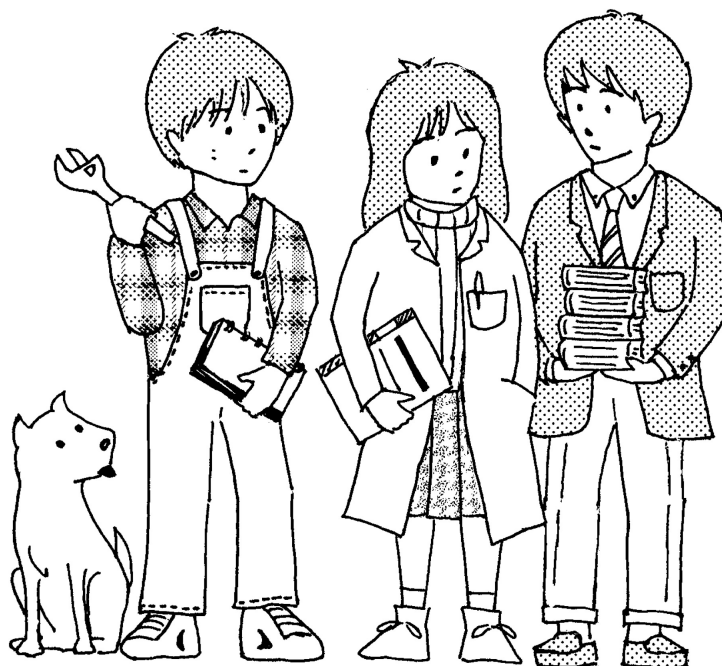


SYLLABUS

2012

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Kyoto University, Graduate School of Engineering

[A] Common Subjects of Graduate School of Engineering

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Internship

産学連携研究型インターンシップ

【Code】10i009 【Course Year】Master and Doctor Course 【Term】 【Class day & Period】 【Location】 【Credits】

【Restriction】 【Lecture Form(s)】 【Language】 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Exercise in Practical Scientific English

実践的科学英語演習「留学ノススメ」

【Code】10D040 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】 【Location】

【Credits】1 【Restriction】 【Lecture Form(s)】Seminar 【Language】English

【Instructor】Kim Sunmin, Kenji Wada. etc

【Course Description】 This course is designed to develop high-level communication and presentation skills in English required for top level scientific and industrial career prospects.

【Grading】 Attendance 60%, midterm reports 20%, final report 20%. The final report must be submitted by the deadline date.

【Course Goals】 This course is designed to develop high-level communication and presentation skills in English required for top level scientific and industrial career prospects.

【Course Topics】

Theme	Class number of times	Description
Introduction	2	Course Guidance, etc.
Exercise-1	1	Definition of technical writing 3C in technical writing Weaknesses of Japanese writers Good examples and bad examples
Exercise-2	1	Punctuation Presentation skills 1 -organization
Exercise-3	1	Organizing your thoughts for the title and abstract Presentation skills 2 ?Visual aspects
Exercise-4	1	Presenting the background of your research Presentation skills 3 ?Oral Aspects
Exercise-5	1	Describing how you did your research Presentation skills 4 ?Physical Aspects
Exercise-6	1	Presenting what you observed Presentation Practice
Exercise-7	1	Placing your findings in the field Presentation Practice
Exercise-8	1	Expressing thanks and listing references Presentation practice
Exercise-9	1	Writing your proposal Presentation practice
Exercise-10	1	Presentation practice Reviews & Feedbacks Evaluation
Presentation	2	Current situation of studying abroad, etc.
Wrap-up lecture	1	Achievement Assessment

【Textbook】 No textbook is required.

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.ehcc.kyoto-u.ac.jp/alc/> (needs passwords).

【Additional Information】 For details, contact Dr. Wada (wadaken@scl.kyoto-u.ac.jp).

Advanced Japanese

日本語上級講座

【Code】 10i029 【Course Year】 Master and Doctor Course 【Term】 1st+2nd term

【Class day & Period】 Fri 3rd 【Location】 B-Cluster 2F Seminar Room 【Credits】 2 【Restriction】 No Restriction

【Lecture Form(s)】 Lecture 【Language】 Japanese 【Instructor】 Lect. Sawanishi

【Course Description】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

Intermediate Japanese I

日本語中級講座

【Code】 10i031 【Course Year】 Master and Doctor Course 【Term】 1st+2nd term

【Class day & Period】 Fri 3rd

【Location】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Lect. Shimohashi

【Course Description】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

Intermediate Japanese II

日本語中級講座

【Code】 10i033 【Course Year】 Master and Doctor Course 【Term】 1st+2nd term

【Class day & Period】 Thu 3rd

【Location】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 Japanese

【Instructor】 Prof. Palihawadana Ruchira

【Course Description】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】 See "Course Descriptions of Japanese Language Classes and International Communication Classes" published by International Center Kyoto University.

<http://www.ryugaku.kyoto-u.ac.jp/japanese/japanese-classes/>

Business Japanese II

ビジネス日本語講座 II

【Code】 10i006 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day & Period】 Thu 3rd

【Location】 B-Cluster 3F Seminar Room A 【Credits】 2 【Restriction】 【Lecture Form(s)】 Lecture

【Language】 Japanese 【Instructor】 Lect. Kurihara

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	15	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Exercise in International Science and Technology Communication (English lecture)

科学技術国際コミュニケーション演習 (英語科目)

【Code】 10i007 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day & Period】 Tue 5th

【Location】 Seminar Room at Cluster B, Katsura campus 【Credits】 1

【Restriction】 The number of students might be limited if too many students will get enrolled. 【Lecture Form(s)】 Seminar and Exercise

【Language】 English 【Instructor】 Juha Lintuluoto

【Course Description】 This exercise offers a highly interactive science and technology communication course in English for all Engineering Graduate School students regardless on departments.

With the role of science and technology in society becoming increasingly important, there is a need for the next generation of engineers to develop enhanced scientific and technical communication skills. The present course offers learning fundamental communication skills, under the topics in two main areas: risk communication in industry and practices in scientific and technical communication.

The topic on risk communication in industry considers guidelines and techniques of risk communication from the industry's viewpoint. Each lesson contains interactive group work. As a final exercise, a simulated news conference concerning an industrial hazard explanation from the industry's perspective will be undertaken as a group work task.

The section on practices in scientific and technical communication will first briefly review the oral and written presentation rules and etiquette. This section also contains professional oral and written reporting exercises based on each student ' s own scientific background, as well as debating practices on relevant topics.

【Grading】 Students who want to get enrolled in this course are requested to attend on the first lecture of April 10th.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Part I: Risk Communication in Industry	Lect.1	Introduction & Effectively Communicating Risk Information
	Lect.2	Risk Communication: Actions vs. Words
	Lect.3	Guidelines for Presenting and Explaining Risk-Related Numbers and Statistics
	Lect.4	Guidelines for Providing and Explaining Risk Comparisons
	Lect.5	Concrete Examples of Risk Comparisons
	Lect.6&7	Simulated Conference about Industrial Hazard Explanation (Group Work)
Part II: Practices in Scientific and Technical Communication	Lect.1	Fundamental Technical and Scientific Communication Skills
	Lect.2	Student Presentations and Questioning I, Scientific Report I
	Lect.3	Student Presentations and Questioning I, Scientific Report I
	Lect.4	Debate I, Results and Analysis
	Lect.5	Debate II, Results and Analysis
	Lect.6	Student Presentations and Questioning II, Scientific Report II
	Lect.7	Student Presentations and Questioning II, Scientific Report II

【Textbook】 We will let you know, if necessary.

【Textbook(supplemental)】 We will let you know, if necessary.

【Prerequisite(s)】 Note:

-Highly interactive lessons (discussion), Small group working method

-This course is held in English.

【Web Sites】 None

【Additional Information】 The Graduate school of Engineering offers, this year, the course “ Exercise in International Science and Technology Communication ” for all graduate students as follows. Students who want to get enrolled in this course are requested to attend on the first lecture of April 10th.

This lecture contains intensive interactive group works in English, so the number of students might be limited if too many students will get enrolled.

Students are also requested to check in advance whether the credit of this course is counted as the unit for graduation requirement at department level.

Priority will be given for the foreign students of the Industry-Academic Global Engineering Human Resources Development Program, and the number of enrollment will be limited.

Introduction to Advanced Material Science and Technology (English lecture)

先端マテリアルサイエンス通論 (英語科目)

【Code】 10K001 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day & Period】 Friday,4th-5th

【Location】 KatsuraA2-308,Yoshida Research Bldg.No4,-Room3(Distance lectures) 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Relay Lecture 【Language】 English 【Instructor】

【Course Description】 The various technologies used in the field of material science serve as bases for so-called "high technologies", and, in turn, the high technologies develop material science. These relate to each other very closely and contribute to the development of modern industries. In this class, recent progresses in material science are briefly introduced, along with selected current topics on new biomaterials, nuclear engineering materials, new metal materials and natural raw materials. The methods of material analysis and future developments in material science are also discussed.

【Grading】 In order to obtain two credits, students must attend at least ten lectures, and at least five of the submitted reports must be evaluated as " passed " by each lecturer. Each report should be submitted to the lecturer within two weeks after his/her lecture. NOTE: Reports are NOT acceptable from those who do not attend the lecture.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	2	Hyperthermophiles and their thermostable biomolecules H. Atomi
	1	Microreactor Technology for Production of High Functional Chemical Materials K.Mae
	2	Advanced Beam Processes and Characterization Technique for Nanotechnology J.Matsuo
	2	Chemical vapor deposition - Synthesis of advanced materials from gas phase M.Kawase
	1	Nanostructure Control in Structural Metallic Materials N.Tsuji
	1	Nano-optical Spectroscopy/Microscopy:Applications in Material Science H.Aoki
	1	Photonic Materials K.Hirao
	1	ISO Standards in Analytical Chemistry J. Kawai
	1	Electrodeposition and Electroless Deposition for Materials Processing K. Murase
	2	Bio-inspired Biomaterials H.Akiyoshi
		Confirmation of study achievement

【Textbook】 None

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】 Check the notice on the bulletin board.

New Engineering Materials, Adv. (English lecture)

新工業素材特論 (英語科目)

【Code】 10K004 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day & Period】 Thu 5th

【Location】 KatsuraA2-308, Yoshida Research Bldg.No4,-Room3(Distance lectures) 【Credits】 2

【Restriction】 No Restriction 【Lecture Form(s)】 Relay Lecture 【Language】 English 【Instructor】

【Course Description】 Outline: New materials are necessary for the advancement of high technologies, but in order to develop these new materials for practical applications, a number of problems must be solved. In this course, the problems encountered in the fields of chemical engineering, electrical / electronic engineering, mechanical engineering and civil engineering are discussed. Discussions are also held on natural resources, and how computers are being used in the development of new materials. Lectures are given in English.

【Grading】 Credit: The evaluation of a student ' s work will be given on a pass / fail basis, based on his / her attendance and reports, not on examinations.(1) Attending the class 10 times or more and submitting at least 5 reports with passing marks is required to receive 2 credits.(2) A report assignment will be given by every lecturer and must be submitted within 2 weeks from the end of the lecture.(3) A student ' s report on any lecture from which he / she is absent will not be accepted.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	15	

【Textbook】

【Textbook(supplemental)】 Class handouts

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Professional Scientific Presentation Exercises (English lecture)

科学技術者のためのプレゼンテーション演習 (英語科目)

【Code】 10i041 【Course Year】 Doctor Course 【Term】 1st term 【Class day & Period】 Wed 5th

【Location】 B-Cluster 2F Seminar Room 【Credits】 1

【Restriction】 The number of students might be limited if too many students will get enrolled.

【Lecture Form(s)】 Seminar 【Language】 English 【Instructor】 Juha Lintuluoto

【Course Description】 It is imperative for future engineers to be able to communicate and deliver effectively scientific information to large variety of audiences. This skill enables engineers to share and absorb information to more extended audiences, and facilitates success in selling ideas and products, publishing and team working. The purpose of this course is to teach the basic rules needed for successful professional scientific presentation, both orally and written. The course also prepares students to deliver scientific information presentations to wide audiences. The course is consisted of excessive exercises, of which the student should complete seven (7) tasks. The course holds 3-4 tasks for oral presentation exercises, and 3-4 tasks for professional scientific writing exercises. The exact number of both exercises is adjusted for each student ' s needs. The course is aimed for doctor course (DC) students, both Japanese and Foreign nationals

【Grading】 Reports, class activity, presentation

【Course Goals】 This course is aimed to foster engineering students ' scientific presentation skills. The successfully course completed students will be able to express and present complicated and specific scientific information at more generally understandable level. The students will also be able to pose relevant questions and effectively answer to the wide variety of questions.

【Course Topics】

Theme	Class number of times	Description
		Guidance and Professional presentation rules and etiquette
		Oral presentations & questioning I, Written report I
		Oral presentations & questioning I, Written report I
		Oral presentations & questioning II, Written report II
		Oral presentations & questioning II, Written report II
		Oral presentations & questioning III, Written report III
		Oral presentations & questioning III, Written report III
		Oral presentations & questioning IV, Written report IV
		Oral presentations & questioning IV, Written report IV I
		Course summary and discussion

【Textbook】 Course materials will be provided.

【Textbook(supplemental)】 Will be informed if necessary.

【Prerequisite(s)】 -Fundamental skills about scientific presentation

-Advanced English skills

-Sufficient personal research results

【Web Sites】 The web-site will be opened in the home page of the GL education center.

【Additional Information】 Students are requested to check in advance whether the credit of this course is counted as the unit for graduation requirement at department level. Course starts at April 25th. Students are requested to register on this course before April 20th. The course schedule is irregular. Most classes are biweekly, the detailed schedule is provided at the 1st lecture.

Advanced Engineering and Economy (English lecture)

工学と経済 (上級)(英語科目)

【Code】10i042 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Tue 5th 【Location】B-Cluster 2F Seminar Room

【Credits】2 【Restriction】The number of students might be limited if too many students will get enrolled. 【Lecture Form(s)】Lectures, Seminar

【Language】English 【Instructor】Juha Lintuluoto

【Course Description】Engineering economics plays central role in any industrial engineering project. For an engineer, it is important to apply the engineering know-how with the economic analysis skills to obtain the best available materials, methods, devices, etc. in the most economical way. This course is aimed to teach engineering students the basic economic methods to manage economically an engineering project. In addition, the report writing on various engineering economic issues prepares to write reports in a professional form. The lab sessions are meant for the verbal skills improvement as well as improvement of analytical thinking. The topics are of current relevant topics Small-group brain-storming method is used. The exercise sessions cover the use of Ms-Excel for various quantitative economic analyses.

【Grading】Final test, reports, class activity

【Course Goals】This course is aimed to strengthen engineering students' skills in economics. The course concept is to teach students selectively those subjects which serve as major tools to solve economic tasks in engineering environment. The reports and lab sessions provide students stimulating and analytical thinking requiring tasks, and presentation skills training is an important part of this course.

【Course Topics】

Theme	Class number of times	Description
Student orientation and Introduction to engineering economy	1	
Cost concepts and design economics	1	
Cost estimation techniques	1	
The time value of money	1	
Evaluating a single project	1	
Comparison and selection among alternatives	1	
Depreciation and income taxes	1	
Price changes and exchange rates	1	
Replacement analysis	1	
Evaluating projects with the benefit-cost ratio method	1	
Breakeven and sensitivity analysis	1	
Probabilistic risk analysis	1	
The capital budgeting process	1	
Decision making considering multiattributes	1	
Final test	1	

Additionally, students will submit five reports during the course on given engineering economy subjects. Also, required are the five lab participations (ca.60 min/each) for each student. Additionally, three exercise sessions (ca.60 min/each), where use of Ms-Excel will be practiced for solving various engineering economy tasks, should be completed

【Textbook】Engineering Economy 15th ed. William G. Sullivan (2011)

【Textbook(supplemental)】Will be informed if necessary.

【Prerequisite(s)】-This course is highly recommended for those who attend " Inter-Engineering -Highly interactive lessons (discussion), Small group working method

【Web Sites】The web-site will be opened in the home page of the GL education center.

【Additional Information】Students are requested to check in advance whether the credits of this course are counted as the units for graduation requirement at department level.

Leadership and Communication in Multi-Cultural Project (English lecture)

プロジェクト演習のためのリーダーシップとコミュニケーション (英語科目)

【Code】 10i043 【Course Year】 Doctor Course 【Term】 1st term 【Class day & Period】 Fri 5th

【Location】 B-Cluster 2F Seminar Room 【Credits】 1

【Restriction】 The number of students might be limited if too many students will get enrolled.

【Lecture Form(s)】 Lectures, Seminar 【Language】 English 【Instructor】 Lintuluoto, Nokami, Kojima

【Course Description】 The purpose of this course is to teach the basic skills needed for expressing and initiating ideas, and presenting information in successful international engineering group work. The course provides simulations for students in group managing and decision making in international engineering teams. International teamwork ethics subjects for successful engineering project will be practiced. The course consists of lectures, case studies, the invited lecture from an industry representative and the final examination. Also, a project report exercise is included in this course.

The course is basically designed for doctor course (DC) students, both Japanese and foreign nationals. If place are available they may be given to master course students.

【Grading】 Report, class activity, presentation

【Course Goals】 This course is the prerequisite course for Inter-Engineering Projects which will be held in the second semester. Students will learn project management tool use, apply project strategies and perform qualitative risk analyses. Also students will learn how to carry out projects with group members from various countries and engineering fields.

【Course Topics】

Theme	Class number of times	Description
	1	Introduction of the class (All)
	1	Project Management I (Lintuluoto)
	1	Project Management II (Lintuluoto)
	1	Ethics in group work (Nokami)
	1	Case study I: Ethics in group work (Nokami with assistant)
	1	Case study II: Engineering project communication (Lintuluoto)
	1	Leadership skills in group work (Kojima)
	1	Case study III (Kojima with assistant)
	1	Cultural aspects in project development (Lintuluoto)
	1	Ethics in project development (Nokami)
	1	Case study V: Ethics in project development (Nokami with assistant)
	1	Leadership skills in projects (Kojima)
	1	Case study VI (Kojima with assistant)
	1	Special Lecture from an Industry Representative
	1	Final examination

【Textbook】 Course materials will be provided.

【Textbook(supplemental)】 Will be informed if necessary.

【Prerequisite(s)】 ‘ -This course is a prerequisite for those who later intend to attend “ Inter-Engineering Project ” .
-Highly interactive lessons (discussion), Small group work methodologies.

【Web Sites】 The web-site will be opened in the home page of the GL education center.

【Additional Information】 Students are requested to check in advance whether the credit from this course will be accepted as a graduation requirement for their department.

Inter-Engineering Project (English lecture)

インターエンジニアリングプロジェクト演習 (英語科目)

【Code】 10i044 【Course Year】 Doctor Course 【Term】 2nd term 【Class day & Period】 Fri 5th
 【Location】 B-Cluster 2F Seminar Room 【Credits】 1 【Restriction】 Student number will be limited.
 【Lecture Form(s)】 Seminar 【Language】 English 【Instructor】 Lintuluoto , Nokami , Kojima , Kim
 【Course Description】 In this course, students will apply the engineering know-how and the skills of management, group leadership, and international communication which they learned in the course of "Leadership and Communication in Multi-Cultural Project" to build and carry out a virtual inter-engineering project. This course provides a forum where students' team-plan based on ideas and theories, decision making, and leadership should produce realistic engineering project outcomes. The course consists of intensive group work and a few intermediate discussions. The course will be held 6 weeks for group work, and two (2) intermediate discussions, project presentation to a wide audience, and a written report will be required.

【Grading】 Report, class activity, presentation

【Course Goals】 This course prepares engineering students to work with other engineers within a large international engineering project. In particular this course will focus on leadership and management of projects along with applied engineering skills where the students learn various compromises, co-operation, responsibility, and ethics.

【Course Topics】

Theme	Class number of times	Description
Guidance		
Group work I		
Group work II		
Intermediate discussion I		
Group work III		
Group work IV		
Intermediate discussion II		
Group work V		
Group work VI		
Project presentation and discussion		
		Each project team may freely schedule the group work within the given time frame. In addition to " Intermediate discussion " sessions, the course instructors are available if any such need arises.

【Textbook】 Course materials will be provided.

【Textbook(supplemental)】 Will be informed if necessary.

【Prerequisite(s)】 -Complete the course " Leadership and Communication in Multi-Cultural Project " in the 1st term.

-Attendance at " Advanced Engineering Economics " course is strongly recommended.

-Fundamental skills about group leading and communication, scientific presentation.

【Web Sites】 The web-site will be opened in the home page of the GL education center.

【Additional Information】 Students are requested to check in advance whether the credit from this course will be accepted as a graduation requirement for their department.

Structural Stability

構造安定論

【Code】10F067 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Mon 2nd
 【Location】C1-171 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】English
 【Instructor】Hiromichi SHIRATO, Kunitomo SUGIURA

【Course Description】Fundamental concept of static and dynamic stability of large-scale structures such as bridges is to be introduced in addition to the way to keep/improve their safety and to evaluate their performance. Basic concept of structural stability and its application and technical subjects to improve safety will be lectured systematically. Furthermore, the practical solutions to the subjects are to be introduced to assure the safety of structures.

【Grading】Grading will be evaluated by written examination, reports and attendance.

【Course Goals】The class aims to cultivate the understanding of static and dynamic stability problems for structural system and make understand the methodology to clarify the limit state. To get knowledge on countermeasures to assure the stability which is applicable to practical design and manufacturing will be also required.

【Course Topics】

Theme	Class number of times	Description
Elastic Stability under Static Loading	7	Stability of Structures and Failures Basis of Structural Stability Elastic Buckling of Columns Elastic Buckling of Beams & Frames Elastic Buckling of Plates Elasto-plastic Buckling Buckling Analysis
Basic theory of dynamic stability and its application	7	The stability around the equilibrium points based on the state equation of motion in which the nonlinearity of external, damping and restrung forces are taken into account. Wind-induced vibration of a square prism (Galopping) and 1dof system with nonlinear spring will be introduced as practical examples. Chaotic motion of a pendulum subjected to periodic external force is also explained as an introduction of chaos theory.
Achievement Check	1	Summary and Achievement Check.

【Textbook】Not specified.

【Textbook(supplemental)】Introduced in class if necessary.

【Prerequisite(s)】It is desired for participants to master structural mechanics, continuum mechanics, mathematical analysis as well as vibration theory.

【Web Sites】none

【Additional Information】none

Computational Mechanics and Simulation

計算力学及びシミュレーション

【Code】 10K008 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day & Period】 Tue 2nd

【Location】 C1-173 【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture and Exercises

【Language】 English 【Instructor】 Gotoh, Murata, Furukawa, Liang

【Course Description】 The process to obtain numerical solutions for various problems in computational mechanics. Discretization and some solving technique for initial/boundary value problems is to be introduced by the FEM, FDM, VM and PM with programming exercises. Statistical mechanics, molecular dynamics, Monte Carlo method and Multiple scale model will be shortly introduced in order to understand the basic theory of molecular dynamics simulation. Their application to engineering problems are to be also given by showing some up-to-date examples. Theory of the distinct element method (DEM) will be lectured, and its application in the engineering field will also be explained. Current technology of the particle method by is to be explained on the violent flow phenomena with free surface. The particular subjects in PM such as momentum conservation and convection of pressure disturbance by numerical instability, etc. will be introduced. This course will be given in English.

【Grading】 Achievement is evaluated by submitted reports to each topic.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Homogenization technique and FEM	4	Homogenization method with FEM will be lectured in this item. It is used for obtaining the equivalent homogenized material constants of an anisotropic composite material to be analyzed. The method to obtain homogenized elastic coefficient tensor will be especially focused on.
Molecular dynamics simulation	4	Statistical mechanics, molecular dynamics, Monte Carlo method and Multiple scale model will be shortly introduced in order to understand the basic theory of molecular dynamics simulation. Their application to engineering problems are to be also given by showing some up-to-date examples.
Distinct element method and its application	4	Theory of the distinct element method (DEM) will be lectured in this item. The DEM is the numerical analysis method for discontinuum. The application of the DEM in the engineering field will also be explained.
Free surface flow analysis by particle method	3	Current technology of the particle method by is to be explained on the violent flow phenomena with free surface. The particular subjects in PM such as momentum conservation and convection of pressure disturbance by numerical instability, etc. will be introduced.

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Computational Geotechnics

計算地盤工学

【Code】10K016 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Fri 2nd

【Location】C1-172 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】 【Language】English 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	<small>Class number of times</small>	Description
	1	
	1	
	1	
	4	
	2	
	1	
	4	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Public Finance

公共財政論

【Code】10F203 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Mon 3rd

【Location】C1-173 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】English

【Instructor】Kobayashi, Matsushima

【Course Description】The concept of public finance will be taught based upon the framework of Macro economics.

【Grading】Final Exam: 60-70%

Mid-term Exam and Attendance: 30-40%

【Course Goals】Understand the concept of public finance

【Course Topics】

Theme	Class number of times	Description
Introduction	1	
GNP and Social Accounting	2	
AD-AS Model	3	
IS-LM Model	2	
Monetary Policies	2	
International Economics	2	
Economic Growth Model	2	
Summary	1	Summarize classes and check whether students could understand them.

【Textbook】

【Textbook(supplemental)】Dornbusch et al., Macroeconomics 10th edition, Mcgrow-hill, 2008

【Prerequisite(s)】Basic Microeconomics

【Web Sites】will be notified in the first class.

【Additional Information】

Risk Management Theory

リスクマネジメント論

【Code】 10F223 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day & Period】 Wed 3rd
 【Location】 C1-173 【Credits】 2 【Restriction】 【Lecture Form(s)】 Lecture and exercise 【Language】 English
 【Instructor】 Muneta Yokomatsu

【Course Description】 The aim of the class is to provide the basic knowledge of risk management methods for various types of risks such as natural disaster, environment and natural resources in urban and rural areas. Students will learn the decision making principle under risks in Economics and asset pricing methods in Financial Engineering as well as have exercises of application on public project problems.

【Grading】 20% of score is valued on attendance and discussion in classes, and 80% on reports.

【Course Goals】 It is targeted to understand 1) representative concepts of risk and risk management process, 2) expected utility theory and 3) foundation of Financial Engineering, and examine 4) public project problems by applying the above knowledge.

【Course Topics】

Theme	<small>Class number of times</small>	Description
Basic framework of risk management	2	1-1 Representative concept of risk 1-2 Risk management technologies
Decision making theory under risks	3	2-1 The Bayes' theorem 2-2 The Expected utility theory
Financial engineering	6	3-1 The Capital Asset Pricing Model 3-2 Option pricing theory 3-3 The arbitrage theorem 3-4 The Black-Scholes formula
Decision making methods for projects	3	4-1 The decision tree analysis 4-2 The real option approach
Comprehension check	1	5 Comprehension check

【Textbook】

【Textbook(supplemental)】 1.Ross, S.M.: An Elementary Introduction To Mathematical Finance, Cambridge University Press, 1999

2.Sullivan W.G.: Engineering Economy, Pearson, 2012

【Prerequisite(s)】 Fundamental understanding of probability

【Web Sites】**【Additional Information】**

Earthquake Engineering/Lifeline Engineering

地震・ライフライン工学

【Code】10F261 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Tue 4th

【Location】C1-191 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】English

【Instructor】Kiyono, Koike (T), Igarashi

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	2	
	1	
	1	
	1	
Principles of seismic design of structures	2	Fundamental theories on dynamic response of nonlinear elastoplastic structural systems and representative seismic design principles
Seismic performance of concrete and steel structures	1	Essentials and current issues related to seismic design of RC and steel structures
Seismic response control and seismic retrofit of structures	1	Idea and current issues on seismic isolation, seismic response control techniques for enhancement of seismic performance of structures, and seismic retrofit and rehabilitation of existing structures
	1	
	2	
	1	
	1	
Achievement evaluation	1	Students' achievements in understanding of the course material are evaluated.

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

New Environmental Engineering II, Advanced

新環境工学特論 II

【Code】10F458 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Mon 5th

【Location】Reserch Bldg.No.5-Lecture Room(2nd floor)/C1-171 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture

【Language】English 【Instructor】Prof. Matsuoka, Prof. Shimidzu, Associate Prof. Takaoka, Associate Prof. Kurata, Prof. Fujii

【Course Description】This course provides various kinds of engineering issues related to atmospheric environment and solid wastes management in English, which cover fundamental knowledge, the latest technologies and regional application examples. These lectures, English presentations by students, and discussions enhance English capability and internationality of students. The course is conducted in simultaneous distance-learning from Kyoto University, or from remote lecture stations in University of Malaya, and Tsinghua University. For the distance-learning, a hybrid system is used, which consists of prerecorded lecture VIDEO, VCS (Video conference system) and SS (slide sharing system). The students are requested to give a short presentation in English in the end of the lecture course. This course may improve students' English skill and international senses through these lectures, presentations, and discussions.

【Grading】Evaluate by class attendance, Q&A and presentation.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Global warming and Low carbon society	1.4	Global warming and Low carbon society (Matsuoka)
Atmospheric diffusion and modeling	1.4	Atmospheric diffusion and modeling (Prof. S Wang, Tsinghua University)
Air Pollution, Its Historical Perspective from Asian Countries (I),China	1.4	Air Pollution, Its Historical Perspective from Asian Countries (I),China (Prof. Hao, Tsinghua University)
Air Pollution, Its Historical Perspective from Asian Countries (II), Malaysia	1.4	Air Pollution, Its Historical Perspective from Asian Countries (II), Malaysia (Prof. Nik, University of Malaya)
Air Pollution, Its Historical Perspective from Asian Countries (III), Japan	1.4	Air Pollution, Its Historical Perspective from Asian Countries (III), Japan (Kurata)
Student Presentations /Discussions I	1.4	Student Presentations /Discussions I (all)
Introduction to Municipal Solid Waste (MSW) Management in Malaysia	1.4	Introduction to Municipal Solid Waste (MSW) Management in Malaysia (Prof. Agamuthu, University of Malaya)
Solid Waste Management, Case Study in China	1.4	Solid Waste Management, Case Study in China (Prof. Wang, Tsinghua University)
Solid Waste Management, Case Study in Japan	1.4	Solid Waste Management, Case Study in Japan (Takaoka)
Solid Waste Management, Case Study in Malaysia	1.4	Solid Waste Management, Case Study in Malaysia (Prof. Agamuthu, University of Malaya)
Student Presentations /Discussions II	1	Student Presentations /Discussions II (all)

【Textbook】Class handouts

【Textbook(supplemental)】Introduce in the lecture classes

【Prerequisite(s)】

【Web Sites】

【Additional Information】Either of this course or “ New Environmental Engineering I, advanced ” can be dealt as “ Asian Environmental Enigneering ” . PowerPoint slides are main teaching materials in the lectures, and their hard copies are distributed to the students. In addition, a list of technical terms and difficult English words is given to the students with their explanation and Japanese translation.

Architecture Communication

建築学コミュニケーション（専門英語）

【Code】10i017 【Course Year】Master 1st 【Term】1st term 【Class day & Period】Wed 4th

【Location】C2-102 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】English

【Instructor】,,,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	4	
	1	
	1	
	2	
	1	
	2	
	1	
	2	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Microsystem Engineering

マイクロシステム工学

【Code】 10G205 【Course Year】 Master Course 【Term】 2nd term 【Class day & Period】 Mon 3rd

【Location】 Engineering Science Depts Bldg.-216 【Credits】 2 【Restriction】 【Lecture Form(s)】 Lecture

【Language】 English 【Instructor】 O. Tabata, H. Kotera, T. Tsuchiya, R. Yokokawa

【Course Description】 Microsystem covers not only technologies related to individual physical or chemical phenomenon in micro scale, but also complex phenomena which are evolved from their interaction. In this course, the physics and chemistry in micro and nanoscale will be lectured in contrast to those in macro scale. The various kinds of application devices (ex. physical (pressure, flow, force) sensors, chemical sensors, biosensors, actuators (piezoelectric, electrostatic, and shape memory) and their system are discussed.

【Grading】 The evaluation will be based on the reports given in each lecture.

【Course Goals】 Understand the theory of sensing and actuating in microsystem. Acquire basic knowledge to handle various kinds of phenomena in microscale.

【Course Topics】

Theme	Class number of times	Description
MEMS modeling	2	Multi-physics modeling in microscale. Electro-mechanical coupling analysis.
MEMS simulation	2	System level simulation in MEMS.
Electrostatic microsystem	3	Electrostatic sensors and actuators. Theory and application devices.
Physical sensors	4	Physical sensors as a fundamental application in microsystem. Accelerometer, vibrating gyroscope, pressure sensors.
Micro total analysis system	4	Chemical analysis system and bio-sensing device using microsystem.

【Textbook】 Provided in the lecture.

【Textbook(supplemental)】 Provided in the lecture.

【Prerequisite(s)】 Students are required to take the 10G203 course "Micro Process and Material Engineering".

【Web Sites】

【Additional Information】 The student of this class is strongly recommended to take a course 10V201 "Introduction to the Design and Implementation of Micro-Systems", which is a practice for designing microsystem. Those who wants to take this course, please contact one of the instructors as early as possible.

Advanced Mechanical Engineering

先端機械システム学通論

【Code】 10K013 【Course Year】 Master and Doctor Course 【Term】 2nd term

【Class day & Period】 Tue 5th and Thu 4th 【Location】 Engineering Science Depts Bldg.-213 or a teacher's office

【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 English 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	2	
	2	
	2	
	2	
	2	
	2	
	2	
	2	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Fundamentals of Magnetohydrodynamics

基礎電磁流体力学

【Code】 10C076 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day & Period】 Thu 2nd

【Location】 Bldg.No.1-Nuclear Engineering 2 【Credits】 2 【Restriction】 No Restriction

【Lecture Form(s)】 English Lecture 【Language】 English 【Instructor】 Tomoaki Kunugi, Atsushi Fukuyama

【Course Description】 This course provides fundamentals of magnetohydrodynamics which describes the dynamics of electrically conducting fluids, such as plasmas and liquid metals. The course covers the fundamental equations in magnetohydrodynamics, dynamics and heat transfer of magnetofluid in a magnetic field, equilibrium and stability of magnetized plasmas, as well as illustrative examples.

【Grading】 Attendance and two reports

【Course Goals】 The students can understand fundamentals of magnetohydrodynamics which describes the dynamics of electrically conducting fluids, such as plasmas and liquid metals. Moreover, the students will figure out the applications of magnetohydrodynamics to the various science and engineering fields.

【Course Topics】

Theme	Class number of times	Description
Liquid Metal MHD	7	1. Introduction and Overview of Magnetohydrodynamics 2. Governing Equations of Electrodynamics and Fluid Dynamics 3. Turbulence and Its Modeling 4. Dynamics at Low Magnetic Reynolds Numbers 5. Glimpse at MHD Turbulence & Natural Convection under B field 6. Boundary Layers of MHD Duct Flows 7. MHD Turbulence at Low and High Magnetic Reynolds Numbers
Plasma MHD	8	1. Introduction to Plasma MHD 2. Basic Equation of Plasma MHD 3. MHD Equilibrium 4. Axisymmetric MHD Equilibrium 5. Ideal MHD Instabilities 6. Resistive MHD Instabilities 7. MHD Waves in Plasmas 8. Student Assessment

【Textbook】 Handout of the presentation will be provided at the lecture

【Textbook(supplemental)】 P. A. Davidson, " An Introduction to Magnetohydrodynamics, " Cambridge texts in applied mathematics, Cambridge University Press, 2001

【Prerequisite(s)】 Fundamentals of fluid mechanics and electromagnetism

【Web Sites】

【Additional Information】

Computer Simulations of Electrodynamics

電磁界シミュレーション

【Code】 10C611 【Course Year】 Master 1st 【Term】 1st term 【Class day & Period】 Tue 5th

【Location】 A1-101/Electrical Engineering Bldg.-Lecture Room (M)/Uji Campus(Remote Lecture Room)

【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 English 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	<small>Class number of times</small>	Description
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Recent Advances in Electrical and Electronic Engineering

先端電気電子工学通論

【Code】 10K010 【Course Year】 Master and Doctor Course 【Term】 2nd term

【Class day & Period】 Tuesday, 5 【Location】 Laboratories 【Credits】 2 【Restriction】 Foreign students

【Lecture Form(s)】 Seminar 【Language】 English 【Instructor】

【Course Description】 The class consists of a series of seminars at 3 laboratories related to Department of Electrical and Electronic Engineering (energy and electrical machinery, computers, control and systems, communications and radio engineering, and electronic devices and applied physics). Each seminar intends to give a brief introduction into a specific research field so that students can get a feel for the state-of-the-art in each topic and broaden their scope beyond their majors.

【Grading】 The evaluation of a student ' s work is given based on his/her attendance, reports and discussions, not on examinations.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
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【Textbook】 None

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Chemical Engineering for Advanced Materials

先端物質化学工学

【Code】 10i027 【Course Year】 Master Course 【Term】 1st+2nd term 【Class day & Period】 Oct. 14, 21, 28, Nov. 4 10:30-18:00

【Location】 A2-305 【Credits】 2 【Restriction】 No Restriction 【Lecture Form(s)】 Lecture 【Language】 English

【Instructor】 Prof. Wiwut Tanthapanichakoon, PhD, Department of Chemical Engineering, Graduate School of Science & Engineering, Tokyo Institute of Technology

【Course Description】 The main objective of this 2-credit graduate course is to explain how (selected) advanced materials are designed, synthesized and/or processed (manufactured) in the research labs and certain high-tech industries, whilst pointing out the key roles played by Chemical Engineering in the relevant stages of developments.

【Grading】 Class attendance: 20 points Individual Presentation of Assigned Projects & Presentation Files: 40 points Full Individual Project Report: 40 points Total: 100 points There will be no examination. Individual topic assignment as well as the Format of oral presentation and report will be given on the first day of lectures.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
1. Chemistry of advanced materials		
2. Nanotechnology, nanomaterials, and nanoparticles		
3. The nanostructure of aerogels: Preparation, investigations, modifications, and utilizations		
4. Dispersion of fine silica particles using alkoxy silane and industrialization		
5. Carbon nanotubes in multifunctional polymer nanocomposites		
6. Development of polymer-clay nanocomposites by dispersion of particles into polymer materials		
7. Ceramic filter for trapping diesel particles		
8. Zeolite membrane		
9. Development of new cosmetics based on nanoparticles		
10. Development of functional skincare cosmetics using biodegradable PLGA nanospheres		

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】 Lecture hours: 15 x 90 minutes = 1,350 min. (The 4th Friday may end around 16:30 instead of 18:00)

Nuclear Engineering, Adv.

原子核工学最前線

【Code】10C084 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Thu 3rd

【Location】Bldg.No.1-Nuclear Engineering 2 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture

【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	11	
	3	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Advanced Seminar on Polymer Industry

高分子産業特論

【Code】10D638 【Course Year】Master Course 【Term】1st term 【Class day & Period】Fri 3rd and 4th

【Location】A2-306 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese

【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

Urban Transport Policy

都市交通政策フロンランナー講座

【Code】 10Z001 【Course Year】 Master and Doctor Course 【Term】 1st term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office (see the handbook for course registration) 【Credits】 1

【Restriction】see the handbook for course registration 【Lecture Form(s)】Intensive Lecture 【Language】Japanese

【Instructor】 Dai Nakagawa, Ryoji Matsunaka, JongJin Yoon, and Mitsuya Matsubara

【Course Description】 This class will provide lectures on the new transport policy carried out in domestic and foreign cities and to understand the difference between the conventional transport policy and the new urban transport policy. Also, it will cover a process to realize the new urban transport policy.

【Grading】 evaluation by attendance and class participation

【Course Goals】 to understand the difference between the conventional transport policy and the new urban transport policy

【Course Topics】

Theme	Class number of times	Description
Outline	1	
Front runner of urban transport policy in the world	2	Reallocation of road space, Pedestrianisation
Front runner of urban transport policy in Japan	1	Downtown activation, Strategies of sustainable transport for our cities, Climate change
Front runner of urban transport policy in Kyoto	1	Eco model city, Transport demand management, Public transport network
Discussion	1	
Basic concept and best practices of new urban transport policy	1	Community bus, Compact city
Presentation	1	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

Policy for Low-Carbon Society

低炭素都市圏政策論

【Code】 10Z002 【Course Year】 Master and Doctor Course 【Term】 1st term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office (see the handbook for course registration) 【Credits】 1

【Restriction】see the handbook for course registration 【Lecture Form(s)】Intensive Lecture 【Language】Japanese

【Instructor】 Dai Nakagawa, Eiichi Taniguchi, Masashi Kawasaki, Yasunaga Wakabayashi, Tsutomu Doi, JongJin Yoon, Mitsuya Matsubara

【Course Description】 This class will provide lectures on the contents of policies and the methods to realize a low carbon society. Also, it will cover the knowledge and the technical skill to relate to urban activation, reduction of the environmental load, compact city planning, and so on.

【Grading】 evaluation by attendance and class participation

【Course Goals】 to understand the knowledge and the technical skill to relate to urban activation, reduction of the environmental load, compact city planning, and so on.

【Course Topics】

Theme	Class number of times	Description
Outline	1	
Direction of urban policy for low-carbon society	1	Compact city, Interaction between land-use and transport
Urban policy management for low-carbon society	1	Eco model city, Guideline for low-carbon city construction
Landscape & environmental planning	1	Landscape design in public space, View structure
Downtown activation & urban policy for low-carbon society	1	Downtown activation, Compact city
Urban policy for low-carbon society and change of urban structure	1	Public transport, Pedestrianisation
City logistics	1	Logistics, Corporate social responsibility, Intelligent transport systems, Freight quality partnership
Discussion	1	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

Urban Transport Management

都市交通政策マネジメント

【Code】 10Z003 【Course Year】 Master and Doctor Course 【Term】 1st term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office (see the handbook for course registration) 【Credits】 1

【Restriction】see the handbook for course registration 【Lecture Form(s)】Intensive Lecture 【Language】Japanese

【Instructor】 Dai Nakagawa, Satoshi Fujii, Nobuhiro Uno, JongJin Yoon, Tetsuharu Oba, and Mitsuya Matsubara

【Course Description】 This class will provide lectures on characteristics and problems of transport modes such as car, public transport, and foot. Also, it will cover the technical skill to analyze present urban traffic problems quantitatively.

【Grading】 evaluation by attendance and class participation

【Course Goals】 to understand characteristics and problems of transport modes such as car, public transport, and foot.

【Course Topics】

Theme	Class number of times	Description
Outline	1	
Plan and practice of public transport	1	City activation and attractiveness, Public transport, Light rail transit, Bus
Basic concept of mobility management	1	Mobility management, Activation of the public transport, Downtown activation
Investigation, interpretation, and evaluation on urban traffic phenomenon	3	Person trip survey, Transportation demand management, Cost-benefit analysis
Exercise and discussion	2	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

Policy for Low-Carbon Society, Advanced.

低炭素都市圏政策特論

【Code】 10Z004 【Course Year】 Master and Doctor Course 【Term】 2nd term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office(see the handbook for course registration) 【Credits】 1

【Restriction】see the handbook for course registration 【Lecture Form(s)】Intensive Lecture 【Language】Japanese

【Instructor】 Kiyoshi Kobayashi

【Course Description】 This class will provide lectures on integrated policy packages of pricing, energy policy, urban land use as well as the contents of transport policy to realize a low carbon society. Also, it will cover current trends of various policies and technologies for a low carbon society.

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

Urban Transport Management, Advanced.

都市交通政策マネジメント特論

【Code】 10Z005 【Course Year】 Master and Doctor Course 【Term】 2nd term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office(see the handbook for course registration) 【Credits】 1

【Restriction】see the handbook for course registration 【Lecture Form(s)】Intensive Lecture 【Language】Japanese

【Instructor】 Dai Nakagawa, Ryoji Matsunaka, Satoshi Fujii, JongJin Yoon, and Mitsuya Matsubara

【Course Description】 This class will provide lectures on advanced technical skill to analyze present urban traffic problems quantitatively and evaluation methods of the policy. Also, it will cover the contents of transportation funding and consensus building, and so on.

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	
	1	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

Capstone Project Practice

キャップストーンプロジェクト演習

【Code】 10Z006 【Course Year】 Master and Doctor Course 【Term】 2nd term

【Class day & Period】 see the handbook for course registration

【Location】 conference room, UPL karasuma office(see the handbook for course registration) 【Credits】 1

【Restriction】 see the handbook for course registration 【Lecture Form(s)】 Seminar 【Language】 Japanese

【Instructor】 Dai Nakagawa, Ryoji Matsunaka, JongJin Yoon, and Mitsuya Matsubara

【Course Description】 A capstone is a finishing stone placed on the apex of a pyramid. This class will enable students to apply and integrate what they learn, and give them an opportunity to explore in greater depth, one or more of the topics covered in the courses.

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	2	
	1	
	3	
	1	

【Textbook】 No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】 <http://www.upl.kyoto-u.ac.jp/index.html>

【Additional Information】

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([A] Common Subjects of Graduate School of Engineering)
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