

**Nagasaki University Priority Graduate Programs (NUPGP)
for Foreign Students in Biomedical Sciences
(Master Course)**

Syllabus

April, 2016 ~ March, 2017

Nagasaki University Graduate School of Biomedical Sciences

**Nagasaki University Priority Graduate Programs (NUPGP)
for Foreign Students in Biomedical Sciences (Master Course)**

contents

Subject	Credit	page
Lecture		
Molecular Biology of Neurodegenerative Diseases II	1	1-2
Analytical Chemistry in Health and Environmental Sciences II	1	3-4
Bioorganic Chemistry for Environmental Science II	1	5-6
Pharmacology and Drug Discovery II	1	7-8
Natural Product Chemistry for Infectious Diseases II	1	9-10
Molecular Biology of Infectious Agents I	1	11
Inorganic Chemistry in Health and Environmental Sciences I	1	12-13
Synthesis of Drugs for Infectious Diseases I	1	14-15
Cell Biology for Health Science I	1	16
Chemistry of Biofunctional Molecules for Infectious Diseases I	1	17
Pharmaceutical Organic Chemistry for Infectious Diseases I	1	18
Resources of Marine Natural Medicines for Infectious Diseases	0.5	19-20
Resources of Natural Medicines for Infectious Diseases	0.5	21
Exercise and Experiment		
Exercise Biomedical Sciences [Cell Regulation]	4	22
Experiment Biomedical Sciences [Cell Regulation]	16	23
Exercise Biomedical Sciences [Pharmacology and Therapeutic Innovation]	4	24-25
Experiment Biomedical Sciences [Pharmacology and Therapeutic Innovation]	16	26-27
Exercise Biomedical Sciences [Pharmaceutical Chemistry]	4	28
Experiment Biomedical Sciences [Pharmaceutical Chemistry]	16	29
Exercise Biomedical Sciences [Pharmaceutical Organic Chemistry]	4	30
Experiment Biomedical Sciences [Pharmaceutical Organic Chemistry]	16	31-32
Exercise Biomedical Sciences [Chemistry for Pharmaceuticals]	4	33-34
Experiment Biomedical Sciences [Chemistry for Pharmaceuticals]	16	35-36
Exercise Biomedical Sciences [Genome-based Drug Discovery]	4	37
Experiment Biomedical Sciences [Genome-based Drug Discovery]	16	38
Exercise Biomedical Sciences [Molecular Pharmacology of infectious Agents]	4	39
Experiment Biomedical Sciences [Molecular Pharmacology of infectious Agents]	16	40
Exercise Biomedical Sciences [Natural Product Chemistry]	4	41-42
Experiment Biomedical Sciences [Natural Product Chemistry]	16	43-44
Exercise Biomedical Sciences [Medicinal Plant Biochemistry]	4	45-46
Experiment Biomedical Sciences [Medicinal Plant Biochemistry]	16	47
Exercise Biomedical Sciences [Structure Analysis for Chemicals]	4	48-49
Experiment Biomedical Sciences [Structure Analysis for Chemicals]	16	50
Exercise Biomedical Sciences [Chemistry of Biofunctional Molecules]	4	51
Experiment Biomedical Sciences [Chemistry of Biofunctional Molecules]	16	52
Exercise Biomedical Sciences [Hygienic Chemistry]	4	53-54
Experiment Biomedical Sciences [Hygienic Chemistry]	16	55
Exercise Biomedical Sciences [Analytical Chemistry]	4	56
Experiment Biomedical Sciences [Analytical Chemistry]	16	57
Exercise Biomedical Sciences [Pharmacotherapeutics]	4	58
Experiment Biomedical Sciences [Pharmacotherapeutics]	16	59-60
Exercise Biomedical Sciences [Pharmaceutical Informatics]	4	61-62
Experiment Biomedical Sciences [Pharmaceutical Informatics]	16	63-64
Exercise Biomedical Sciences [Pharmaceutics]	4	65-66
Experiment Biomedical Sciences [Pharmaceutics]	16	67-68

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	月 / Mon 2
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503150110	科目番号 / Subject code	55031501
科目ナンバリングコード / Numbering Code	BMMP51632783		
授業科目名 / Subject	Molecular Biology of Neurodegenerative I / Molecular Biology of Neurodegenerative Diseases I		
編集担当教員 / Professor in charge of putting together the course syllabus	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirovani Keiro, 浅井 将 / Asai Masashi		
授業担当教員名 (科目責任者) / Professor in charge of the subject	岩田 修永 / Iwata Nobuhisa		
授業担当教員名 (オムニバス科目等) / Professor(s)	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirovani Keiro, 浅井 将 / Asai Masashi		
科目分類 / Class type	特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Mastercourse		
担当教員Eメールアドレス / E-mail address	iwata-n@nagasaki-u.ac.jp, keiroshiro@nagasaki-u.ac.jp, asai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Gene-based Drug Discovery		
担当教員TEL/Tel	095-819-2435 (Iwata), 095-819-2436 (Shirovani), 095-819-2437 (Asai)		
担当教員オフィスアワー / Office hours	Mon-Fri. 13:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	Better understanding of molecular mechanisms of dementia and neurodegenerative diseases in addition to their clinical symptom and pathological features is requisite for development of more effective and safer medication. This class focuses on dementia and neurodegenerative diseases, such as Alzheimer's disease, and provides you with detailed molecular mechanisms and recent topics of the disease researches. A common keyword to the diseases is "proteases", which play critical roles in the disease onsets and developments. At the end of this class, you will be aware that down-regulation or up-regulation of the proteases responsible for metabolism of pathogenic peptides would be promising avenues for medication. This class also provides much knowledge and information how we can utilize biotechnological techniques for development of new drugs.		
授業到達目標 / Goal	To understand and to be able to summarize molecular mechanisms of the diseases and potential of biotechnology against the diseases.		
授業方法 (学習指導法) / Method	Lecture using PC-based slide-show presentation and printed materials.		
授業内容 / Class outline / Con	Basics of enzymology, such as classification of enzymes, pathophysiological functions of some enzymes, in addition to the clinical symptoms, the pathological features and molecular mechanisms of the diseases, will be reviewed. The lecture also includes essences to understand future drug developments and early diagnostic method based on the genomic drug discovery concept, and proteomic analysis. 1st: The clinical symptoms and the pathological features of neurodegenerative diseases [Iwata] 2nd: The causal genes responsible for Alzheimer's disease pathogenesis and their functions [Shirovani] 3rd: Molecular mechanism of the pathogenesis of Alzheimer's disease (1) [Iwata] 4th: Molecular mechanism of the pathogenesis of Alzheimer's disease (2) [Iwata] 5th: In vivo analysis of pathogenic mechanism of Alzheimer's disease using animal models (1) [Iwata] 6th: In vivo analysis of pathogenic mechanism of Alzheimer's disease using animal models (2) [Iwata] 7th: Current status of biomarkers and disease-modifying drugs for Alzheimer's disease [Shirovani] 8th: Recent advances of Alzheimer's disease research [Asai]		
キーワード / Key word	dementia, neurodegenerative diseases, Alzheimer's disease, neuropathologies, animal models, proteases, drug discovery, clinical biomarker		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	A handout of selected PowerPoint slides used in each lecture.		
成績評価の方法・基準等 / Evaluation	Active participation 40%, brief examination after the class 30% and report 30%		
受講要件 (履修条件) / Requirements	To whom take this class must have fundamental knowledge on neurobiology and molecular biology.		

アクセシビリティ/Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp
備考 (URL) /Remarks(URL)	http://www.alzforum.org/
学生へのメッセージ/Message for students	In most cases this research field is different from yours, but I hope you learn how to go ahead with disease researches.
授業計画詳細 / Course Schedule	
回(日時) / Time(date and time)	授業内容 / Contents
1st, 4/11	The clinical symptoms and the pathological features of neurodegenerative diseases [Iwata]
2nd, 4/18	The causal genes responsible for Alzheimer 's disease pathogenesis and their functions [Iwata]
3rd, 4/25	Molecular mechanism of the pathogenesis of Alzheimer 's disease (1) [Asai]
4th, 5/2	Molecular mechanism of the pathogenesis of Alzheimer 's disease (2) [Asai]
5th, 5/9	In vivo analysis of pathogenic mechanism of Alzheimer 's disease using animal models (1) [Iwata]
6th, 5/16	In vivo analysis of pathogenic mechanism of Alzheimer 's disease using animal models (2) [Iwata]
7th, 5/23	Current status of biomarkers and disease-modifying drugs for Alzheimer 's disease
8th, 6/3	Recent advances of Alzheimer 's disease research

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	月 / Mon 2
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503100013	科目番号 / Subject code	55031000
科目ナンバリングコード / Numbering Code	BMMP53332782		
授業科目名 / Subject	Analytical Chemistry I / Analytical Chemistry in Health and Environmental Sciences I		
編集担当教員 / Professor in charge of putting together the course syllabus	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
授業担当教員名 (科目責任者) / Professor in charge of the subject	黒田 直敬 / Naotaka Kuroda		
授業担当教員名 (オムニバス科目等) / Professor(s)	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館5階リフレッシュルーム / Pharmaceutical School 5th floor refresh room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	n-kuro@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Analytical Chemistry		
担当教員TEL / Tel	095-819-2894		
担当教員オフィスアワー / Office hours	Mon. ~ Fri. 13:30-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	Understanding of (1) the concepts and principles underlying the highly sensitive detection techniques using luminescence, and (2) their typical application to biomedical and environmental analysis.		
授業到達目標 / Goal	1) Learn and understand the theories on which the principles of various analytical techniques are based, and 2) become familiar with the important details of specific methods for biomedical		
授業方法 (学習指導法) / Method	For the lecture, audio-visual equipments will be employed for a better understanding.		
授業内容 / Class outline/Con	Study of the fundamental principles of highly sensitive detection techniques for biomedical and environmental analysis, and their applications.		
キーワード / Key word	biomedical analysis, luminescence, fluorescence, chemiluminescence		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Reference Book: Modern Derivatization Methods for Separation Sciences, Edited by T. Toyo'oka, 1999, John Wiley & Sons Ltd.; Chemiluminescence in Analytical Chemistry, Edited by A.M. Garcia-Campana, W.R.G. Baeyens, 2001, Marcel Dekker Inc.		
成績評価の方法・基準等 / Evaluation	Your performance will be evaluated by active participation (30%) and reports (70%). Students whose unexcused absences exceed 30% of the class will receive an automatic D for the course.		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Introduction to detection techniques based on luminescence for biomedical and environmental analysis (Kuroda)		
2nd	Basics of luminescence (Kuroda)		
3rd	Fluorescence in analytical chemistry (Kishikawa)		
4th	Chemiluminescence and bioluminescence in analytical chemistry (Kuroda)		
5th	Latest technologies of luminescence in analytical chemistry (Kishikawa)		
6th	Application of luminescence to biomedical and environmental analysis (1) (Kishikawa)		

7th	Application of luminescence to biomedical and environmental analysis (2) (Ohyama)
8th	General overview and preparing of a report (Kuroda)

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	火 / Tue 3
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503120008	科目番号 / Subject code	55031200
科目ナンバリングコード / Numbering Code	BMMP51332781		
授業科目名 / Subject	Bioorganic Chemistry I / Bioorganic Chemistry for Environmental Science I		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto, 上田 篤志 / Ueda Atsushi		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 正一 / Tanaka Masakazu		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto, 上田 篤志 / Ueda Atsushi		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館3階セミナー室 / Pharmaceutical School 3rd floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	matanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Chemistry		
担当教員TEL / Tel	095-819-2423		
担当教員オフィスアワー / Office hours	Tuesday 16:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To provide the students with fundamental knowledge of 3D structures, bioorganic molecules, including asymmetric reactions, and polymer chemistries.		
授業到達目標 / Goal	To understand how the three-dimensional structures of organic molecules can be synthesized, and also how the polymer chemistry can be applied to medicine.		
授業方法 (学習指導法) / Method	Lecture using PowerPoint slides and printed documents.		
授業内容 / Class outline / Con	This course will first cover the three-dimensional structures of small molecules as bioorganic molecules and deal with the activities of stereoisomers. Then, the course will cover the basic of stereoselective synthesis of enantiomers and diastereomers. Furthermore, the course will cover the polymer chemistry and their application to medicine, especially in gel and regenerative medicine.		
キーワード / Key word	3D structure, stereochemistry, catalysis, polymer chemistry		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Printed documents		
成績評価の方法・基準等 / Evaluation	Contribution in group discussion (50%), and completion of assignments (50%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	The three-dimensional structures of molecules and polymer chemistry are important for drug design.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Activities of stereoisomers [M. Tanaka]		
2nd	Basic of stereochemistry [M. Tanaka]		
3rd	Enantioselective reaction [M. Tanaka]		
4th	Diastereoselective reaction [M. Tanaka]		
5th	Example of asymmetric reactions [M. Tanaka]		
6th	Polymer chemistry [Oba]		
7th	Application of polymer chemistry -Gel- [Oba]		

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	水 / Wed 2
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503173109	科目番号 / Subject code	55031731
科目ナンバリングコード / Numbering Code	BMMP51232784		
授業科目名 / Subject	Pharmacology and Drug Discovery I / Pharmacology and Drug Discovery I		
編集担当教員 / Professor in charge of putting together the course syllabus	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	植田 弘師 / Ueda Hiroshi		
授業担当教員名 (オムニバス科目等) / Professor(s)	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
科目分類 / Class type	特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館4階セミナー室 / Pharmaceutical School 4th floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ueda@nagasaki-u.ac.jp ttamotsu@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmacology and Therapeutic Innovation		
担当教員TEL / Tel	095-819-2421, 2473		
担当教員オフィスアワー / Office hours	Accept any question by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	To teach the mechanism of acute and chronic pain / To teach the new approaches of drug discovery against some topics		
授業到達目標 / Goal	To understand and to be able to summarize the mechanisms underlying pain and the therapeutic innovation in drug discovery		
授業方法 (学習指導法) / Method	Lecture using power-point slides and printed documents		
授業内容 / Class outline / Con	<p>Pain and opioid actions are an important topic in terms of social issues and basic science. The study of mechanisms underlying development of chronic pain, such as cancer pain, and opioid tolerance following chronic treatments leads to a better understanding of neuronal plasticity, which is one of most important topics in neuroscience as well as memory and learning.</p> <p>The scope of therapeutic innovation reaches beyond the focus of pharmaceuticals, and its research and development, to include innovations in drugs, devices, and diagnostics, as well as global regulatory issues.</p>		
キーワード / Key word	Chronic pain, Stroke, Infectious disease, Cancer, Medicinal chemistry		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Active commitment (50%) to the lecture and examination (50%) on each topic		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Mechanisms of acute and chronic pain (Ueda)		
2nd	Epigenomic regulation of chronic pain-related genes (Ueda)		

3rd	Lipid mediators as key molecules for chronic pain (Ueda)
4th	Recent topics on neurogenesis (Ueda)
5th	New approaches for the drug discovery against stroke (Tsukahara)
6th	New approaches for the drug discovery against infectious diseases (Tsukahara)
7th	New approaches for the drug discovery against cancer (Tsukahara)
8th	Introduction of medicinal chemistry (Tsukahara)

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	金 / Fri 2
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503160012	科目番号 / Subject code	55031600
科目ナンバリングコード / Numbering Code	BMMP52132785		
授業科目名 / Subject	Natural Product Chemistry I / Natural Product Chemistry for Infectious Diseases I		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 隆 / Tanaka Takashi, 松尾 洋介 / Matsuo Yosuke, 齋藤 義紀 / Saito Yoshinori		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 隆 / Tanaka Takashi		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 隆 / Tanaka Takashi, 松尾 洋介 / Matsuo Yosuke, 齋藤 義紀 / Saito Yoshinori		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館3階セミナー室 / Pharmaceutical School 3rd floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	Takashi Tanaka / t-tanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Natural Product Chemistry		
担当教員TEL / Tel	2432		
担当教員オフィスアワー / Office hours	Any time (Please make appointment by E-mail)		
授業の概要及び位置づけ / Course Outline and Objectives	The aim of the lecture is to understand classification of natural products by their biosynthesis pathway. In addition, methods used for separation, structure elucidation, and application to functional materials will be introduced.		
授業到達目標 / Goal	1) Acquire knowledge of the classification the natural products by their molecular structures and biosynthesis. 2) Acquire knowledge of the functions of important natural products and their application.		
授業方法 (学習指導法) / Method	Lecture (with Power Point presentation)		
授業内容 / Class outline / Con	Natural organic compounds produced by plants and microorganisms are important source of medicines. Many modern medicines are originated from seed compounds isolated from living things, and many crude drugs, such as herbs and traditional medicines, are still widely used in contemporary medicine. This class aimed to understand the chemistry of natural products and techniques used for separation and identification of compounds..		
キーワード / Key word	Biosynthesis, structure determination, chromatography, NMR		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	No text book, Reference: Medicinal Natural Products (Dewick)		
成績評価の方法・基準等 / Evaluation	report(20%), exercise(80%)		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks(URL)	http://www.ph.nagasaki-u.ac.jp/lab/natpro/index-j.html		
学生へのメッセージ / Message for students	None		
授業計画詳細 / Course Schedule			
回(日時) / Time(date and time)	授業内容 / Contents		
1	Biosynthetic pathway for Natural compounds (1)		
2	Biosynthetic pathway for Natural compounds (2)		
3	Separation of Natural Products and structure determination by spectroscopic and chemical method (1)		

4	Separation of Natural Products and structure determination by spectroscopic and chemical method (2)
5	Plant polyphenols and application to functional foods
6	Biomimetic reactions of plant polyphenols
7	Chemistry of color
8	Physicochemical properties of tannins and chemical ecology

学期 / Semester	2016年度 / Academic Year 前期 / First Semester	曜日・校時 / Day・Period	金 / Fri 2
開講期間 / Class period	2016/04/01 ~ 2016/09/27		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503151011	科目番号 / Subject code	55031510
科目ナンバリングコード / Numbering Code	BMMP55142783		
授業科目名 / Subject	Molecular Biology of Infectious Agents / Molecular Biology of Infectious Agents		
編集担当教員 / Professor in charge of putting together the course syllabus	北里 海雄 / Kitazato Kaio		
授業担当教員名 (科目責任者) / Professor in charge of the subject	北里 海雄 / Kitazato Kaio		
授業担当教員名 (オムニバス科目等) / Professor(s)	北里 海雄 / Kitazato Kaio		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館2階セミナー室 / Pharmaceutical School 2nd floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	kkholi@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Lab of Molecular Pharmacology of infectious agents		
担当教員TEL / Tel	095-819-2457		
担当教員オフィスアワー / Office hours	Email anytime is OK, meeting time 5:00-6:00pm		
授業の概要及び位置づけ / Course Outline and Objectives	Aim: To teach the topics of emerging infectious diseases		
授業到達目標 / Goal	Goal: To understand and to be able to summarize the emerging infectious diseases and current antiviral therapy for viral diseases.		
授業方法 (学習指導法) / Method	Method: Lecture and seminar using PowerPoint slides or printed documents		
授業内容 / Class outline / Con	Class outline/ Emerging infectious diseases are an important topics in terms of social issues and science. The study of replication of infectious agents and their interaction with host factors leads to a better understanding of infectious diseases and to help to develop new drugs of anti-infectious agents.		
キーワード / Key word	virus diseases, antivirals, vaccine development		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Articles and reviews for virus diseases from top journals		
成績評価の方法・基準等 / Evaluation			
受講要件 (履修条件) / Requirements	Method of achievement evaluation/ attendance (50%) and report (50%)		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1	1. Introduction to virus diseases		
2	Current topics in emerging virus diseases I		
3	Current topics in emerging virus diseases II		
4	Current topics in emerging virus diseases III		
5	Antiviral strategies.		
6	Antiviral drug development		
7	Vaccine development		
8	Perspective in viral therapy		

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	火 / Tue 3
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503141007	科目番号 / Subject code	55031410
科目ナンバリングコード / Numbering Code	BMMP53242787		
授業科目名 / Subject	Inorganic Chemistry / Inorganic Chemistry in Health and Environmental Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 麓 伸太郎 / Fumoto Shintaro, 大山 要 / Ohyama Kaname, 西田 孝洋 / Nishida Koyo		
授業担当教員名 (科目責任者) / Professor in charge of the subject	中山 守雄 / Nakayama Morio		
授業担当教員名 (オムニバス科目等) / Professor(s)	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 麓 伸太郎 / Fumoto Shintaro, 大山 要 / Ohyama Kaname, 西田 孝洋 / Nishida Koyo		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館5階リフレッシュルーム / Pharmaceutical School 5th floor refresh room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	morio@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Hygienic Chemistry		
担当教員TEL / Tel	095-819-2441		
担当教員オフィスアワー / Office hours	Monday - Friday 0:20 - 0:50 p.m. or by appointment		
授業の概要及び位置づけ / Course Outline and Objectives	The aims of this subject are a) to be aware of what metal and metalloid elements are important in biology and medicine, and b) to give you state-of-the-art knowledge of the biological inorganic chemistry and nuclear medicine.		
授業到達目標 / Goal	The goals of this subject are a) a broad understanding of metal and metalloid elements in biological systems and medicine, b) to understand what essential trace elements are and explain the biological functions of essential trace elements with showing an example, and c) to understand what radiopharmaceuticals are and explain one of their applications in medicine.		
授業方法 (学習指導法) / Method	PowerPoint slides, Video, Printed matters (Scientific magazines, Newspapers, etc)		
授業内容 / Class outline / Con	This is an advanced class on biological inorganic chemistry with emphasis to biologically important and medically useful metal and metalloid elements. Issues of particular interest are biological functions of essential trace elements, such as iron, zinc, copper, selenium, etc., and the concept of metal-containing radiopharmaceuticals for diagnosis. This lecture is not intended to describe or explain everything you will learn in the biological inorganic chemistry; rather, it will indicate important topics to study and will give you an opportunity to think about these topics.		
キーワード / Key word	Metal, Metalloid, Essential element, Radiopharmaceutical, Nuclear Medicine, Diagnosis,		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Textbook, Teaching Material, and Reference Book / Textbook and reference materials are not specified.		
成績評価の方法・基準等 / Evaluation	Grading will be based on midterm and/or final exam (80%) and report (20%). (NOTICE : On-time regular attendance is required throughout the class.)		
受講要件 (履修条件) / Requirements	Nothing		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Basically, the instructors will give handouts of selected PowerPoint slides to be used in each lecture out to the attendees.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Overview: Metal and Metalloid Elements in Biology, Medicine and Environment (Nakayama)		
2nd	Radiopharmaceuticals in Nuclear Medicine (I) (Nakayama)		

3rd	Radiopharmaceuticals in Nuclear Medicine (II) (Fuchigami)
4th	Proteomic Analysis in Animal Model and Human I (Ohyama)
5th	Proteomic Analysis in Animal Model and Human I (Ohyama)
6th	Drug Delivery Systems (Nishida and Fumoto)
7th	Drug Delivery Systems (Nishida and Fumoto)
8th	Review

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	水 / Wed 3
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503191003	科目番号 / Subject code	55031910
科目ナンバリングコード / Numbering Code	BMMP51542781		
授業科目名 / Subject	Synthesis of Drugs / Synthesis of Drugs for Infectious Diseases		
編集担当教員 / Professor in charge of putting together the course syllabus	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
授業担当教員名 (科目責任者) / Professor in charge of the subject	尾野村 治 / Onomura Osamu		
授業担当教員名 (オムニバス科目等) / Professor(s)	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館3階セミナー室 / Pharmaceutical School 3rd floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	onomura@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Synthetic Chemistry for Pharmaceuticals		
担当教員TEL / Tel	095-819-2429		
担当教員オフィスアワー / Office hours	Mon. - Fri. 10:30 - 18:00		
授業の概要及び位置づけ / Course Outline and Objectives	You learn systematically selective reactions which synthesize complicated organic molecules and are necessary for development of new drugs for infectious diseases. Professional education		
授業到達目標 / Goal	(1) You can explain representative asymmetric reactions. (2) You can get practical knowledge necessary for invention of new drugs.		
授業方法 (学習指導法) / Method	Lectures concerning about development of new synthetic methods, which are extracted from new literatures and patents, are given by utilizing prints and slide-projector. Exercises are timely carried out.		
授業内容 / Class outline/Con	You can learn highly selective reactions for development of new drugs, for examples, selective organic synthesis utilizing the characteristics of nitrogen, synthesis of optically active cyclic amino compounds, and so on.		
キーワード / Key word	None		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Documents prepared from recent literatures are distributed.		
成績評価の方法・基準等 / Evaluation	Exercise (30%), Test (30%), Report (40%)		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	In advance, master basic knowledge of organic chemistry.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1	Selective organic synthesis utilizing the characteristics of nitrogen I (Onomura)		
2	Selective organic synthesis utilizing the characteristics of nitrogen II (Onomura)		
3	Selective organic synthesis utilizing the characteristics of nitrogen III (Onomura)		
4	Synthesis of optically active cyclic amino compounds (Onomura)		
5	Selective organic synthesis utilizing the characteristics of silicon (Kuriyama)		

6	Selective organic synthesis utilizing the characteristics of borone (Kuriyama)
7	Selective organic synthesis utilizing the characteristics of fluorine (Kuriyama)
8	Synthesis of sugars (Kuriyama)

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	木 / Thu 2
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503131001	科目番号 / Subject code	55031310
科目ナンバリングコード / Numbering Code	BMMP51142783		
授業科目名 / Subject	Cell Biology for Health Science / Cell Biology for Health Science		
編集担当教員 / Professor in charge of putting together the course syllabus	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	武田 弘資 / Takeda Kohsuke		
授業担当教員名 (オムニバス科目等) / Professor(s)	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館4階セミナー室 / Pharmaceutical School 4th floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	takeda-k@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Cell Regulation		
担当教員TEL / Tel	095-819-2417		
担当教員オフィスアワー / Office hours	At any time by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the mechanisms and significance of intracellular signal transduction regulating various cellular functions.		
授業到達目標 / Goal	To understand the mechanisms of intracellular signal transduction and their dysregulation in various diseases.		
授業方法 (学習指導法) / Method	Lecture using PowerPoint slides and printed documents.		
授業内容 / Class outline/Con	Regarding the following respective topics, latest research achievements and perspectives, as well as basic findings, will be provided.		
キーワード / Key word	signal transduction, cell motility, stress response, cancer, inflammation, metabolism, mitochondria		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Reference book: Molecular Biology of the Cell 5th Edition		
成績評価の方法・基準等 / Evaluation	Attendance (40%), Report (60%)		
受講要件 (履修条件) / Requirements	Those who take this class must have fundamental knowledge on cell biology and molecular biology.		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st: Oct 6	Overview [Takeda]		
2nd: Oct 13	Mechanisms of signal transduction-1 [Takeda]		
3rd: Oct 20	Mechanisms of signal transduction-2 [Takeda]		
4th: Oct 27	Dysregulation of the ubiquitin system and diseases [Takeda]		
5th: Nov 10	Cell cycle regulation via protein phosphorylation and dephosphorylation (1) [Takeda]		
6th: Nov 17	Cell cycle regulation via protein phosphorylation and dephosphorylation (2) [Takeda]		
7th: Nov 24	Dysregulation of environmental stress response and diseases [Takeda]		
8th: Dec 1	Regulation of cell motility [Tanimura]		

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	木 / Thu 2
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503133006	科目番号 / Subject code	55031330
科目ナンバリングコード / Numbering Code	BMMP53142782		
授業科目名 / Subject	Chemistry of Biofunctional Molecules / Chemistry of Biofunctional Molecules for Infectious Diseases		
編集担当教員 / Professor in charge of putting together the course syllabus	甲斐 雅亮 / Kai Masaaki, 椛島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
授業担当教員名 (科目責任者) / Professor in charge of the subject	甲斐 雅亮 / Kai Masaaki		
授業担当教員名 (オムニバス科目等) / Professor(s)	甲斐 雅亮 / Kai Masaaki, 椛島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館4階セミナー室 / Pharmaceutical School 4th floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ms-kai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Chemistry of Biofunctional Molecules		
担当教員TEL / Tel	095-819-2438		
担当教員オフィスアワー / Office hours	12:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To study and discuss about scientific technology for functional analysis of proteins and nucleic acids.		
授業到達目標 / Goal	To understand about scientific technology for functional analysis of proteins and nucleic acids.		
授業方法 (学習指導法) / Method	Presentation and discussion using printed matters, computer slides and scientific		
授業内容 / Class outline / Con	Study on analytical technology and bio-function of biogenetic macromolecules. 1. Functional outline and techniques of biogenic macromolecules 2. Protein-protein interaction and its analysis (1) 3. Protein-protein interaction and its analysis (2) 4. Nucleic acid-nucleic acid interaction and its analysis (1) 5. Nucleic acid-nucleic acid interaction and its analysis (2) 6. Protein-nucleic acid interaction and its analysis (1) 7. Protein-nucleic acid interaction and its analysis (2) 8. Discussion of lecture		
キーワード / Key word	Proteins, Nucleic acids		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals, Printed matters		
成績評価の方法・基準等 / Evaluation	Report (50%), Aggressiveness (50%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 後 期 / Second Semester	曜日・校時 / Day・Period	金 / Fri 2
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	1.0
時間割コード / Time schedule code	20165503171002	科目番号 / Subject code	55031710
科目ナンバリングコード / Numbering Code	BMMP51442781		
授業科目名 / Subject	Pharmaceutical Organic Chemistry / Pharmaceutical Organic Chemistry for Infectious Diseases		
編集担当教員 / Professor in charge of putting together the course syllabus	石原 淳(大学院大学院医歯薬学総合研究科(薬系))		
授業担当教員名(科目責任者) / Professor in charge of the subject	石原 淳(大学院大学院医歯薬学総合研究科(薬系))		
授業担当教員名(オムニバス科目等) / Professor(s)	石原 淳(大学院大学院医歯薬学総合研究科(薬系))		
科目分類 / Class type	講義科目(区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1年, 2年	講義形態 / Class Form	講義 / Lecture
教室 / Class room	[薬学] 3F第1セミナー室 / Pharmaceutical School 3rd floor seminar room		
対象学生(クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	jishi@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical rganic Chemistry		
担当教員TEL / Tel	095-819-2427		
担当教員オフィスアワー / Office hours	Mon.-Fri. 13:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	The synthesis of natural products is a very important research field of drug discovery. In this class, the students will learn the synthesis of natural products possess useful biological activities for developing drugs for the treatment of infectious diseases.		
授業到達目標 / Goal	1) An understanding of synthetic plans and strategies. 2) An understanding of synthetic reactions. 3) An understanding of synthetic routes.		
授業方法(学習指導法) / Method	Lecture using Power Point slides and printed documents.		
授業内容 / Class outline / Con	This class provides several representative drug candidates for the infectious diseases as examples in order for the students to understand how to		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals (JACS, JOC, OL, TL, Angew. Chem. Int. Ed., Chem. Commun, etc.)		
成績評価の方法・基準等 / Evaluation	enthusiastic attitude (30%) and report (70%)		
受講要件(履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回(日時) / Time (date and time)	授業内容 / Contents		
1st	Drug candidates and their syntheses (Ishihara)		
2nd	Drug candidates and their syntheses (Ishihara)		
3rd	Drug candidates and their syntheses (Ishihara)		
4th	Drug candidates and their syntheses (Ishihara)		
5th	Drug candidates and their syntheses (Ishihara)		
6th	Drug candidates and their syntheses (Ishihara)		
7th	Drug candidates and their syntheses (Ishihara)		
8th	Drug candidates and their syntheses (Ishihara)		

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	金 / Fri 2
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	0.5
時間割コード / Time schedule code	20165503180004	科目番号 / Subject code	55031800
科目ナンバリングコード / Numbering Code	BMMP52222785		
授業科目名 / Subject	Resources of Marine Natural Medicines / Resources of Marine Natural Medicines for Infectious Diseases		
編集担当教員 / Professor in charge of putting together the course syllabus	山田 耕史 / Yamada Koji		
授業担当教員名 (科目責任者) / Professor in charge of the subject	山田 耕史 / Yamada Koji		
授業担当教員名 (オムニバス科目等) / Professor(s)	山田 耕史 / Yamada Koji		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	薬用植物園 2階セミナー室 / Medical Plants Garden 2nd floor seminar room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	kyamada@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Medicinal Plant Biochemistry		
担当教員TEL / Tel	095-819-2462		
担当教員オフィスアワー / Office hours	Monday 13:00-14:00		
授業の概要及び位置づけ / Course Outline and Objectives	To teach the marine natural medicines for infectious diseases		
授業到達目標 / Goal	To understand and to be able to summarize underlying marine natural medicines		
授業方法 (学習指導法) / Method	Lecture using power point slides and printed documents		
授業内容 / Class outline / Con	<p>The marine environment has proven to be a very rich source of extremely potent compounds that have demonstrated significant activities in antimicrobial, antitumor, anti-inflammatory, analgesia, immunomodulation, allergy, and anti-viral assay. There are now significant numbers of very interesting molecules that have come from marine sources, or have been synthesized as a result of knowledge gained from a prototypical compounds, that are either in or approaching Phase II/III clinical trials in infectious, cancer, analgesia, allergy, and cognitive diseases. A substantial number of other potential agents are following in their wake in preclinical trials in these and in other diseases. In this lecture, it introduces mainly the latest research on the marine organism, and they are reviewed from the aspect of the medicine resource.</p>		
キーワード / Key word	Marine Natural Products, antimicrobial, antitumor, anti-inflammatory, analgesia, immunomodulation, allergy, anti-viral, antiplasmodial agents		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	none		
成績評価の方法・基準等 / Evaluation	The achievement level of the above-mentioned target is evaluated by following standards. Report (80%) and Approach attitude to the problem of class (20%)		
受講要件 (履修条件) / Requirements	It is desirable to have learned the foundation of organic chemistry.		
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Since this lecture is based on marine natural products chemistry, to often review is required. The newest literature of a related field is read.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		

1	The possibilities of marine organisms for the medicinal sources (Yamada)
2	Materials for development of the medicine I Antimicrobial and anticancer drugs in clinical and preclinical trials (Yamada)
3	Materials for development of the medicine II Antiplasmodial marine natural products (Yamada)
4	Marine natural products for the tool of pharmacological studies (Yamada)

学期 / Semester	2016年度 / Academic Year 後期 / Second Semester	曜日・校時 / Day・Period	金 / Fri 2
開講期間 / Class period	2016/09/28 ~ 2017/03/31		
必修選択 / Required/Elective class	選択 / elective	単位数(一般/編入/留学) / Credits (general/admission/overseas)	0.5
時間割コード / Time schedule code	20165503181005	科目番号 / Subject code	55031810
科目ナンバリングコード / Numbering Code	BMMP52322785		
授業科目名 / Subject	Resources of Natural Medicines / Resources of Natural Medicines for Infectious Diseases		
編集担当教員 / Professor in charge of putting together the course syllabus	真木 俊英 / Maki Toshihide		
授業担当教員名 (科目責任者) / Professor in charge of the subject	真木 俊英 / Maki Toshihide		
授業担当教員名 (オムニバス科目等) / Professor(s)	真木 俊英 / Maki Toshihide		
科目分類 / Class type	講義科目 (区分D), 特別コースの授業科目 / NUPGP		
対象年次 / Year	1, 2	講義形態 / Class Form	講義 / Lecture
教室 / Class room	〔薬学〕本館5階リフレッシュルーム / Pharmaceutical School 5th floor refresh room		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	maki@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Structure Analysis for Chemicals		
担当教員TEL / Tel	095-819-2465		
担当教員オフィスアワー / Office hours	Mon. - Fri. 12:00 - 13:00		
授業の概要及び位置づけ / Course Outline and Objectives	You will learn basic of nuclear magnetic resonance spectrometer and mass spectrometer which are essential instruments for structure analysis for chemicals including infectious diseases.		
授業到達目標 / Goal	The ability to explain basic of NMR and Mass spectrometer. The ability to select rational instruments for structure analysis of target molecules.		
授業方法 (学習指導法) / Method	Educational training for structure analysis of chemicals, searching of chemicals, related to infectious diseases.		
授業内容 / Class outline / Con	Almost all medical supplies are low molecule organic compounds. In order to advance drug design and search research, it becomes skilled about a means to get to know the structure of a molecule exactly, and the capability to consider a molecule function based on a rational molecular structure model is searched for. You learn about the basic principle of a nuclear-magnetic-resonance (NMR) method and mass spectrometry and application which are an indispensable measuring method, in order to conduct the structural analysis of a low molecule organic compound.		
キーワード / Key word	nuclear magnetic resonance, mass spectrometry, chemistry, structure		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Reference books: High-Resolution NMR Techniques in Organic Chemistry, Understanding mass spectra, etc.		
成績評価の方法・基準等 / Evaluation	Report (60%) and discussion (40%) in the class		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	LACS may be used for distribution of documents and announcement about this class.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Basic of nuclear magnetic resonance spectrometer with vector model.		
2nd	Advanced techniques of nuclear magnetic resonance spectrometer with vector model.		
3rd	Basic of mass spectrometer: ionization methods and fragmentation pattern.		
4th	Discussion about practical problems in structural analysis of chemicals.		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A0	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Cell Regulation / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	武田 弘資 / Takeda Kohsuke		
授業担当教員名 (オムニバス科目等) / Professor(s)	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1年,2年	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	takeda-k@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Cell Regulation		
担当教員TEL / Tel	095-819-2417		
担当教員オフィスアワー / Office hours	At any time by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the approaches to elucidate the mechanisms of intracellular signal transduction regulating various cellular functions.		
授業到達目標 / Goal	To understand research articles in English and to acquire how to present and discuss scientific data.		
授業方法 (学習指導法) / Method	Seminar		
授業内容 / Class outline / Con	Present and discuss selected research articles on the following subject. 1. Novel mechanisms and significance of intracellular signaling. 2. Signal transduction regulating cellular stress response. 3. Cell signaling and various diseases. 4. Mitochondrial functions in cell signaling.		
キーワード / Key word	signal transduction, cell signaling, stress response, cancer, metabolism, mitochondria		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals		
成績評価の方法・基準等 / Evaluation	Presentation and discussion skills.		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C0	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Cell Regulation / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	武武田 弘資 / Takeda Kohsuke		
授業担当教員名 (オムニバス科目等) / Professor(s)	武田 弘資 / Takeda Kohsuke, 谷村 進 / Tanimura Susumu		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1年,2年	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	takeda-k@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Cell Regulation		
担当教員TEL / Tel	095-819-2417		
担当教員オフィスアワー / Office hours	At any time by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the approaches to elucidate the mechanisms of intracellular signal transduction regulating various cellular functions.		
授業到達目標 / Goal	To plan and perform appropriate experiments independently to obtain data for publication in scientific journals.		
授業方法 (学習指導法) / Method	Experiments		
授業内容 / Class outline / Con	Plan and perform experiments for each research project and discuss the resulting data with instructors and laboratory members.		
キーワード / Key word	signal transduction, cell signaling, stress response, cancer, metabolism, mitochondria		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Technical and scientific achievements.		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A1	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmacology and Therapeutic Innovation / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	植田 弘師 / Ueda Hiroshi		
授業担当教員名 (オムニバス科目等) / Professor(s)	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ueda@nagasaki-u.ac.jp ttamotsu@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmacology and Therapeutic Innovation		
担当教員TEL / Tel	095-819-2421 095-819-2473		
担当教員オフィスアワー / Office hours	Wed.12:00-12:50 (Accept any question by e-mail)		
授業の概要及び位置づけ / Course Outline and Objectives	Students comprehend original and review articles in molecular pharmacology area, and present the contents such as introduction, methods, results and discussion using PowerPoint slides. They discuss about the significance or controversial points in the report as well as authors' views. Audience including undergraduate, postgraduate and professors make comments and ask questions about the points, which are not clear.		
授業到達目標 / Goal	Students can gain the skills to choose good reports of interest from databases. Students can appropriately explain the report written in English. Students can discuss the significance of the report and related works.		
授業方法 (学習指導法) / Method	Seminar style		
授業内容 / Class outline / Con	<p>Class outline/ Through the introduction and discussion about the good reports, students learn the technology of presentation and knowledge of the advanced research.</p> <p>Contents/ By listening to the seminar given by elder students and professors, students learn the technology about the presentation and discussion skills. Regarding presentation, the choice of topics for good reports and power-point slide production. Regarding discussion, they learn the logic and ability to talk.</p> <p>The preparation of seminar starts with the choosing the report from the database using PubMed and online journals. Students decide the report for presentation through a discussion with senior students and professors. After intensive reading the report and related references, they produce the original figures and tables to make audience easily understand the contents. Using the figures and tables in the report and original ones, students explain the content of the report and discuss the importance of the paper taking the comments by audience.</p>		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Research Journals (Nature, Nature Medicine, Nature Neuroscience, Science, Cell, PNAS, J.Neuroscience)		
成績評価の方法・基準等 / Evaluation	Logical explanation and discussion (100%)		
受講要件 (履修条件) / Requirements			

<p>アクセシビリティ/Accessibility</p>	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>
<p>備考 (URL) /Remarks(URL)</p>	
<p>学生へのメッセージ/Message for students</p>	

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	22016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C1	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmacology and Therapeutic Innovation / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
授業担当教員名 (科目責任者) / Professor in charge of the subject	植田 弘師 / Ueda Hiroshi		
授業担当教員名 (オムニバス科目等) / Professor(s)	植田 弘師 / Ueda Hiroshi, 塚原 完 / Tsukahara Tamotsu		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ueda@nagasaki-u.ac.jp ttamotsu@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmacology and Therapeutic Innovation		
担当教員TEL / Tel	095-819-2421 095-819-2473		
担当教員オフィスアワー / Office hours	Wed.12:00-12:50 (Accept any question by e-mail)		
授業の概要及び位置づけ / Course Outline and Objectives	Students comprehend original and review articles in molecular pharmacology area, and present the contents such as introduction, methods, results and discussion using PowerPoint slides. They discuss about the significance or controversial points in the report as well as authors' views. Audience including undergraduate, postgraduate and professors make comments and ask questions about the points, which are not clear.		
授業到達目標 / Goal	Students can gain the skills to choose good reports of interest from databases. Students can appropriately explain the report written in English. Students can discuss the significance of the report and related works.		
授業方法 (学習指導法) / Method	Seminar style		
授業内容 / Class outline / Con	<p>Class outline/ Through the introduction and discussion about the good reports, students learn the technology of presentation and knowledge of the advanced research.</p> <p>Contents/ By listening to the seminar given by elder students and professors, students learn the technology about the presentation and discussion skills. Regarding presentation, the choice of topics for good reports and power-point slide production. Regarding discussion, they learn the logic and ability to talk.</p> <p>The preparation of seminar starts with the choosing the report from the database using PubMed and online journals. Students decide the report for presentation through a discussion with senior students and professors. After intensive reading the report and related references, they produce the original figures and tables to make audience easily understand the contents. Using the figures and tables in the report and original ones, students explain the content of the report and discuss the importance of the paper taking the comments by audience.</p>		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Research Journals (Nature, Nature Medicine, Nature Neuroscience, Science, Cell, PNAS, J.Neuroscience)		
成績評価の方法・基準等 / Evaluation	Logical explanation and discussion (100%)		
受講要件 (履修条件) / Requirements			

<p>アクセシビリティ/Accessibility</p>	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>
<p>備考 (URL) /Remarks(URL)</p>	
<p>学生へのメッセージ/Message for students</p>	

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A2	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmaceutical Chemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto, 上田 篤志 / Ueda Atsushi		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 正一 / Tanaka Masakazu		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto, 上田 篤志 / Ueda Atsushi		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	matanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Chemistry		
担当教員TEL / Tel	095-819-2423		
担当教員オフィスアワー / Office hours	Tuesday 16:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To profound the specialized knowledge and follow the frontier of relevant research field through literature reading and presentation at the group meeting.		
授業到達目標 / Goal	To master the skill of literature searching, and to develop the ability to exactly understanding the key points of the charged literature articles and presentation skill.		
授業方法 (学習指導法) / Method	seminar		
授業内容 / Class outline / Con	<p>The student should select one or more original research papers each time that seem to be interesting to most of the group members from the main international journals, read carefully, try the best to understand the contexts, and present the reported research work before the group members.</p> <p>1st & 2nd Introduction on literature searching 3rd -30th Present original research literature papers relating to the research topic of him/herself and discuss</p>		
キーワード / Key word	literature, presentation		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals in English		
成績評価の方法・基準等 / Evaluation	Reading ability and presentation skill (100%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Not only understanding the content of journal, but also presentation skill are important.		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C2	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmaceutical Chemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 正一 / Tanaka Masakazu		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 正一 / Tanaka Masakazu, 大庭 誠 / Oba Makoto		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	matanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Chemistry		
担当教員TEL / Tel	095-819-2423		
担当教員オフィスアワー / Office hours	Tuesday 16:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the fundamental experimental manipulations and techniques.		
授業到達目標 / Goal	Can carry out the routine experiments independently, and can summarize and present the experimental results.		
授業方法 (学習指導法) / Method	Seminar.		
授業内容 / Class outline/Con	A research subject will be assigned to each student, which is followed by an experimental training. During this period, the students are required to master the fundamental techniques for doing synthetic organic experiments. After that the students should work on their own research plan. Research results should be summarized and presented at the group meeting periodically.		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals		
成績評価の方法・基準等 / Evaluation			
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Discussions on experimental results are important.		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0, 日 / Sun 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A3	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmaceutical Organic Chemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	石原 淳 / Ishihara Jun		
授業担当教員名 (科目責任者) / Professor in charge of the subject	石原 淳 / Ishihara Jun		
授業担当教員名 (オムニバス科目等) / Professor(s)	石原 淳 / Ishihara Jun		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	jishi@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Organic Chemistry		
担当教員TEL / Tel	819-2427		
担当教員オフィスアワー / Office hours	Mon-Fri 13:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To attain the ability to properly access the databases and read journals and books to get the information required for the synthetic studies.		
授業到達目標 / Goal	(1) Be able to get the proper journals and books from databases. (2) Be able to understand the contents of the journals and books. (3) Be able to discuss the chemistry described in the journals and books.		
授業方法 (学習指導法) / Method	The students select the subjects on synthetic chemistry from the up-to-date journals and books and present succinctly the topics in the class.		
授業内容 / Class outline / Con	Class outline/ The students select the subjects on synthetic chemistry from the up-to-date journals and books and discuss the topics in the class.		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals (JACS, JOC, OL, TL, Angew.Chem.Int.Ed., Chem.Commun, etc)		
成績評価の方法・基準等 / Evaluation	Understanding (100%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Learn how to get proper journals and books using databases.		
2nd	Learn how to utilize the information obtained for carrying out the synthetic studies.		
3rd	Present the subjects on synthetic chemistry from the up-to-date journals and books and discuss the topics in the class. Contents above (1st-3rd) are repeated.		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0, 日 / Sun 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C3	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmaceutical Organic Chemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	石原 淳 / Ishihara Jun		
授業担当教員名 (科目責任者) / Professor in charge of the subject	石原 淳 / Ishihara Jun		
授業担当教員名 (オムニバス科目等) / Professor(s)	石原 淳 / Ishihara Jun		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	jishi@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Organic Chemistry		
担当教員TEL / Tel	819-2427		
担当教員オフィスアワー / Office hours	Mon-Fri 13:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To attain the ability to construct the target molecules.		
授業到達目標 / Goal	(1) Be able to make a reasonable synthetic plan for the construction of the target molecule. (2) Be able to carry out the reactions to construct the target molecule.		
授業方法 (学習指導法) / Method	The students carry out the experiments in the synthesis of the structurally and biologically intriguing natural products.		
授業内容 / Class outline / Con	Class outline/ The synthesis of biologically active natural products.		
キーワード / Key word	organic chemistry, organic synthesis, natural product		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals (JACS, JOC, OL, TL, Angew.Chem.Int.Ed., Chem.Commun, etc)		
成績評価の方法・基準等 / Evaluation	Thesis (100%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Collect the information concerning the target molecule by searching the databases and reading journals, and then make synthetic plans.		
2nd	Determine one synthetic route by the evaluation of the above-mentioned synthetic plans.		
3rd	Construct the required key intermediates.		
4th	Present the progress report in the group seminar and discuss the results.		
5th	Combine the intermediates prepared together to get the advanced intermediates.		

6th	Achieve the synthesis of the target molecule and confirm the structure by spectroscopic analyses.
7th	Present the final report in the group seminar and discuss the results.
8th	Prepare a manuscript of the synthetic work for publication.
9th	Prepare a thesis on the synthetic work.

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A4	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Chemistry for Pharmaceuticals / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
授業担当教員名 (科目責任者) / Professor in charge of the subject	尾野村 治 / Onomura Osamu		
授業担当教員名 (オムニバス科目等) / Professor(s)	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	onomura@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Synthetic Chemistry for Pharmaceuticals		
担当教員TEL / Tel	095-819-2429		
担当教員オフィスアワー / Office hours	Mon. - Fri. 10:30 - 18:00		
授業の概要及び位置づけ / Course Outline and Objectives	A major object is to stimulate you by learning what subjects are now current important topics in the field of synthetic organic chemistry directed toward medicinal chemistry through identifying some important literatures in a variety of related academic articles followed by brief description of the contents and discussions.		
授業到達目標 / Goal	You can extract useful research articles by data bases and get necessary original papers. Furthermore, you can understand the contents of the literatures.		
授業方法 (学習指導法) / Method	Educational training for presentation and discussion concerning about your research are carried out.		
授業内容 / Class outline / Con	You read original articles written in English. By selection of research articles related to your research and brief summary of the contents, you get new information and presentation skills.		
キーワード / Key word	Search for academic literatures, Summarization of literatures, Presentation		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Academic journals (JACS, JOC, OL, Tetrahedron Letters, Angew. Chem. Int. Ed., Chem. Commun. Etc.)		
成績評価の方法・基準等 / Evaluation	Understanding of research articles (100%)		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	In advance, read carefully more than three original papers.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1	Lecture on search skills of data bases (Scifinder, Beilstein). (Onomura & Kuriyama)		
2	Lecture about methods to get original articles. (O & K)		
3	Introducing one original literature related to your research, and discussion of the content (1) (O & K)		
4	Introducing one original literature related to your research, and discussion of the content (2) (O & K)		
5	Introducing one original literature related to your research, and discussion of the content (3) (O & K)		

6	Introducing one original literature related to your research, and discussion of the content (4) (O & K)
7	Introducing one original literature related to your research, and discussion of the content (5) (O & K)
8	Introducing one original literature related to your research, and discussion of the content (6) (O & K)
9	Introducing one original literature related to your research, and discussion of the content (7) (O & K)
10	Introducing one original literature related to your research, and discussion of the content (8) (O & K)
11	Introducing one original literature related to your research, and discussion of the content (9) (O & K)
12	Introducing one original literature related to your research, and discussion of the content (10) (O & K)
13	Introducing one original literature related to your research, and discussion of the content (11) (O & K)
14	Introducing one original literature related to your research, and discussion of the content (12) (O & K)
15	Introducing one original literature related to your research, and discussion of the content (13) (O & K)

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C4	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Chemistry for Pharmaceuticals / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
授業担当教員名(科目責任者) / Professor in charge of the subject	尾野村 治 / Onomura Osamu		
授業担当教員名(オムニバス科目等) / Professor(s)	尾野村 治 / Onomura Osamu, 栗山 正巳 / Kuriyama Masami		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生(クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	onomura@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Synthetic Chemistry for Pharmaceuticals		
担当教員TEL / Tel	095-819-2429		
担当教員オフィスアワー / Office hours	Mon. - Fri. 10:30 - 18:00		
授業の概要及び位置づけ / Course Outline and Objectives	You learn how to do experiment to get new and fruitful results in synthetic organic chemistry directed toward medicinal chemistry.		
授業到達目標 / Goal	<p>Planning rational synthetic routes to target molecules.</p> <p>The ability to carry out basic reactions necessary for preparation of complicated molecules.</p> <p>The skills to isolate desired products from reaction mixtures.</p> <p>The ability to prepare manuscripts to control.</p>		
授業方法(学習指導法) / Method	Educational training for searching, planning, experimental, and presentation skills related to your research subject.		
授業内容 / Class outline / Con	You read original literatures written in English. By selection of research articles related to your research project and presentation of the contents, you get new information and presentation skills.		
キーワード / Key word	Synthetic methods, Analysis of reaction mechanism, Comparison of experimental results		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Academic journals (JACS, JOC, OL, Tetrahedron Letters, Angew. Chem. Int. Ed., Chem. Commun. etc.), Data bases (Scifinder, Beilstein)		
成績評価の方法・基準等 / Evaluation	Completion of research articles (100%).		
受講要件(履修条件) / Requirements	None		
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考(URL) / Remarks(URL)			
学生へのメッセージ / Message for students	In advance, master basic knowledge of organic chemistry.		
授業計画詳細 / Course Schedule			
回(日時) / Time(date and time)	授業内容 / Contents		
1	Search data bases to extract academic articles, and Read the articles to get information for preparation of target molecules.		
2	Design new synthetic routes and plan synthetic experiment. (O & K)		
3	Search and read academic articles related to the new routes. (O & K)		
4	Analysis of obtained information and determination of reasonable 3 synthetic routes. (O & K)		

5	Experiment of the 1st synthetic route. (0 & K)
6	Experiment of the 2nd synthetic route. (0 & K)
7	Experiment of the 3rd synthetic route. (0 & K)
8	Comparison of experimental results by methods 1-3 (0 & K)
9	Presentation of research results to select the best method. (0 & K)
10	Generality of selected synthetic method. (0 & K)
11	Measurement of physical data. (0 & K)
12	Experiments for analysis of reaction mechanism. (0 & K)
13	Summarization of research results for presentation in a symposium. (0 & K)
14	Presentation of research results in a symposium. (0 & K)
15	Preparation of a manuscript to contribute to a journal. (0 & K)

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C5	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Genome-based Drug Discovery / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirovani Keiro		
授業担当教員名(科目責任者) / Professor in charge of the subject	岩田 修永 / Iwata Nobuhisa		
授業担当教員名(オムニバス科目等) / Professor(s)	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirovani Keiro		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生(クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	iwata-n@nagasaki-u.ac.jp, keiroshiro@nagasaki-u.ac.jp, asai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Gene-based Drug Discovery		
担当教員TEL/Tel	095-819-2435 (Iwata), 095-819-2436 (Shirovani), 095-819-2437 (Asai)		
担当教員オフィスアワー / Office hours	Mon-Fri. 13:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	Designing an experimental plan to solve the problems, training experimental techniques, and evaluating obtained results.		
授業到達目標 / Goal	At the end of this class, the students should be able to: Fulfill the experiments using appropriate methods and trained techniques according to the experimental plan, and make a paper to publish in scientific journals.		
授業方法(学習指導法) / Method	Practice a research according to instructors' direction.		
授業内容 / Class outline / Con	Molecular biology of neurodegenerative diseases. 1st: molecular biological experiments 2nd: cell biological experiments 3rd: biochemical & enzymological experiments 4th: histochemical experiments 5th: animal experiments		
キーワード / Key word	Alzheimer's disease, pathogenesis, enzyme, recombinant DNA technology, animal model, drug discovery, development of early diagnostic metho		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals (JBC, J Neurosci, Neuron, Nature & its sister journals, Science, Cell & its sister journals, etc.)		
成績評価の方法・基準等 / Evaluation	Active participation 80%, and achievement 20%		
受講要件(履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考(URL) / Remarks(URL)			
学生へのメッセージ / Message for students	Professional training		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A5	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Genome-based Drug Discovery / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirohani Keiro, 浅井 将 / Asai Masashi		
授業担当教員名 (科目責任者) / Professor in charge of the subject	岩田 修永 / Iwata Nobuhisa		
授業担当教員名 (オムニバス科目等) / Professor(s)	岩田 修永 / Iwata Nobuhisa, 城谷 圭朗 / Shirohani Keiro, 浅井 将 / Asai Masashi		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	iwata-n@nagasaki-u.ac.jp, keiroshiro@nagasaki-u.ac.jp, asai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Gene-based Drug Discovery		
担当教員TEL/Tel	095-819-2435 (Iwata), 095-819-2436 (Shirohani), 095-819-2437 (Asai)		
担当教員オフィスアワー / Office hours	Mon-Fri. 13:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	Training search, selection and evaluation of information, and enhancing own problem-solving abilities		
授業到達目標 / Goal	At the end of this class, the students should be able to: Select appropriate information necessary for own research theme from overflowing information. Find out fundamental problem in own research field, and discuss it. Find appropriate avenues to resolve		
授業方法 (学習指導法) / Method	Presentation using slides and discussion in a small group		
授業内容 / Class outline/Con	Cultivate ability to find out fundamental problem in own research field and solve the problem by oneself. 1st: Search appropriate information necessary for own research theme using PubMed and so on. 2nd: Select appropriate information from overflowing ones. 3rd: Peruse papers published in scientific journals 4th: Find out fundamental problem in own research field, and discuss it with instructors.		
キーワード / Key word	Alzheimer's disease, pathogenesis, enzyme, recombinant DNA technology, animal model, drug discovery, development of early diagnostic method		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals (J Biol Chem, J Neurosci, Neuron, Nature & its sister journals, Science, Cell & its sister journals, etc.)		
成績評価の方法・基準等 / Evaluation	Active participation 80%, and achievement 20%		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	professional training		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0, 日 / Sun 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A6	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Molecular Pharmacology of infectious Agents / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	小林 信之 / Kobayashi Nobuyuki, 北里 海雄 / Kitazato Kaio, 春山 貴弘 / Haruyama Takahiro		
授業担当教員名 (科目責任者) / Professor in charge of the subject	小林 信之 / Kobayashi Nobuyuki		
授業担当教員名 (オムニバス科目等) / Professor(s)	小林 信之 / Kobayashi Nobuyuki, 北里 海雄 / Kitazato Kaio, 春山 貴弘 / Haruyama Takahiro		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	nobnob@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Molecular Pharmacology of infectious Agents		
担当教員TEL / Tel	095-819-2456		
担当教員オフィスアワー / Office hours	Any time but need apointment		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the nature of infectious agents		
授業到達目標 / Goal	Be able to understand English articles and recognize nature of infectious agents.		
授業方法 (学習指導法) / Method	Use selected articles published in medical journals.		
授業内容 / Class outline / Con	Read medical articles published in English and understand the contents. Contents/ 1st - 10th : Basic Bacteriology. 11th - 20th : Basic Virology. 21st - 30th : Infectious Diseases.		
キーワード / Key word	Bacteria, Virus, Infectious Diseases		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Report		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility			
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0, 日 / Sun 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C6	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Molecular Pharmacology of infectious Agents / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	小林 信之 / Kobayashi Nobuyuki, 北里 海雄 / Kitazato Kaio, 春山 貴弘 / Haruyama Takahiro		
授業担当教員名 (科目責任者) / Professor in charge of the subject	小林 信之 / Kobayashi Nobuyuki		
授業担当教員名 (オムニバス科目等) / Professor(s)	小林 信之 / Kobayashi Nobuyuki, 北里 海雄 / Kitazato Kaio, 春山 貴弘 / Haruyama Takahiro		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	nobnob@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Molecular Pharmacology of infectious Agents		
担当教員TEL/Tel	095-819-2456		
担当教員オフィスアワー / Office hours	Any time but need apointment		
授業の概要及び位置づけ / Course Outline and Objectives	To learn the nature of infectious agents.		
授業到達目標 / Goal	Be able to understand English articles and recognize nature of infectious agents.		
授業方法 (学習指導法) / Method	Use selected articles published in medical journals.		
授業内容 / Class outline / Con	Read medical articles published in English and understand the contents. Contents/ 1st - 10th : Basic Bacteriology. 11th - 20th : Basic Virology. 21st - 30th : Infectious Diseases.		
キーワード / Key word	Bacteria, Virus, Infectious Diseases		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Report		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility			
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Social problems of emerging infectious diseases		
2nd	Characterization of infectious agents		
3rd	Molecular therapy of Infectious agents		
4th	Molecular mechanism of replication of infectious agents		
5th	Strategy for drug development of anti-infectious agents		
6th	Strategy for vaccine development of infectious agents		
7th	Application of virus as vectors on human gene therapy		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A7	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Natural Product Chemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 隆 / Tanaka Takashi, 松尾 洋介 / Matsuo Yosuke, 齋藤 義紀 / Saito Yoshinori		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 隆 / Tanaka Takashi		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 隆 / Tanaka Takashi, 松尾 洋介 / Matsuo Yosuke, 齋藤 義紀 / Saito Yoshinori		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	t-tanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Natural Product Chemistry		
担当教員TEL / Tel	819-2432		
担当教員オフィスアワー / Office hours	Any time (Please make appointment by E-mail)		
授業の概要及び位置づけ / Course Outline and Objectives	How to isolate the natural compounds from plants, and how to determine the structure of natural compounds.		
授業到達目標 / Goal	Get the ability to isolate Naturap products and determine the structure.		
授業方法 (学習指導法) / Method	Instruction and teaching in the labolatory		
授業内容 / Class outline / Con	Methods of structure determination and application.		
キーワード / Key word	Chromatography, spectroscopy, Plant, Natural medicine		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Textbooks of Natural product chemistry and Spectroscopic methods		
成績評価の方法・基準等 / Evaluation	Attitude and completion og thesis		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)	http://www.ph.nagasaki-u.ac.jp/lab/natpro/index-j.html		
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1	Introduction of spectroscopy, IR, UV, MS, NMR		
2	1H NMR spectroscopy (1)		
3	1H NMR spectroscopy (2)		
4	1H NMR spectroscopy (3)		
5	13C NMR spectroscopy (1)		
6	13C NMR spectroscopy (2)		
7	IR, UV, and CD spectroscopy		
8	2D NMR spectroscopy (introduction)		
9	2D NMR spectroscopy (COSY)		
10	2D NMR spectroscopy (HSQC)		
11	2D NMR spectroscopy (HMBC)		

12	2D NMR spectroscopy (NOESY)
13	Mass spectroscopy
14	Chemical derivatization (1)
15	Chemical derivatization (2)

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C7	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Natural Product Chemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	田中 隆 / Tanaka Takashi, 齋藤 嘉朗 / Saito Yoshiro, 松尾 洋介 / Matsuo Yosuke		
授業担当教員名 (科目責任者) / Professor in charge of the subject	田中 隆 / Tanaka Takashi		
授業担当教員名 (オムニバス科目等) / Professor(s)	田中 隆 / Tanaka Takashi, 齋藤 嘉朗 / Saito Yoshiro, 松尾 洋介 / Matsuo Yosuke		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	t-tanaka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Natural Product Chemistry		
担当教員TEL/Tel	819-2432		
担当教員オフィスアワー / Office hours	Any time (Please make appointment by E-mail)		
授業の概要及び位置づけ / Course Outline and Objectives	To achieve the isolation and structure determination of natural products, isolating methods and instrumental analysis should be studied.		
授業到達目標 / Goal	The students should learn the experimental method and skill, to achieve their ability to pursue their target by themselves.		
授業方法 (学習指導法) / Method	During the experiment, student are consulted freely, and directed.		
授業内容 / Class outline / Con	Practice of extraction, separation, purification, and structure determination of natural products.		
キーワード / Key word	natural product, terpene, flavonoid, phenol, polyphenol		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	English journals, English-Japanese and Japanese-English dictionaries, Biochemical encyclopedia, Scientific and Chemical encyclopedia, Handbook of Analytical Chemistry, Handbook of Chemistry.		
成績評価の方法・基準等 / Evaluation	Understanding ability of English paper 50%, writing ability of English paper 50%		
受講要件 (履修条件) / Requirements	none		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1	Selection of targeted plant or other natural resources		
2	HPLC and TLC analysis of plants.		
3	Extraction,		
4	Fractionation with solvent partitioning		
5	Column chromatography		
6	Column chromatography		
7	Column chromatography		
8	Purification of the natural compounds		
9	Purification of the natural compounds		

10	Chemical derivatization of compounds
11	Chemical and physical properties of natural compounds
12	Structure determination of the natural products
13	Structure determination of the natural products
14	Structure confirmation of the natural products
15	Preparation of paper
16	Preparation of paper

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A8	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Medicinal Plant Biochemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	山田 耕史 / Yamada Koji		
授業担当教員名 (科目責任者) / Professor in charge of the subject	山田 耕史 / Yamada Koji		
授業担当教員名 (オムニバス科目等) / Professor(s)	山田 耕史 / Yamada Koji		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	kyamada@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Medicinal Plant Biochemistry		
担当教員TEL / Tel	095-819-2462		
担当教員オフィスアワー / Office hours	Monday 13:00-14:00		
授業の概要及び位置づけ / Course Outline and Objectives	It is aimed to acquire the writing ability of English article for the publishing of the experimental papers as a scientific researcher.		
授業到達目標 / Goal	It is the goal to write logically the scientific articles without grammatical errors.		
授業方法 (学習指導法) / Method	Oral presentation with academic documents and discussions		
授業内容 / Class outline / Con	In this seminar, students must read the scientific English papers for your research themes, and your research data should be summarized in English.		
キーワード / Key word	Article search, English paper, Presentation		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	English journals, JACS, JOC, JNP etc		
成績評価の方法・基準等 / Evaluation	Understanding ability of English paper 50%, writing ability of English paper 50%		
受講要件 (履修条件) / Requirements	none		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Specialized instruction. Editing and logical consideration of the data, and in advance planning of the research experiment.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Lecture how to write an English paper.		
2nd	Lecture how to write an English paper.		
3rd	Explain one English paper related to your research, and discuss on their data.		
4th	Explain one English paper related to your research, and discuss on their data.		
5th	Explain one English paper related to your research, and discuss on their data.		
6th	Explain one English paper related to your research, and discuss on their data.		
7th	Explain one English paper related to your research, and discuss on their data.		
8th	Explain one English paper related to your research, and discuss on their data.		
pth	Explain one English paper related to your research, and discuss on their data.		
10th	Explain one English paper related to your research, and discuss on their data.		

11th	Explain one English paper related to your research, and discuss on their data.
12th	Explain one English paper related to your research, and discuss on their data.
13th	Explain one English paper related to your research, and discuss on their data.
14th	Explain one English paper related to your research, and discuss on their data.
15th	Explain one English paper related to your research, and discuss on their data.

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C8	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Medicinal Plant Biochemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	山田 耕史 / Yamada Koji		
授業担当教員名 (科目責任者) / Professor in charge of the subject	山田 耕史 / Yamada Koji		
授業担当教員名 (オムニバス科目等) / Professor(s)	山田 耕史 / Yamada Koji		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	kyamada@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Medicinal Plant Biochemistry		
担当教員TEL / Tel	095-819-2462		
担当教員オフィスアワー / Office hours	Monday 13:00-14:00		
授業の概要及び位置づけ / Course Outline and Objectives	It is aimed to study how to perform the experiments of scientific theme, and to make the scientific paper in English		
授業到達目標 / Goal	It is the goal to independently make the experiment plan for the research, and to publish the research data into an academic journal.		
授業方法 (学習指導法) / Method	Carrying out individual experiments, getting the personal direction on each theme, and discussion about the data.		
授業内容 / Class outline / Con	The bioactive constituents obtained from marine organisms are isolated, and those structures are elucidated, and detailed bioactivities are studied, to develop the new medicine material of the marine origin. In this Experiment, the research on bioactive constituent is done for that.		
キーワード / Key word	Article, scientific English paper, Presentation		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals: ACS, JOC, JNP etc, Database: SciFinder Scholar		
成績評価の方法・基準等 / Evaluation	Complete English paper and its thesis 100%		
受講要件 (履修条件) / Requirements	none		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Specialized instruction. Editing and logical consideration of the data, and in advance planning of the research experiment.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Make the strategy for the research based on the aim		
2nd	Do the experiments		
3rd	Do the experiments		
4th	Do the experiments		
5th	Do the experiments		
6th	Analyze the experimental results, and solve problems.		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000A9	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Structure Analysis for Chemicals / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	真木 俊英(長崎大学産学官連携戦略本部)		
授業担当教員名(科目責任者) / Professor in charge of the subject	真木 俊英(長崎大学産学官連携戦略本部)		
授業担当教員名(オムニバス科目等) / Professor(s)	真木 俊英(長崎大学産学官連携戦略本部)		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1年,2年	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生(クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	maki@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Structure Analysis for Chemicals		
担当教員TEL / Tel	095-819-2465		
担当教員オフィスアワー / Office hours	Mon. - Fri. 12:00 - 13:00		
授業の概要及び位置づけ / Course Outline and Objectives	Searching, understanding, and analysis of current publications about organic chemistry and pharmaceutical sciences. Analysis of research reports based on their background, experiments, and results. Discussion about contents of research and future subjects.		
授業到達目標 / Goal	Capability to search the target paper Skill for efficient use technology of a database Capability of understanding of specialized contents		
授業方法(学習指導法) / Method	The original paper relevant to research is chosen from a scholarly journal, and a seminar reports. The paper is read and comprehended.		
授業内容 / Class outline / Con	i) Capability to read a special academic journal and to understand the contents ii) Capability to carry out reproducibility test by reading and dispelling the method of an experiment iii) Capability to investigate the results of a paper and to use for own research.		
キーワード / Key word	database, search, summarization, presentation, discussion		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals for organic chemistry (JACS, JOC, Org.Letter, Tetrahedron etc.)		
成績評価の方法・基準等 / Evaluation	Skill for search 20%, selection of paper 20%, presentation 20%, and the discussion 40%		
受講要件(履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考(URL) / Remarks(URL)			
学生へのメッセージ / Message for students			

7th	Do the experiments.
8th	Do the experiments.
9th	Do the experiments.
10th	Do the experiments.
11th	Do the experiments.
12th	Do the experiments.
13th	Summarize experimental results, report, and discuss.
14th	Present the research data at an academic meeting.
15th	Publish the research results in a scientific English journal.

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010C9	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Structure Analysis for Chemicals / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	真木 俊英 / Maki Toshihide		
授業担当教員名 (科目責任者) / Professor in charge of the subject	真木 俊英 / Maki Toshihide		
授業担当教員名 (オムニバス科目等) / Professor(s)	真木 俊英 / Maki Toshihide		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	maki@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Structure Analysis for Chemicals		
担当教員TEL / Tel	095-819-2465		
担当教員オフィスアワー / Office hours	Mon. - Fri. 12:00 - 13:00		
授業の概要及び位置づけ / Course Outline and Objectives	Searching, understanding, and analysis of current publications about organic chemistry and pharmaceutical sciences. Analysis of research reports based on their background, experiments, and results. Discussion about contents of research and future subjects.		
授業到達目標 / Goal	Capability to search the target paper Skill for efficient use technology of a database Capability of understanding of specialized contents		
授業方法 (学習指導法) / Method	The original paper relevant to research is chosen from a scholarly journal, and a seminar reports. The paper is read and comprehended.		
授業内容 / Class outline / Con	i) Capability to read a special academic journal and to understand the contents ii) Capability to carry out reproducibility test by reading and dispelling the method of an experiment iii) Capability to investigate the results of a paper and to use for own research.		
キーワード / Key word	database, search, summarization, presentation, discussion		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Journals for organic chemistry (JACS, JOC, Org.Letter, Tetrahedron etc.)		
成績評価の方法・基準等 / Evaluation	Skill for search 20%, selection of paper 20%, presentation 20%, and the discussion 40%		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B0	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Chemistry of Biofunctional Molecules / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	甲斐 雅亮 / Kai Masaaki, 梶島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
授業担当教員名 (科目責任者) / Professor in charge of the subject	甲斐 雅亮 / Kai Masaaki		
授業担当教員名 (オムニバス科目等) / Professor(s)	甲斐 雅亮 / Kai Masaaki, 梶島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ms-kai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Chemistry of Biofunctional Molecules		
担当教員TEL/Tel	095-819-2438		
担当教員オフィスアワー / Office hours	12:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To learn how to demonstrate about contents of scientific papers, and individual experimental data.		
授業到達目標 / Goal	To attain ability of solution about individual research problems.		
授業方法 (学習指導法) / Method	Comprehension of various experimental data in scientific papers related to your research, and presentation of your experimental data.		
授業内容 / Class outline / Con	Demonstration of a scientific paper related to your research and of your experimental data each time.		
キーワード / Key word	Presentation		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Electronic dictionary, English-Japanese dictionary, Internet information		
成績評価の方法・基準等 / Evaluation	Presentation ability(30%), Discussion ability(30%), Aggressiveness(40%)		
受講要件 (履修条件) / Requirements	none		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Present an English paper, and discuss about its data (1)		
2nd	Present an English paper, and discuss about its data (2)		
3rd	Introduce experimental data, and discuss about them (1)		
4th	Introduce experimental data, and discuss about them (2)		
5th	Study how to solve research problems and get a conclusion.		
6th	Repeat above plans		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D0	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Chemistry of Biofunctional Molecules / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	甲斐 雅亮 / Kai Masaaki, 梶島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
授業担当教員名(科目責任者) / Professor in charge of the subject	甲斐 雅亮 / Kai Masaaki		
授業担当教員名(オムニバス科目等) / Professor(s)	甲斐 雅亮 / Kai Masaaki, 梶島 力 / Kabashima Tsutomu, 柴田 孝之 / Shibata Takayuki		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生(クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ms-kai@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Chemistry of Biofunctional Molecules		
担当教員TEL / Tel	095-819-2438		
担当教員オフィスアワー / Office hours	12:00-18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To learn how to carry out experiments of scientific theme, and to get the positive data.		
授業到達目標 / Goal	To publish your research data as academic papers and to attain a master degree.		
授業方法(学習指導法) / Method	Research of your scientific theme.		
授業内容 / Class outline / Con	Research one of the following scientific subjects: 1)genomics and proteomics, 2)optical organic reagents, 3)DNA analysis, 4)protein interaction, and 5)expression regulation of gene.		
キーワード / Key word	Experiment		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Reports		
受講要件(履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks(URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回(日時) / Time(date and time)	授業内容 / Contents		
1st	Getting information about individual themes		
2nd	Making the plan for the research		
3rd	Experiments		
4th	Report of individual experimental data		
5th	Repeat above plans		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B1	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Hygienic Chemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 吉田 さくら / Yoshida Sakura		
授業担当教員名 (科目責任者) / Professor in charge of the subject	中山 守雄 / Nakayama Morio		
授業担当教員名 (オムニバス科目等) / Professor(s)	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 吉田 さくら / Yoshida Sakura		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	morio@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Hygienic Chemistry		
担当教員TEL/Tel	095-819-2442		
担当教員オフィスアワー / Office hours	Monday - Friday 0:20 - 0:50 p.m. or by appointment		
授業の概要及び位置づけ / Course Outline and Objectives	It is aimed to acquire the writing ability of English article for the publishing of the experimental papers as a scientific researcher		
授業到達目標 / Goal	It is the goal to write logically the scientific articles without grammatical errors		
授業方法 (学習指導法) / Method	Oral presentation with academic documents and discussions		
授業内容 / Class outline/Content	In this seminar, students must read the scientific English papers for your research themes, and your research data should be summarized in English.		
キーワード / Key word	Article search, English paper, Presentation.		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	English journals, English-Japanese and Japanese-English dictionaries, Biochemical encyclopedia, Scientific and Chemical encyclopedia, Handbook of Analytical Chemistry, Handbook of Chemistry.		
成績評価の方法・基準等 / Evaluation	Understanding ability of English paper 50%, writing ability of English paper 50%		
受講要件 (履修条件) / Requirements	Nothing		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Preparation of the English paper is required in advance.		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Lecture how to write an English paper		
2nd	Lecture how to write an English paper		
3rd	Lecture how to write an English paper		
4th	Lecture how to write an English paper		
5th	Lecture how to write an English paper		
6th	Lecture how to write an English paper		
7th	Lecture how to write an English paper		
8th	Lecture how to write an English paper		
9th	Make a plan to write an English paper : Arrangement of whole contents.		

10th	Write the English article of the ' Introduction ' and ' Materials and Methods ' .
11th	Write the English article of the ' Results ' and making the Figures and Tables.
12th	Write the English article of the ' Results ' .
13th	Write the English article of the ' Discussion ' .
14th	Write the English article of the ' Discussion ' .
15th	Write the complete English article with the references.

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D1	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Hygienic Chemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 吉田 さくら / Yoshida Sakura		
授業担当教員名 (科目責任者) / Professor in charge of the subject	中山 守雄 / Nakayama Morio		
授業担当教員名 (オムニバス科目等) / Professor(s)	中山 守雄 / Nakayama Morio, 淵上 剛志 / Fuchigami Takeshi, 吉田 さくら / Yoshida Sakura		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	morio@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Hygienic Chemistry		
担当教員TEL / Tel	095-819-2441		
担当教員オフィスアワー / Office hours	Monday - Friday 0:20 - 0:50 p.m. or by appointment		
授業の概要及び位置づけ / Course Outline and Objectives	It is aimed to study how to perform the experiments of scientific theme.		
授業到達目標 / Goal	It is the goal to independently make the experiment plan for the research		
授業方法 (学習指導法) / Method	Carrying out individual experiments, getting the personal direction on each theme, and discussion about the data.		
授業内容 / Class outline / Con	Research one of the following scientific subjects: 1) trace essential elements in biological system, 2) selenium as nutrient, 3) biomembrane mimetic materials, 4) ^{99m} Tc radiopharmaceuticals, and 5) amyloid imaging probe		
キーワード / Key word	Strategy, Research, Presentation.		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals, Database		
成績評価の方法・基準等 / Evaluation	Laboratory work (50%), Presentation and communication skill (50%),		
受講要件 (履修条件) / Requirements	Nothing		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students	Editing and logical consideration of the data, and in advance planning of the research experiment		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Make the strategy for the research.		
2nd	Do the experiments		
3rd	Analyze the experimental results, and solve problems.		
4th	Summarize experimental results, report, and discuss.		
5th	Present the research data at an academic meeting		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B2	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Analytical Chemistry / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
授業担当教員名 (科目責任者) / Professor in charge of the subject	黒田 直敬 / Naotaka Kuroda		
授業担当教員名 (オムニバス科目等) / Professor(s)	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	n-kuro@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Analytical Chemistry, 5th floor		
担当教員TEL / Tel	Ext. 2894		
担当教員オフィスアワー / Office hours	AM 10:30-PM 18:00		
授業の概要及び位置づけ / Course Outline and Objectives	This course provides instruction and experience in organizing and presenting oral presentations on a particular topic of interest regarding individual research project from literature search.		
授業到達目標 / Goal	Student will develop skills in scientific literature retrieval and oral presentation of scientific information from literature search.		
授業方法 (学習指導法) / Method	Student will summarize the contents of the literatures that relate to the individual research project, explain, ask and answer the questions.		
授業内容 / Class outline / Con	<p>This course will provide how to do a literature search, to evaluate scientific information, to summarize the appropriate information, to develop and propose a novel research idea, to convey that information in an oral presentation, and to further develop scientific writing skills.</p> <ol style="list-style-type: none"> 1. Effective use of the library and other information resources including Internet 2. Finding appropriate information utilizing the primary literature. 3. Finding and evaluating information utilizing secondary sources such as the Internet including SciFinder Scholar and Medline 4. Preparing PowerPoint slides using effective information 5. Oral presentation of appropriate information from literature search, and ask and answer the questions 6. Discussions of the contents of oral presentation with faculty members in laboratory and students 		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Appropriate literature from the journals of analytical chemistry		
成績評価の方法・基準等 / Evaluation	Method of achievement evaluation/active participation (60%), presentation skill (20%), ask and answer the questions (20%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	<p>In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office.</p> <p>Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp</p>		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D2	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Analytical Chemistry / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
授業担当教員名 (科目責任者) / Professor in charge of the subject	黒田 直敬 / Naotaka Kuroda		
授業担当教員名 (オムニバス科目等) / Professor(s)	黒田 直敬 / Naotaka Kuroda, 岸川 直哉 / Kishikawa Naoya		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	n-kuro@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Analytical Chemistry, 5th floor		
担当教員TEL / Tel	Ext. 2894		
担当教員オフィスアワー / Office hours	AM 10:30-PM 18:00		
授業の概要及び位置づけ / Course Outline and Objectives	To learn experimental methods and skills used by analytical chemists, and to learn how to effectively present scientific results and to further develop scientific writing skills.		
授業到達目標 / Goal	Student will develop skills in 1) planning investigations, 2) operation of analytical equipments, 3) collection and treatment of experimental data, 4) oral presentation of scientific research, 5) writing scientific reports, 6) developing scientific thinking and problem-solving techniques.		
授業方法 (学習指導法) / Method	Student will acquire knowledge and skills on experiments relating to analytical chemistry through laboratory work and report writing skills.		
授業内容 / Class outline / Con	To accomplish the goals, experiments have been designed to covers literature search, proper and safe operation of laboratory equipment, data collecting and report writing. 1. Scientific literature retrieval on individual research project 2. Understanding of special techniques and instruments for individual research project 3. Planning and conducting experiments 4. Records and treatment of data obtained from the experimental protocols 5. Using a computer as a tool in writing, drawing chemical structures and data analysis to communicate scientific information 6. Communicating effectively the results of experimental results with faculty members in laboratory and students 7. Presentation of research results at appropriate academic conference 8. Writing scientific reports		
キーワード / Key word			
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Appropriate literature on individual research project		
成績評価の方法・基準等 / Evaluation	Laboratory work (50%), presentation and communication skill (10%), reports (30%), presentation at academic conference (10%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B3	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmacotherapeutics / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	塚元 和弘 / Tsukamoto Kazuhiro, 近藤 新二 / Kondo Shinji		
授業担当教員名 (科目責任者) / Professor in charge of the subject	塚元 和弘 / Tsukamoto Kazuhiro		
授業担当教員名 (オムニバス科目等) / Professor(s)	塚元 和弘 / Tsukamoto Kazuhiro, 近藤 新二 / Kondo Shinji		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ktsuka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Department of Pharmacotherapeutics		
担当教員TEL / Tel	095-819-8573		
担当教員オフィスアワー / Office hours	Monday-Friday 9:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	To teach clinical and molecular genetics		
授業到達目標 / Goal	To understand the methods to identify the disease-susceptible and drug-responsible genes for multifactorial disorders, and an application to nucleic acids-based diagnosis		
授業方法 (学習指導法) / Method	Lecture using PowerPoint slides and printed documents		
授業内容 / Class outline / Con	The personalized medicine composes the nucleic acids-based diagnosis and genome-based gene discovery including the susceptible genes for diseases and the drug-responsible genes. The association study using genetic polymorphic markers is a strong tool to identify the disease-susceptible and drug-responsible genes for multifactorial disorders.		
キーワード / Key word	genetic polymorphisms, association study, multifactorial disorders, nucleic acids-based diagnosis		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	none		
成績評価の方法・基準等 / Evaluation	brief examination at each class (40%) and report (60%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	Clinical human genetics I		
2nd	Clinical human genetics II		
3rd	Molecular human genetics I		
4th	Molecular human genetics II		
5th	Genetic polymorphisms and detecting techniques		
6th	Multifactorial disorders and association study		
7th	Identification of disorder-susceptible and drug-responsible genes		
8th	Nucleic acids-based diagnosis		

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D3	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmacotherapeutics / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	塚元 和弘 / Tsukamoto Kazuhiro, 近藤 新二 / Kondo Shinji		
授業担当教員名 (科目責任者) / Professor in charge of the subject	塚元 和弘 / Tsukamoto Kazuhiro		
授業担当教員名 (オムニバス科目等) / Professor(s)	塚元 和弘 / Tsukamoto Kazuhiro, 近藤 新二 / Kondo Shinji		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	ktsuka@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Department of Pharmacotherapeutics		
担当教員TEL / Tel	095-819-8573		
担当教員オフィスアワー / Office hours	Monday-Friday 9:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	To identify the disease-susceptible genes or drug-responsible genes by candidate gene-based association study		
授業到達目標 / Goal	To learn molecular genetics techniques and skills in both bioinformatics and statistical analyses, as well as to understand the concept of methodology on association study, especially case-control study		
授業方法 (学習指導法) / Method	Performance of molecular genetics, bioinformatics, pharmacogenomics, and case-control study		
授業内容 / Class outline/Con	The personalized medicine composes the nucleic acids-based diagnosis and genome-based gene discovery including the susceptible genes for diseases and the drug-responsible genes. The association study using genetic polymorphic markers is a strong tool to identify the disease-susceptible and drug-responsible genes for multifactorial disorders.		
キーワード / Key word	genetic polymorphisms, bioinformatics, association study, disease-susceptibility, drug responsibility		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	None		
成績評価の方法・基準等 / Evaluation	Master 's dissertation (100%)		
受講要件 (履修条件) / Requirements			
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)			
学生へのメッセージ / Message for students			
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
1st	DNA and RNA extraction		
2nd	Selection of candidate genes for the disease-susceptibility or drug responsibility		
3rd	Getting information on genetic polymorphisms of candidate genes from genome database (bioinformatics)		
4th	Analyses of genetic polymorphisms of candidate genes (1)		
5th	Analyses of genetic polymorphisms of candidate genes (2)		
6th	Analyses of genetic polymorphisms of candidate genes (3)		

7th	Statistical analyses
8th	Discussion on the results
9th	Writing a manuscript
10th	Submission of a master ' s dissertation

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0, 日 / Sun 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B4	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmaceutical Informatics / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	川上 茂 / Kawakami Shigeru, 測上 由貴 / Fuchigami Yuki, 萩森 政頼		
授業担当教員名 (科目責任者) / Professor in charge of the subject	川上 茂 / Kawakami Shigeru		
授業担当教員名 (オムニバス科目等) / Professor(s)	川上 茂 / Kawakami Shigeru, 測上 由貴 / Fuchigami Yuki, 萩森 政頼		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	skawakam@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Informatics		
担当教員TEL/Tel	095-819-8563		
担当教員オフィスアワー / Office hours	9:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	This course provides fundamental skills in organizing and presenting document on a particular topic regarding pharmaceutical informatics from scientific papers. 【薬学教育モデル・コアカリキュラム一般目標】A 全学年を通して：ヒューマニズムについて学ぶ A(2)医療の担い手としてのこころ構え、C16 製剤化のサイエンス (3)DDS (Drug Delivery System: 薬物送達システム)、C17 医薬品の開発と生産(1)医薬品開発と生産の流れ、(3)バイオ医薬品とゲノム情報		
授業到達目標 / Goal	To understand the content of the scientific papers and find the relationship between scientific papers and own research. 薬学教育モデル・コアカリキュラム到達目標を含む項目：A-(2) 【研究活動に求められるこころ構え】、C16-(3) 【DDSの必要性】、【ターゲティング】、【その他のDDS】 C17-(1) 【医薬品市場と開発すべき医薬品】、C17-(3) 【遺伝子治療】		
授業方法 (学習指導法) / Method	Student summarizes the scientific papers, and discusses content with laboratory members.		
授業内容 / Class outline/Con	1st: Searching the scientific papers related to own research from Pubmed 2nd: Preparing a document for oral presentation 3rd: Oral presentation and discussion(1) 4th: Oral presentation and discussion(2) 5th: Oral presentation and discussion(3) 6th: Oral presentation and discussion(4) 7th: Oral presentation and discussion(5) 8th: Oral presentation and discussion(6) 9th: Oral presentation and discussion(7) 10th: Oral presentation and discussion(8) 11th: Oral presentation and discussion(9) 12th: Oral presentation and discussion(10) 13th: Oral presentation and discussion(11) 14th: Oral presentation and discussion(12) 15th: Oral presentation and discussion(13)		
キーワード / Key word	Pharmaceutical Informatics, Presentation Skill		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Ability of presentation (70%), Ability of discussion (30%)		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-24948 (E-mail) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks(URL)			

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D4	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmaceutical Informatics / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	川上 茂 / Kawakami Shigeru, 淵上 由貴 / Fuchigami Yuki, 萩森 政頼		
授業担当教員名 (科目責任者) / Professor in charge of the subject	川上 茂 / Kawakami Shigeru		
授業担当教員名 (オムニバス科目等) / Professor(s)	川上 茂 / Kawakami Shigeru, 淵上 由貴 / Fuchigami Yuki, 萩森 政頼		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	skawakam@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutical Informatics		
担当教員TEL / Tel	095-819-8563		
担当教員オフィスアワー / Office hours	9:00-17:00		
授業の概要及び位置づけ / Course Outline and Objectives	This course provides fundamental skills in organizing and presenting document on a particular topic regarding pharmaceutical informatics from scientific papers. 【薬学教育モデル・コアカリキュラム一般目標】 A 全学年を通して：ヒューマニズムについて学ぶ A(2)医療の担い手としてのこころ構え、C16 製剤化のサイエンス (3)DDS (Drug Delivery System: 薬物送達システム)、C17 医薬品の開発と生産(1)医薬品開発と生産の流れ、(3)バイオ医薬品とゲノム情報		
授業到達目標 / Goal	To understand the content of the scientific papers and find the relationship between scientific papers and own research. 薬学教育モデル・コアカリキュラム到達目標を含む項目：A-(2) 【研究活動に求められるこころ構え】、C16-(3) 【DDSの必要性】、【ターゲティング】、【その他のDDS】 C17-(1) 【医薬品市場と開発すべき医薬品】、C17-(3) 【遺伝子治療】		
授業方法 (学習指導法) / Method	Student summarizes the scientific papers, and discusses content with laboratory members.		
授業内容 / Class outline / Con	1st: Searching the scientific papers related to own research from Pubmed 2nd: Preparing a document for oral presentation 3rd: Oral presentation and discussion(1) 4th: Oral presentation and discussion(2) 5th: Oral presentation and discussion(3) 6th: Oral presentation and discussion(4) 7th: Oral presentation and discussion(5) 8th: Oral presentation and discussion(6) 9th: Oral presentation and discussion(7) 10th: Oral presentation and discussion(8) 11th: Oral presentation and discussion(9) 12th: Oral presentation and discussion(10) 13th: Oral presentation and discussion(11) 14th: Oral presentation and discussion(12) 15th: Oral presentation and discussion(13)		
キーワード / Key word	Pharmaceutical Informatics, Presentation Skill		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book			
成績評価の方法・基準等 / Evaluation	Ability of presentation (70%), Ability of discussion (30%)		
受講要件 (履修条件) / Requirements	None		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-24948 (E-mail) support@ml.nagasaki-u.ac.jp		

備考 (URL) /Remarks(URL)	
学生へのメッセージ/Message for students	None

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	4.0
時間割コード / Time schedule code	201655082000B5	科目番号 / Subject code	55082000
科目ナンバリングコード / Numbering Code	BMMP66812796		
授業科目名 / Subject	Exercise Biomedical Sciences : Pharmaceutics / Exercise Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	西田 孝洋 / Nishida Koyo, 麓 伸太郎 / Fumoto Shintaro, 宮元 敬天 / Hiroataka Miyamoto		
授業担当教員名 (科目責任者) / Professor in charge of the subject	西田 孝洋 / Nishida Koyo		
授業担当教員名 (オムニバス科目等) / Professor(s)	西田 孝洋 / Nishida Koyo, 麓 伸太郎 / Fumoto Shintaro, 宮元 敬天 / Hiroataka Miyamoto		
科目分類 / Class type	Exercise Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	演習 / Seminar
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	koyo-n@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutics		
担当教員TEL/Tel	095-819-8566		
担当教員オフィスアワー / Office hours	Thursday and Friday 16:00-18:00 (LACSで予定を確認すること), Accept any question by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	Aim/ The aim of this subject is to acquire abilities to understand scientific paper(s), summarize background, method and results, and make a presentation of the paper(s).		
授業到達目標 / Goal	Goal/ To acquire abilities for objective critique and creative research, students should precisely understand positioning of findings in scientific papers at the area of relevant study, be able to point out problems to be elucidated, and consider concrete solution.		
授業方法 (学習指導法) / Method	Method/ Searching and understanding scientific papers, questions and answers.		
授業内容 / Class outline/Con	Understanding scientific papers written in English. By making a presentation of the papers, students can obtain recent information and acquire the ability to use scientific		
キーワード / Key word	Searching scientific papers		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals written in English		
成績評価の方法・基準等 / Evaluation	Ability to understand scientific papers 50% Ability for questions and answers 50%		
受講要件 (履修条件) / Requirements	none		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks(URL)	http://www.ph.nagasaki-u.ac.jp/		
学生へのメッセージ / Message for students	Preparation studies for reading scientific papers and replying to questions are required.		
授業計画詳細 / Course Schedule	授業内容 / Contents		
回(日時) / Time(date and time)			
1st	Attending a lecture for database and searching method of scientific papers.		
2nd	Attending a lecture how to read experimental methods, results and discussion.		
3rd	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (1)		

4th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (2)
5th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (3)
6th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (4)
7th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (5)
8th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (6)
9th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (7)
10th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (8)
11th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (9)
12th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (10)
13th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (11)
14th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (12)
15th	Selecting a scientific paper, making a presentation of summary of the study, and replying to questions (13)

学期 / Semester	2016年度 / Academic Year 2年通年 / Two years whole year	曜日・校時 / Day・Period	他 / Others 0
開講期間 / Class period	2016/09/27~2018/9/30		
必修選択 / Required/Elective class	必修 / required	単位数(一般/編入/留学) / Credits (general/admission/overseas)	16.0
時間割コード / Time schedule code	201655082010D5	科目番号 / Subject code	55082010
科目ナンバリングコード / Numbering Code	BMMP66912796		
授業科目名 / Subject	Experiment Biomedical Sciences : Pharmaceutics / Experiment Biomedical Sciences		
編集担当教員 / Professor in charge of putting together the course syllabus	西田 孝洋 / Nishida Koyo, 麓 伸太郎 / Fumoto Shintaro		
授業担当教員名 (科目責任者) / Professor in charge of the subject	西田 孝洋 / Nishida Koyo		
授業担当教員名 (オムニバス科目等) / Professor(s)	西田 孝洋 / Nishida Koyo, 麓 伸太郎 / Fumoto Shintaro		
科目分類 / Class type	Experiment Biomedical Sciences		
対象年次 / Year	1, 2	講義形態 / Class Form	実験 / Experiment
教室 / Class room	〔薬学〕各担当教員研究室 / Laboratory		
対象学生 (クラス等) / Object Student	Master course		
担当教員Eメールアドレス / E-mail address	koyo-n@nagasaki-u.ac.jp		
担当教員研究室 / Laboratory	Pharmaceutics		
担当教員TEL / Tel	095-819-8566		
担当教員オフィスアワー / Office hours	Thursday and Friday 16:00-18:00 (LACSで予定を確認すること), Accept any question by e-mail		
授業の概要及び位置づけ / Course Outline and Objectives	Aim/ It is required for researchers in the clinical pharmacy to develop novel drug delivery system delivering drugs to specific target site. Researchers also should individually resolve problems of the research. The aim of this subject is to acquire these abilities through experiments and discussion.		
授業到達目標 / Goal	Goal/ The goal of this subject is to develop administration methods and formulations for delivering drugs to specific organ. Student will report findings in academic conference and write scientific paper(s) for submitting to journal.		
授業方法 (学習指導法) / Method	Method/ Scheduling and performing experiments, Writing scientific papers.		
授業内容 / Class outline / Con	Students will experiment about drug delivery system delivering drugs to specific organ. For this purpose, absorption of drugs from organ surface, in vivo disposition of drugs, administration methods, administration preparations, species differences, animal scale-up, and formulations for future clinical application will be investigated.		
キーワード / Key word	DDS		
教科書・教材・参考書 / Textbook, Teaching material, and Reference book	Scientific journals written in English		
成績評価の方法・基準等 / Evaluation	50% writing paper, 50% experiment		
受講要件 (履修条件) / Requirements	Scientific English		
アクセシビリティ / Accessibility	In order to ensure equal educational opportunities for all students, Nagasaki University strives to remove societal barriers that may interfere with academic activities, and to provide reasonable accommodations as necessary and appropriate. If you have any questions or concerns regarding reasonable accommodations or other support in this class, please feel free to talk to the instructor (contact information above), or contact the Student Accessibility Office. Student Accessibility Office contact information (TEL) 095-819-2006 (FAX) 095-819-2948 (E-MAIL) support@ml.nagasaki-u.ac.jp		
備考 (URL) / Remarks (URL)	http://www.ph.nagasaki-u.ac.jp/		
学生へのメッセージ / Message for students	none		
授業計画詳細 / Course Schedule			
回 (日時) / Time (date and time)	授業内容 / Contents		
第1回	Study about recent researches in drug delivery system.		
第2回	Scheduling experiments. Comprehending unknown points by understanding published information.		

第3回	Deliberating administration methods for drug delivery system.
第4回	Deliberating administration preparations for drug delivery system.
第5回	Discussion of experimental plan on seminar of Department of Pharmaceutics.
第6回	Study about disposition of drugs after administration onto organ surface.
第7回	Study about experimental method utilizing glass-made cylindrical diffusion cell for investigation of absorption from organ surface.
第8回	Study about experimental condition (administration dose, volume) for organ surface application of drugs.
第9回	Study about formulations for administration of drugs onto organ surface.
第10回	Discussion of findings in midterm conference of Department of Pharmaceutics.
第11回	Study about formulations which are applicable for clinical use.
第12回	Study about species differences and animal scale-up.
第13回	Discussion of findings in final conference of Department of Pharmaceutics.
第14回	Writing draft in English.
第15回	Completing scientific paper and submitting it to a scientific journal.