nishitani	Forensic Medicine (4)	Social Aspects of Death (1)
12.	MAY 14 TUE 2nd period	Yoko Nishitani	Forensic Medicine (5)	Social Aspects of Death (2)
13.	May 15 WED 2nd period	Wei Changnain	Environmental Medicine (1) Improving Public Health	Health, Lifestyles, and
14.	May 16 THU 1st period	Wei Changnain	Environmental Medicine (2)	Assessing Lifestyles
15.	May 17 FRI 1st period	Wei Changnain	Environmental Medicine (3)	Basic Techniques in Environmental and Socio Medical Sciences (1)
16.	May 17 FRI 2nd period	Wei Changnain	Environmental Medicine (2)	Basic Techniques in Environmental and Socio Medical Sciences (2)

HIGO program (Basic Course, Advanced Course, Four-year Course)

Principles of Social and Cultural Sciences; Bioethics, Public Policy and Organizational Management
(compulsory: 2 credits)
Subject Code

Course Director: Takao Takahashi (Bioethics TEL: 342-2405) ttaka@kumamoto-u.ac.jp
Instructors: Shinya Ueno (Public Policy TEL:342-2044) ueno@gpo.kumamoto-u.ac.jp
Fumiaki Yasukawa (Organizational Economics TEL:342-2370) fyasu@kumamoto-u.ac.jp

【Objectives】

This lecture focuses on teaching the essential and representative theories in social and cultural science associated with politics, business and humanity. The lecture is divided into three parts; 1)Public policy in which we will cover the issue of policy design in relation to governance; 2)Bioethics in which we will argue autonomy, justice and human dignity, and 3)Organizational Management in which we will look at the nature of organization and management, market characteristics and the issue of incentive mechanism. This lecture will provide elements of social and human sciences which are very helpful for us to understand the holistic structure and behavior of modern society and human beings.

【Content Description】

1. Bioethics

This lecture deals with basic principles of bioethics, i.e., respect for autonomy, non-maleficence, beneficence justice and human dignity. You will study not only the content of those principles, but also their application to concrete bioethical problems, such as euthanasia, abortion, organ transplant, human cloning and allocation of healthcare resources.

2. Public Policy

This lecture introduces the basic knowledge of public policy. Policy study is an applied social science discipline designed for solving public problems such as politics, economics, philosophy, sociology, management, and social psychologies. You will develop critical-thinking skills in examining various political arguments.

3. Organizational Management

This lecture considers some of the theoretical and pragmatic aspects of organizational management.
First of all, we will study the conceptual proxies of management itself, and then, we will look at the structures and attributes of them, the relationship between market and organizations, and the observable or unobservable behaviors and strategies. Finally, we will argue the issue of incentive mechanisms.

【Keywords】 Bioethics, justice, decision making, public policy, governance, organization, incentive, management

【Class Style】 PowerPoint and/or OHP will be used in the lectures, and active participation in discussions is encouraged. Extra classes or video lectures are considered for those who are regularly absent for unavoidable reasons.

【Textbooks】 Textbooks are not specified, and handouts will be distributed.

【Recommended Readings】 Not specified.

【Office Hours】 If you have any questions on the topics or schedule of the classes, please contact each instructor as listed above.

【Evaluation for Grades and Credits】 Grading will be based on paper summaries and a final report.

【Before classes】 You are expected to read a wide range of literature .

【After classes】 Prepare for the submission of reports and summary of the experimental results.

【**Lecture Schedule**】 Please also refer to the course timetable.

Session	**Date & time**	**Instructors**	**Topics**
1.Bioethics			
１.	undecided	Dr. Takao Takahashi	Respect for Autonomy
２.	undecided	Dr. Takao Takahashi	Non-maleficence
３.	undecided	Dr. Takao Takahashi	Beneficence
４.	undecided	Dr. Takao Takahashi	Justice
５.	undecided	Dr. Takao Takahashi	Human Dignity
2.Public Policy			
６.	undecided	Dr. Shinya Ueno	Public Policy Approach
７.	undecided	Dr. Shinya Ueno	Designing Public Policy
８.	undecided	Dr. Shinya Ueno	Decision Making and Public Interest
９.	undecided	Dr. Shinya Ueno	Policy and Ideas
１０.	undecided	Dr. Shinya Ueno	Governance
3.Organizational Management			
１１.	undecided	Dr. Fumiaki Yasukawa	Concept of Management in Organizations
１２.	undecided	Dr. Fumiaki Yasukawa	Structure and Attributes of Organizations
１３.	undecided	Dr. Fumiaki Yasukawa	Organizations and Markets
１４.	undecided	Dr. Fumiaki Yasukawa	Behaviors and Strategies
１５.	undecided	Dr. Fumiaki Yasukawa	Incentive Mechanisms
１６.	undecided	Dr. Takahashi, Dr. Ueno and Dr. Yasukawa	Workshop for Inviting Social and Cultural Sciences

HIGO Program (Basic Course)

HIGO Governmental Seminar Series I
(Compulsory: 1 credit)
Subject Code

Course Director: Tetsumi Irie (Clinical Chemistry and Informatics TEL: 371-4552) tirie@gpo.kumamoto-u.ac.jp
Assistant Course Director: Takahiko Kato (Public Health TEL: 373- 5112) katoht@gpo.kumamoto-u.ac.jp
Instructors: The HIGO program faculty

【Objectives】

The field of health and life sciences needs leaders equipped with a unique expertise and global perspective that will enable them to find the root of the problems facing local and global (glocal) communities and lead industry-academia-government initiatives that will bridge Japan and the surrounding region with the rest of the world. Students seeking to fill the shoes of this kind of leader must have a solid academic footing in the medical, pharmaceutical and life sciences as well as an extensive knowledge of everything from public health and welfare to environmental resources, sustainability, biodiversity, environmental ethics, and more. In this course, students will attend seminars that address issues related to health and life sciences, both at personal and global levels, from a glocal viewpoint. Through these seminars, students will acquire latest knowledge in the fields that are not covered by conventional graduate-level educational courses.

【Content Description】

Lecturers from the Kumamoto prefectural government, Kumamoto municipal government, national and other government agencies will be invited to discuss topics in medical and pharmaceutical sciences as well as medical and pharmaceutical policy, welfare, environment, public health, health risk management, environmental resources, sustainability, biodiversity, environmental ethics, etc. All lectures will either be in English or interpreted into English when given in Japanese.

【Keywords】

Health care, welfare, environment, public health, environmental resources, sustainability, biodiversity, environmental ethics

【Class Style】

Class discussions will be driven by questions and answers and use PowerPoint, an overhead projector etc. Students will attend the seminars and write reports. The reports should include a summary of the lectures and the students' own thoughts on the topics.

【Textbooks】

None specified

【Recommended Readings】

None specified

【Evaluation for Grades and Credits】

Students are required to attend 8 seminar classes and submit 2 papers (via e-portfolio). Students will be graded on the basis of their papers.

【Office Hours】 Questions about the seminars, etc. may be sent to any of the faculty members listed above via e-mail. Students may also speak to faculty members in person during their office hours.

【Before Classes】 Students are encouraged to seek out information on the government agencies to be featured in the seminar lectures via the Internet, etc. prior to beginning this course.

【After Classes】 Students are encouraged to carefully review their notes and handouts from the seminar. Students may speak with faculty members during their office hours. Students should also review related e-learning programs when available.

【Lecture Schedule】 Students will attend seminars during their first two years. Classes do not meet at regularly scheduled dates and times. The schedule will be posted on the HIGO Program web site once it is finalized. Students are urged to check the schedule frequently.

HIGO Program (Basic Course)

HIGO Business Seminar Series I
(Compulsory: 2 credits)
Subject Code

Course Director: Hidetoshi Arima (Physical Pharmaceutics TEL: 371-4160) arimah@gpo.kumamoto-u.ac.jp
Assistant Course Director: Yuichi Oike (Molecular Genetics TEL: 373-5140) oike@gpo.kumamoto-u.ac.jp
Instructors: The HIGO program faculty

【Objectives】

The field of health and life sciences needs leaders equipped with a unique expertise and global perspective that will enable them to find the root of the problems facing local and global (glocal) communities and lead industry-academia-government initiatives that will bridge Japan and the surrounding region with the rest of the world. This course is designed to provide students with a corporate world view and cultivate a sensitivity to local needs as well as the ability to respond to those needs as a responsible corporate citizen. Leading corporate executives, researchers, developers, and other guest lecturers will be invited from across Japan, to share their experiences and show students how they can give back to society through the health and life sciences.

【Content Description】

Lecturers invited from the following selected companies will discuss the medical and pharmaceutical sciences as they relate to a diverse range of areas that span everything from corporate philosophy to compliance, corporate social responsibility, community outreach, the local economy, human resources development, internationalization, the environment, sustainability, management, public relations, and more. The class will meet 15 times. Lectures will be in English and interpreted into English when in Japanese.

(Selected Companies)
? Companies and organizations located in Kumamoto Prefecture
Society and culture-related companies: Kumamoto Nichinichi Shimbun
Pharmaceutical company: Kaketsuken (The Chemo-Sero-Therapeutic Research Institute)
? Major pharmaceutical companies in Japan
Daiichi Sankyo Co., Ltd.
? Preclinical services company in Japan: Shin Nippon Biomedical Laboratories, Ltd.

Companies that offer lectures are subject to change. Additions or changes of companies will be posted on the HIGO program web site.

【Keywords】 Corporate philosophy, corporate compliance, health, health care, drug development, drug improvement, social action, community service, internationalization, local economy, environment, public relations

【Class Style】 Classes involve question-and-answer-focused discussions using PowerPoint, overhead projector etc. Students will attend the seminars and write reports. The reports should include a summary of the lectures and the students' own thoughts on the topics.

【Textbooks】 None specified, but handouts outlining the seminar will be distributed.

【Recommended Readings】 None specified

【Office Hours】 Questions about the seminars, etc. may be sent to any of the faculty members listed above via e-mail. Students may also speak to faculty members in person during their office hours.

【Evaluation for Grades and Credits】 Students are required to attend 15 seminars and submit 3 reports. Students' level of understanding in the areas specified in the course objectives will be evaluated on the basis of questions and answers during class discussions as well as their reports on the topics given after each seminar session.

【Before Classes】 Students are encouraged to seek out information on the companies participating in the seminar via the Internet, etc. prior to beginning the course.

【After Classes】 Students are encouraged to carefully review their notes and handouts from the seminar. Students who wish to speak with faculty members may see them during their office hours. Students should also review related e-learning programs when available.

【Lecture Schedule】 Students will attend seminars during their first two years. Classes do not meet at regularly scheduled dates and times. The schedule will be posted on the HIGO Program web site once it is finalized. Students are urged to check the schedule frequently.

HIGO program (Basic Course, Advanced Course, Four-year Course)

Exercise lesson: HIGO Chinese course (Elective: 1 credits) Subject Code
HIGO Chinese course I (Elective: 1 credits) Subject Code
HIGO Chinese course II (Elective: 1 credits) Subject Code

Course Director: : Hiroshi Sasaki （Cell Fate Control TEL: 373-6606）sasaki@kumamoto-u.ac.jp
Sub-director： Wen-Jie Song （Pathology TEL: 373-5086）song@kumamoto-u.ac.jp

【Objectives】
To learn the basics of Chinese, and to aquire the skills for having simple conversations.

【Content Description】
- **[important notice!] Lectures will be given in Japanese.**
- In HIGO Chinese course I, lectures and interactive exercises will be given for unlearned students to learn the basics of Chinese.
- In HIGO Chinese course II, advanced lectures and interactive exercises, which include basic words of medical science, pharmacy and public administration, will be given.
- HIGO Chinese course (4-year course) corresponds to either HIGO Chinese course I or II according to students' own ability.

【Keywords】
Chinese exercise

【Class Style】
Intensive lecture courses by external lecturers (4 x 3 hours) and e-learning

【Textbooks】
Textbooks are not specified, and handouts will be distributed.

【Office Hour】
If you have any questions on topics or schedule of the classes, please contact the instructors listed above.

【Evaluation for Grades and Credits】
Grading will be based on paper summaries, and the achievement tests.

【Learning Before classes】

【Learning After classes】 It is recommended for you to review the handout materials distributed in the lectures and your notebooks well. It is also recommended to review the lectures by using e-learning contents.

【Lecture Schedule】
The schedule will be posted later on the homepage of the HIGO program (http://higoprogram.org/).

HIGO program (Basic Course, Advanced Course, Four-year Course)

Exercise lesson: HIGO English course (Elective: 1 credits) Subject Code
HIGO English course I (Elective: 1 credits) Subject Code
HIGO English course II (Elective: 1 credits) Subject Code

Course Director: : Hiroshi Sasaki （Cell Fate Control TEL: 373-6606）sasaki@kumamoto-u.ac.jp
Sub-director： Wen-Jie Song （Pathology TEL: 373-5086）song@kumamoto-u.ac.jp

【Objectives】
To aquire the skills of writing scientific manuscripts and giving scientific presentations in English.

【Content Description】
- Specialized lecturers will be invited from language shcools.
- In HIGO English course I, lectures will be given on the basic skills of writing scientific manuscripts and giving scientific presentations in English.
- In HIGO English course II, advanced lectures and interactive excercises will be performed on the skills of writing scientific manuscripts and/or giving scientific presentations in English. Discussions will be made using on the manuscripts and/or the presentations prepared by the students as samples.
- HIGO English course (4-year course) corresponds to either HIGO English course I or II according to students' own ability.

【Keywords】
English writing, English presentation

【Class Style】
Intensive lecture courses will be given by external lecturers

【Textbooks】
Textbooks are not specified, and handouts will be distributed.

【Office Hour】
If you have any questions on topics or schedule of the classes, please contact the instructors listed above.

【Evaluation for Grades and Credits】
Grading will be based on paper summaries, and the final report.

【Learning Before classes】 In HIGO English course II, students should prepare and submit a short manuscript and/or a presentation that describe their own research.

【Learning After classes】 In HIGO English course II, students will recieve the correction of the short manuscripts they prepared.

【Lecture Schedule】
Two day intensive course will be provided.
The schedule will be posted later on the homepage of the HIGO program (http://higoprogram.org/).

HIGO English course I
Day 1: basic skills of writing scientific manuscripts
Day 2: basic skills of giving scientific presentations

HIGO English course II
Day 1: advanced skills of writing scientific manuscripts, and practical exercises using short manuscripts prepared by the students.
Day 2: advanced skills of giving scientific presentations and practical exercises by giving short presentations by the students.

HIGO program (Basic Course, Advanced Course, Four-year Course)

Exercise lesson: HIGO Japanese course (Elective: 1 credits) Subject Code
HIGO Japanese course I (Elective: 1 credits) Subject Code
HIGO Japanese course II (Elective: 1 credits) Subject Code

Course Director: : Hiroshi Sasaki（Cell Fate Control TEL: 373-6606）sasaki@kumamoto-u.ac.jp
Sub-director: Wen-Jie Song（Sensory and Cognitive Physiology TEL: 373-5086）song@kumamoto-u.ac.jp
Instructors: Faculty members of the Center for Globalization of Kumamoto University
(https://ewww.kumamoto-u.ac.jp/contact/)

【Objectives】
These courses are for foreign students only. To learn the basics of Japanese, and to aquire the skills for communications in Japanese.

【Content Description】
- This course is provided by the Center for Globalization of Kumamoto University
- Three levels of courses described below will be held.
- In HIGO Japanese course I (Part 1, 8 lessons), lectures and interactive excercises will be given for unlearned foreign students to aquire the minimum ability of Japanese conversation to be required for daily life.
- HIGO Japanese course I (Part 2, 8 lessons) will extend the contents of the HIGO Japanese course I (Part 1), and improve the ability of conversation required for daily life. Although credit will not be given to this course, it is strongly recommended to take this course before taking HIGO Japanese course II
- In HIGO Japanese course II, advanced lectures and interactive exercises, which include basic words of medical science, pharmacy and public administration, will be given (8 lessons).

【Keywords】
Japanese exercise

【Class Style】
Exercises for conversation

【Textbooks】
Textbooks are not specified, and handouts will be distributed.

【Office Hour】
If you have any questions on topics or schedule of the classes, please contact the instructors listed above.

【Evaluation for Grades and Credits】
Grading will be based on paper summaries, and achievement tests etc.

【Learning Before classes】

【Learning After classes】 It is recommended for you to review the handout materials distributed in the lectures and your notebooks well.

【Lecture Schedule】
Each course will be opened twice a year.
HIGO Japanese course I (Part 1)
May (Tue. and Thu., the 3rd period [13:15~14:45]), October (Wed. and Thu., the 3rd period [13:15~14:45])
HIGO Japanese course I (Part 2)
June (Tue. and Thu., the 3rd period [13:15~14:45]), November (Wed. and Thu., the 3rd period [13:15~14:45])
HIGO Japanese course II
July (Tue. and Thu., the 3rd period [13:15~14:45]), December (Wed. and Thu., the 3rd period [13:15~14:45])
The lectures will be given in the seminar room 1 on the 4th floor of the Medical Education & Library Building.
The detailed schedule will be posted later on the homepage of the HIGO program (http://higoprogram.org/).

【HIGO Japanese course I (Part 1)】
Aim: To learn minimal conversations essential for daily life in Japanese
To be able to read Japanese characters: HIRAGANA and KATAKANA
Day 1: Guidance, greetings, self-introduction
Day 2: Numbers, prices
Day 3: Asking places.
Day 4: Food
Day 5: Shopping
Day 6: Transportation and time
Day 7: Emergency
Day 8: Summary

【HIGO Japanese course I (Part 2)】
Aim: To get accustomed to campus life in Japan.
To be able to understand the meaning of frequently used Chinese characters, KANJI.
Day 1: Guidance, Campus of the University
Day 2: Stuffs and students of the University
Day 3: Registration and other administrative procedures
Day 4: Using personal computers
Day 5: Laboratory
Day 6: Mail service, internet
Day 7: Weekends
Day 8: Summary

【HIGO Japanese course II】
Aim: To learn basic expressions related to medicine.
Day 1: Guidance, body parts
Day 2: Giseases, injury
Day 3: Medicine, hospital
Day 4: Health insurance, medical examination
Day 5: Medical terms (1)
Day 6: Medical terms (2)
Day 7: Medical examination
Day 8: Summary

HIGO Program (Basic Course)
HIGO Practical Training I
(Compulsory: 2 credits)
Subject Code

Course Director: Minetaro Ogawa (Cell Differentiation TEL:373-6591) ogawamin@kumamoto-u.ac.jp
Instructors: Staff of the laboratories in charge

【Objectives】

Various experimental methods and techniques are applied in the field of health life science, which is an interdisciplinary research based on molecular biology, cell biology, biochemistry, histology, pathology, immunology, developmental biology, epidemiology, internal medicine, pharmacology, organic chemistry, physical pharmaceutics and biopharmaceutics. For researchers in the field, it is required to learn such experimental methods and techniques practically. Even for researcher outside the filed, it is important to understand a background of the experimental methods and techniques, since it gives us a multilateral viewpoint and would support to resolve various problems in specific research fields. Principles and practical procedures for several important experimental methods and techniques will be trained in HIGO Practical Training I.

【Content Description】

Following methods and techniques are trained:

Session: Practical topics (Laboratory in charge)

・Ultrastructural analysis: Scanning electron microscopy (Brain Morphogenesis)
・Cell motility analysis: Time-lapse imaging of living culture cells (Molecular Pharmacology)
・Stem cell culture 1: Principle of ES cell culture (Stem Cell Biology)
・Stem cell culture 2: Induction of immunocytes from ES cells (Immunogenetics)
・Tissue culture: Handling of developing neural tissues and cells (Developmental Neurobiology)
・Histological analysis: Histological stain and its interpretation (Pathology and Experimental Medicine)
・Immunocytochemistry: Indirect fluorescence antibody method (Immunology)
・Flow cytometric analysis: Fractionation and isolation of cells by FACS (Cell Differentiation)
・Quantitative PCR: Isolation of RNA/DNA and quantification by PCR (Medical Cell Biology)
・Evoked potential: Measurement of auditory brainstem potential (Sensory and Cognitive Physiology)
・Behavioral analysis in mice: Operant conditioning test, Open field test (Molecular Physiology)
・Protein purification: Bacterial culture, induction of protein expression and purification (Molecular Cell Biology)
・DNA transfection and protein detection: Lipofection, Western blot (Kidney Development)
・Introduction of epidemiology: Epidemiological and statistical analysis (Public Health)
・Introduction of metabolic analysis: Method of analysing metabolic disease (Neurology)
・Metabolic analysis 1: Blood pressure and cardiac rate (Pharmacology and Molecular Therapeutics)
・Metabolic analysis 2: Blood insulin (Medical Biochemistry)
・Metabolic analysis 3: Whole body metabolism, CT (Molecular Genetics)
・Metabolic analysis 4: Cardiovascular disease model (Cardiovascular Medicine)
・Histological analysis: Histopathology, Immunohistochemistry (Cell Pathology)
・Oxidative stress analysis: Tandem mass spectrometry (Microbiology)
・Preparation and evaluation of cyclodextrin supramolecules: Preparation and evaluation of cyclodextrin polypseudorotaxanes (Physical Pharmaceutics)
・Monitoring of intracellular signaling: Cell preparation, stimulation, observation, data processing (Pharmaceutical Biochemistry)
・Bioassay for drug development: C. elegans as a bioassay model (Molecular Medicine)
・Measurement of oxidative stress: Measurement of oxidative stress in cell systems (Clinical Pharmaceutics)
・CNS disease model: Preparation and analysis of disease model in mice (Chemico-Pharmacological Sciences)
・Analysis of biomolecular interactions by use of SPR biosensor: Kinetics and thermodynamics of antigen-antibody interactions (Analytical and Biophysical Chemistry)
・Therapeutic drug monitoring: Population pharmacokinetics and optimal dosage regimen for neonates (Clinical Chemistry and Informatics)
・Protein X-ray crystallography: Protein crystallization and X-ray data collection (Structural Biology)

【Class Style】
Each training course will be held in a laboratory in charge. First, the principle of a method or a technique will be lectured, then practical handling will be trained. Results, which will be discussed, must be summarized in a report.

【Textbook】 Textbooks are not specified, and handouts for each practice will be distributed

【Recommended Readings】 Not specified.

【Office Hour】 If you have any questions on topics or schedule of the classes, please contact the instructors listed above.

【Evaluation for Grades and Credits】
Students should attend at least 8 sessions. Grading will be based on active class participation and discussion and the reports. In the reports, results and comments should be summarized in one A4 sheet.

【Lecture Schedule】 Schedule of each session will be forwarded to you separately.

HIGO Program (Basic Course)

HIGO Governmental Internship I
(Compulsory: 1 credit)
Subject Code

Course Director: Tetsumi Irie (Clinical Chemistry and Informatics TEL: 371-4552) tirie@gpo.kumamoto-u.ac.jp
Assistant Course Director: Takahiko Kato (Public Health TEL: 373- 5112) katoht@gpo.kumamoto-u.ac.jp
Instructors: The HIGO program faculty

【Objectives】

The field of health and life sciences needs leaders equipped with a unique expertise and global perspective that will enable them to find the root of the problems facing local and global (glocal) communities and lead industry-academia-government initiatives that will bridge Japan and the surrounding region with the rest of the world. Students seeking to fill the shoes of this kind of leader must have a solid academic footing in the medical, pharmaceutical and life sciences as well as an extensive knowledge of everything from public health and welfare to environmental resources, sustainability, biodiversity, environmental ethics, and more all gained through real-life work experience. In this course, students will participate in an internship related to these fields where they will put the knowledge gained via the governmental and business seminars into practice to acquire the practical skills they need. The course is designed to motivate students to learn more and explore different career paths as they discover their professional calling.

【Content Description】

Students will experience working on administrative operations related to health care policies, pharmaceutical regulations, health risk management, etc. under the auspices of the Kumamoto prefectural government, Kumamoto municipal government, national and other government agencies.

Training will be conducted in English and interpreted into English if given in Japanese.

【Keywords】

Health care, welfare, environment, public health, environmental resources, sustainability, biodiversity, environmental ethics

【Class Style】

Students will participate in a five-day (30-hour) internship at a governmental organization such as the Kumamoto prefectural government, Kumamoto municipal government, national or other government agency. Students will keep a record of what they have learned (including preparation and review work) as well as the results of their studies in the e-portfolio format. The internship will be followed by presentations and discussions by students so they can gain a better understanding of what they have studied.

【Textbooks】

None specified, but handouts outlining the internship program will be distributed.

【Recommended Readings】

None specified

【Evaluation for Grades and Credits】

The students' level of practical skills gained through their internship will be evaluated on the basis of active participation in the internship, presentations and discussions, as well as their e-portfolio.

【Office Hours】 Students who wish to speak with an instructor during or after their internship may contact any of the faculty members listed above either via phone or e-mail.

【Before Classes】 Students are encouraged to seek out information on the government agencies they will be interning with via the Internet, etc. prior to beginning this course.

【After Classes】 Students are encouraged to carefully review their notes and handouts from their internship. Students may speak with faculty members during their office hours. Students should also review related e-learning programs when available.

【Lecture Schedule】 Students will participate in an internship during their first two years. Classes do not meet at regularly scheduled dates and times. The schedule will be posted on the HIGO Program web site once it is finalized. Students are urged to check the schedule frequently.

HIGO Program (Basic Course)

HIGO Business Internship I
(Compulsory: 1 credit)
Subject Code

Course Director: Hidetoshi Arima (Physical Pharmaceutics TEL: 371-4160) arimah@gpo.kumamoto-u.ac.jp
Assistant Course Director: Yuichi Oike (Molecular Genetics TEL: 373-5140) oike@gpo.kumamoto-u.ac.jp
Instructors: The HIGO program faculty

【Objectives】

The HIGO Program aims to foster glocal pioneers in the health and life sciences who understand local needs as well as the needs of people throughout Asia and are willing to work on solving local problems through glocal partnerships. In this course, students will put the knowledge gained through the governmental and corporate seminars into practice while interning at a local company or a leading pharmaceutical company in Japan. The internship will give students access to first-hand information related to corporate philosophy, compliance, management, planning, operations, accounting, corporate social responsibility, community outreach, as well as local community needs. Students will learn to look at the world through a glocal lens as they develop the practical skills that will enable them to adapt to a changing environment.

【Content Description】

Students will participate in a 30-hour (five-day) internship at one of the following selected companies.
Training will be conducted in English and interpreted into English if given in Japanese.

? Companies and organizations located in Kumamoto Prefecture
Kumamoto Nichinichi Shimbun
? Preclinical services company in Japan
Shin Nippon Biomedical Laboratories, Ltd.

Companies and organizations that accept interns are subject to change. Additions or changes of host organizations will be posted on the HIGO program web site.

【Keywords】

Internship, company, health, health care, medical treatment, therapy, drug development, drug improvement, corporate social responsibility, internationalization, local economy, public relations, corporate compliance

【Class Style】 Students will intern at a selected company. The internship will be followed by student presentations and discussions in order to give the participants a better understanding of what they have learned.

【Textbooks】 None specified, but handouts outlining the internship program will be distributed.

【Recommended Readings】 None specified

【Evaluation for Grades and Credits】 Students are required to submit a report via e-portfolio or as a hard copy. Students' level of understanding in the areas specified in the course objectives will be evaluated on the basis of questions and answers during the internship, active participation in presentations and discussions, as well as their reports submitted after the internship.

【Office Hours】 Students who wish to speak with an instructor during or after their internship may contact any of the faculty members listed above either via phone or e-mail.

【Before Classes】 Students are encouraged to seek out information on the companies they will be interning with via the Internet, etc. prior to beginning their internship.

【After Classes】 Students are encouraged to carefully review their notes and handouts from their internship. Students who wish to speak with faculty members may see them during their office hours. Students should also review related e-learning programs when available.

【Lecture Schedule】 Students will participate in an internship during their first two years. Classes do not meet at regularly scheduled dates and times. The schedule will be posted on the HIGO Program web site once it is finalized. Students are urged to check the schedule frequently.

HIGO Program (Basic Course)

HIGO Overseas Internship I
(Compulsory: 1 credit)
Subject Code

Course Director: Hirofumi Kai (Molecular Medicine TEL: 371-4405) hirokai@gpo.kumamoto-u.ac.jp
Instructors: The HIGO program faculty

【Objectives】

Those aiming to pioneer the frontiers of "health life science" will need an extensive array of knowledge at their fingertips. It's a wide field spanning the pharmaceutical, medical, and life sciences and anyone trying to blaze a path to a healthy society will need to work with partners across the region and around the world. That's why it's so vital that students learn to view the Kyushu region from a global perspective so they can see the needs and problems of the local and global (glocal) community. This course will provide students with an opportunity to participate in an international internship or training program at either one of Kumamoto University's overseas offices, an international administrative organization, company, university or other organization located abroad. The course aims to give students the tools to identify and solve problems on a glocal level as well as the communication and negotiation skills that will give them a leg up in the international arena.

【Content Description】

Students will participate in a 30-hour (five-day) internship at one of the following organizations.

? Overseas offices of Kumamoto University
Shanghai Office, Dalian Office, Korea KAIST Office, or Indonesia ITS Office

? Educational institutions, companies and research organizations affiliated with Kumamoto University
University of Georgia, St. John's University, University of Rochester, University of Texas (USA); Trinity College Dublin (Ireland); University of London (UK); Academia Sinica (Taiwan); Monash University (Australia); Ligand Pharmaceuticals, Inc. (USA); etc.

? International administrative organizations
United Nations, World Health Organization, etc.

Training will be conducted in English and interpreted into English if given in Japanese.

【Keywords】

Internship, government, company, health care, medical treatment, therapy, drug development, drug improvement, environment, community service, internationalization, local economy, public relations, global view, identifying and solving problems, communication skills, negotiation skills

【Class Style】 Students will intern at one of the organizations listed above. The internship will be followed by student presentations and discussions in order to give the participants a better understanding of what they have learned.

【Textbooks】 None specified, but handouts outlining the internship program will be distributed.

【Recommended Readings】 None specified

【Evaluation for Grades and Credits】 Students are required to submit a report via e-portfolio or as a hard copy. Students' level of understanding in the areas specified in the course objectives will be evaluated on the basis of questions and answers during the internship, active participation in presentations and discussions, as well as their reports submitted after the internship.

【Office Hours】 Students who wish to speak with an instructor during or after their internship may contact any of the faculty members listed above either via phone or e-mail.

【Before Classes】 Students are encouraged to seek out information on the organizations they will be interning with via the Internet, etc. prior to beginning their internship.

【After Classes】 Students are encouraged to carefully review their notes and handouts from their internship. Students who wish to speak with faculty members may see them during their office hours. Students should also review related e-learning programs when available.

【Lecture Schedule】 Students will participate in an internship during their first two years. Classes do not meet at regularly scheduled dates and times. The schedule will be posted on the HIGO Program web site once it is finalized. Students are urged to check the schedule frequently.