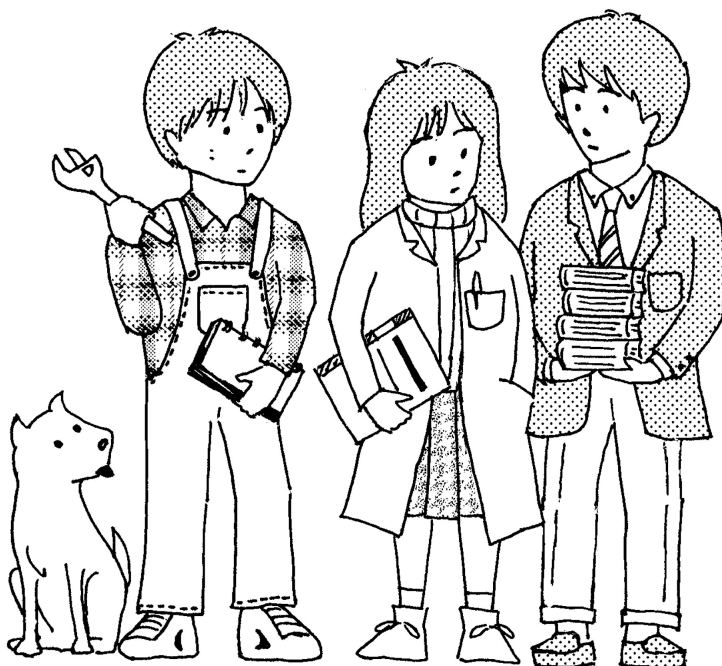


SYLLABUS

2015

[A] Common Subjects of Graduate School of Engineering



Kyoto University, Graduate School of Engineering

[A] Common Subjects of Graduate School of Engineering

Common Subject

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10D051

Frontiers in Modern Science & Technology

現代科学技術の巨人セミナー「知のひらめき」

【Code】10D051 【Course Year】Master and Doctor Course 【Term】 【Class day & Period】Wed 5th

【Location】Funai Hall 【Credits】 【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	
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	1	
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

【Additional Information】

Exercise in Practical Scientific English

実践的科学英語演習

【Code】10i045 【Course Year】Master and Doctor Course 【Term】1st term

【Class day & Period】Thu 4th or 5th 【Location】A2-304 【Credits】1

【Restriction】Up to twenty students for each class 【Lecture Form(s)】Seminar 【Language】Japanese and English

【Instructor】Y. Nakayama and M. Nishi

【Course Description】Students learn about the basics of technical writing in English, and learn about and practice the format, style, and mechanics of the scientific research article. Students will also develop skills needed to create and deliver an effective presentation in English. We may restrict the class size to enhance learning. The course is shared by Master ' s and Doctoral Course students.

【Grading】Students are required to submit an initial report and a mid-term report, and make a final presentation in English. Students failing to submit the mid-term report or to make a presentation will be given no credit.

【Course Goals】Students develop basic communication skills needed to work for international organizations through practicing scientific English writing as well as presenting their research in English.

【Course Topics】

Theme	Class number of times	Description
Course Outline and Introduction to Technical Writing	1	Students examine the aim and requirements of the course, and look at the key points for writing correctly, clearly, and concisely. (The class schedule may change without notice.)
Basics of Technical Writing	2	Students learn about the definition and basic rules for technical writing, and look at common mistakes made by non-native writers of English.
Japanese-to-English Translation Practice	2	Students learn about English grammar and practice revising their English writing.
Paragraphs	2	Students learn about paragraphs: the topic sentence and supporting sentences, and techniques for sequencing information in a paragraph.
Format of Research Articles	2	Students learn about the standard format of a research article: the title and abstract
Listening Practice	1	Students practice listening comprehension using videos presenting scientific and technical information.
Presentation Practice	3	Students learn and practice techniques for delivering an effective presentation, and experience asking and answering questions.
Online Learning	2	Writing Paragraphs

【Textbook】No text – all materials are supplied by the teachers.

【Textbook(supplemental)】Yukiko Nakayama, Gijutsu kei Eibun Raithingu Kyohon (Technical Writing Textbook), Japan Society for Technical Communication

Anne M. Coghill and Lorrin R. Garson, The ACS style guide, 3rd, The American Chemical Society

【Prerequisite(s)】Students need to have basic English skills at undergraduate level.

【Independent Study Outside of Class】

【Web Sites】<http://www.glc.t.kyoto-u.ac.jp/ja/study/grad/10d040>

【Additional Information】We may restrict the class size to enhance students ' learning. Students who intend to join the course are required to attend the first-day guidance.

Exercise in Practical Scientific English

实践的科学英语演習

【Code】10i046 【Course Year】Master and Doctor Course 【Term】2nd 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 October 7th.

【Course Goals】

【Course Topics】

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

【Independent Study Outside of Class】

【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 October 3rd.

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.

Advanced Modern Science and Technology (English lecture)

現代科学技術特論 (英語科目)

【Code】10K005 【Course Year】 【Term】2nd term 【Class day & Period】Thu 5th 【Location】A2-306 【Credits】2(Semester system), 1.5(Modified quarter system) 【Restriction】No Restriction

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

【Course Description】Engineering/Engineers have been expected to fulfill key roles among social issues and others, such as energy, environment and resource. This class introduces cutting edge science and technologies from their backgrounds, research and development, to problems for the practical applications. In addition to the understanding of each technology, the attendances learn the importance for engineers to have multidisciplinary mind and understand the significance of engineering to realize sustainable development. Group discussions will be done for further understanding of the topics of the course.

【Grading】Please go to KULASIS Web site. You can find an attachment file, " 通知版 : 2015 現代科学技術特論講義概要 ", where the term Credit will tell you the requirement.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Oct. 1 Kiyoshi Takeyama	1	"New Type of Public Space in Contemporary Urban Context" Various form of urban fabrics and developments requires new type of public spaces. We will discuss the possibility of places by providing architecture and urban context with flow of convergence and divergence where people get opportunities to meet and gather.
Oct. 8 Minoru Yoneda	1	"Countermeasures of the contaminated water at Fukushima Daiichi Nuclear Power Station and that of the contaminated soil in Fukushima area" The situation of contaminated water in Fukushima Daiichi Nuclear Power Station and soil contamination in and around Fukushima area and their technological countermeasures taken today will be introduced and discussed.
Oct. 22 Minoru Miyahara	1	"Engineering Approach to Phase Behavior of Fluids Confined in Nanospace" Fluids confined in nano-scale pores exhibit peculiar phase behaviors that depends strongly on physico-chemical effects by pore walls and conditions of the bulk phase in equilibrium with the pore fluids, to which the engineering approach must be effective.
Oct. 29 Minoru Miyahara	1	"Elucidation of Principles for the Self-Organization of Mesoscale Colloidal Particles" The process of so-called the colloid crystal has been pursued to find out the key principles for the structure evolution, employing the Brownian dynamics simulations. Also given in the lecture will be various pattern formations in the convective self-assembly of colloidal suspensions.
Nov. 5 Tohru Sato	1	"Theoretical design for light-emitting molecules from the view of electron-vibration interactions" This lecture describes theoretical design principles for highly efficient emitting molecules in organic light-emitting diodes (OLED) from the view of electron-vibration interactions (vibronic couplings).
Nov. 12 Hirofumi Yamada	1	"Exploration into nanometer-scale world - frontiers of scanning probe microscopy -" Recent, various advanced research fields, such as developments of novel semiconducting devices, single-molecule chemistry and studies on biomolecule functions, require nanometer-scale measurements for visualizing and/or controlling their fundamental processes. Scanning probe microscopy (SPM) is one of the most powerful techniques for such measurements. In this lecture basics of SPM are first explained and then a wide variety of state-of-the-art SPM measurement techniques are presented.
Nov. 19 Haruyuki Atomi	1	"Genome sequences, what do they say and how can we use them?" Owing to the revolutionary advances in DNA sequencing technology, the complete genome sequences of a large number of organisms are now available. Here we will discuss what these genome sequences tell us and how we can use them to further increase our understanding of life.
Nov. 26 Satoru Komori	1	"Turbulent Transport across the Air-Water Interface at High Wind Speeds and Forecasting of Typhoon Intensity" Laboratory measurements of turbulent momentum, heat and mass fluxes across sheared wavy interfaces at high wind speeds will be introduced, and then typhoon and hurricane intensities will be forecasted by applying the measurements to a numerical model. After this lecture, laboratory experiments will be demonstrated.
Dec. 3 Koji Otsuka	1	"Micro- and Nano-scale Separations in Analytical Chemistry" Micro- and nano-scale high performance separation techniques, including capillary electrophoresis and microchip electrophoresis, will be discussed in terms of both fundamental characteristics and applications.
Dec. 10 Shiro Biwa	1	"Characterization of Advanced Composite Materials by Ultrasonic Waves" Introduction of advanced composite materials in transportation vehicle structures plays an important role in the reduction of energy consumption. In this lecture, the characterization of composite materials using ultrasonic waves will be discussed.
Dec. 17 Jiro Matsuo	1	"Modern techniques for material characterization" Overview of modern techniques for material characterization is given with basic principles and practical applications. Impacts on the life of the people of characterization techniques are also included.
Dec. 24 Yoshiharu Omura	1	"Exploration of Radiation Belts by Space Radio Engineering" Radiation belts of energetic particles are formed around magnetized planets such as the Earth, and they have been studied extensively by spacecraft missions and computer simulations for better understanding and utilization of the space plasma environment. We review historical development of space radio engineering and current understanding of radiation belt dynamics.
Jan. 7 Kazuo Aoki	1	"Global behavior of gases in view of molecular motion" It is important to understand flows and heat transfer in gases under extreme conditions when energy and environmental problems are discussed. The macroscopic behavior of the gas, in particular, that in low-pressure circumstances or in microscopic systems, are discussed on the basis of motion of gas molecules.
Jan. 21 Mitsuo Sawamoto	1	"Polymer Synthesis beyond the 21st Century: Precision Polymerizations and Novel Polymeric Materials" We are now in the "Polymer Age", where synthetic polymer materials are indispensable in the modern human life: healthy, safe, comfortable, and sustainable. A critical challenge herein is to develop "precision polymerization", polymer-forming reactions that provide polymers of well-defined structures and designed functions. Given these backgrounds, this lecture will overview the following subjects: (a) What polymers are; (b) How to synthesize polymers; (c) How and where polymeric materials work and function; (d) Precision polymer synthesis; and (e) The future of polymeric materials.
Jan. 28 Tetsuo Sakka	1	"Laser-induced breakdown spectroscopy and its application to underwater in-situ elemental analysis" Application of laser-induced breakdown spectroscopy (LIBS) to resource exploration at sea bottom is explained, and the importance of interdisciplinary research will be discussed.

【Textbook】None

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

【Additional Information】Location (Lecture room) has been changed. Please see the "Location".

Check the notice on the bulletin board.

Students who take Autumn term (Lecture code 10H006) should attend the first 11 lectures.

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】First term/Spring term 【Class day & Period】Fri 4th 【Location】KatsuraA2-308,Yoshida Research Bldg.No4,-Room3(Distance lectures)

【Credits】First term: 2, Spring term: 【Restriction】No Restriction 【Lecture Form(s)】Relay Lecture 【Language】English

【Instructor】GL Edu. Center, J. Assoc. Prof., Tadao Mizuno
Related professors

【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】Please go to KULASIS Web site. You can find an attachment file, " 通知版：2015 先端マテリアル講義概要 ", where the term Credit will tell you the requirement.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Stress-Diffusion Coupling in Polymer Gels	1	Because a polymer gel in solvent forms a thermodynamic semi-open system, a mechanical stimulus imposed on the gel induces a thermodynamic response. The outline of this phenomenon is explained by using several examples. (4/10 T. Takigawa)
Modern Organic Synthesis for Material Science	1	The lecture will deliver recent developments in organic synthesis, particularly focusing on catalytic reactions that have revolutionized chemical processes, and their applications in the production of some important pharmaceuticals and organic materials. (4/17 Y. Nakao)
Oxide Magnetic Materials	1	Fundamentals of magnetism and magnetic properties of oxides as well as applications of magnetic oxide materials are described. A brief introduction to recent magnetism-related technologies such as spintronics is also given. (4/24 K. Tanaka)
In Vivo Optical and Photoacoustic Tumor Imaging using Near-infrared Dye-conjugated Amphiphilic Polymers	1	Optical and photoacoustic imaging methods are one of the most powerful and noninvasive techniques with which to visualize organs as well as tumor tissues. In this lecture, students can learn the basic principles of molecular imaging as well as recent progress in this field. (5/8 K. Ohe)
Photofunctional Nanocarbon Materials	1	Photo-functionalization of nanocarbon materials, e.g., fullerenes, carbon nanotubes, and graphenes, using the methodologies of organic synthetic chemistry and their application in photoelectrochemical devices. (5/15 T. Umeyama)
Rheology Control by Associating Polymers	1	Hydrophobically modified water-soluble polymers (associating polymers) have been used as rheology modifiers or thickeners because rheological properties of solutions and dispersions are drastically changed by the addition of small amounts of associating polymers. In this lecture, recent development on the molecular origin of the structure formation and rheological properties of associating polymers will be reviewed. (5/22 T. Koga)
Solar Hydrogen Production using Semiconductor Photocatalyst	1	The development of a clean and renewable energy carrier that does not utilize fossil fuels is a great technological challenge. Photocatalytic water splitting using semiconductor materials has attracted considerable interest due to its potential to cleanly produce H ₂ from water by utilizing abundant solar light. In the present lecture, the basis and the recent progress in photocatalytic water splitting will be introduced. (5/29 R. Abe)
Hyperthermophiles and their thermostable biomolecules	1	This lecture will first introduce the diversity and classification of life. It will then focus on hyperthermophiles and their thermostable molecules, such as proteins, nucleic acids and lipids. (6/5 H. Atomi)
Physical Organic Chemistry of Supramolecular Photofunctional Organic Materials	1	This lecture explains interesting behaviors of photofunctional organic materials, such as photochromic compounds and fluorescence dyes, in the aggregated and self-organized state from the viewpoint of physical organic chemistry. (6/12 K. Matsuda)
Production of Advanced Materials by Micro Chemical Plants	1	This lecture will concentrate on the following topics related to the micro chemical processes. 1) Feature of micro devices, 2) Possibility of using micro systems for real production, 3) Design problems of micro chemical plants, 4) Control of micro chemical plants, 5) Blockage detection of parallelized micro plants, 6) Future direction of the research on micro chemical plants. (6/19 S. Hasebe)
Directed Self-Assembly (DSA) of Block Copolymers	1	Recently, Directed Self-Assembly (DSA) technology of block copolymers has received a lot of attention in the field of semiconductor research. In this lecture, the fundamentals of microphase separation of block copolymers and the application of DSA to lithographic technologies will be reviewed. (6/26 T. Koga)
High-temperature superconductor as a playground for the macroscopic quantum phenomena	1	High temperature superconductors have attracted much attention to their emerging mechanism and applications. They are also quite peculiar for playgrounds for superconducting properties as macroscopic quantum phenomena. In this lecture, quantum phenomena found in high temperature superconductors and their applications are discussed. (7/3 I. Kakeya)
Introduction to Nuclear Materials	1	Nuclear materials are designed for good performance in irradiation field of neutron and high-energy particles. Fundamentals and some examples of nuclear reactions with these particles will be talked. (7/10 I. Takagi)
Materials Processing using external fields for microstructure control	1	Properties of materials are not simply determined by atomic structure and chemical composition. Microstructure (crystal grain size, crystallographic orientation and so on) significantly influences the properties. Not a few techniques have been developed for controlling the microstructure. Materials processing using external fields will be demonstrated in this class. (7/17 H. Yasuda)
Electrodeposition and Electroless Deposition for Materials Processing	1	(1) Fundamentals chemistry, electrochemistry, and thermodynamics, and (2) applications of electrodeposition and electroless deposition for materials processing. (7/24 K. Murase)

【Textbook】None

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

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

Students who take Spring term (Lecture code 10H012) should attend first 11 lectures.

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, Associate Professor, Department of Synthetic Chemistry and Biological Chemistry

【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
	1	Guidance and Professional presentation rules and etiquette
	3	Oral presentations & questioning I, Written report I
	3	Oral presentations & questioning I, Written report I
	3	Oral presentations & questioning II, Written report II
	3	Oral presentations & questioning II, Written report II
	2	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

【Independent Study Outside of Class】

【Web Sites】The web-site is listed 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 13th, and the 1st lesson is repeated on 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】1st 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, Group works&tasks 【Language】English

【Instructor】Juha Lintuluoto, Associate Professor, Department of Synthetic Chemistry and Biological Chemistry

【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 " Engineering Project Management" course , Small group working method

【Independent Study Outside of Class】

【Web Sites】The web-site is listed 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. The course starts on Apr.12th.

Engineering Project Management (English lecture)

エンジニアリングプロジェクトマネジメント (英語科目)

【Code】10i047 【Course Year】Doctor Course 【Term】1st term 【Class day & Period】Fri 5th 【Location】B-Cluster 2F Seminar Room

【Credits】1 【Restriction】 【Lecture Form(s)】Lectures, Group works&tasks 【Language】English

【Instructor】Lintuluoto, Oishi, Takatori, Nishi, Mizuno, Tanaka

【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 pre-course for Engineering Project Management II which will be held in the second semester. Students will learn project management tools, 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
Introduction to the course	1	4/11 The introduction to the course and preliminary knowledge about the engineering project management will be given. (All)
Strategy Viewpoints in Engineering Projects	1	4/18 (Oishi)
Project Management	1	4/25 I (Lintuluoto)
Management of abroad dispatched project	1	5/8 Through an abroad dispatched project of Graduate School of Engineering, Kyoto University, the development and management of the project in University will be given. (Mizuno)
Project management	1	5/15 II (Lintuluoto)
Design thinking	1	5/22 (Takatori)
Public governance of engineering project	1	5/29 The lecturer will be invited from the Ministry of land, Infrastructure, Transport and Tourism. Mr. Wako will talk about Public governance of engineering project (Mizuno)
Risk Identification and Assessment for Engineers	1	6/5 (Nishi)
Risk Identification and Assessment for Engineers	1	6/12 (Nishi)
Engineering project presentation	1	6/19 (Takatori)
Leadership skills	1	6/26 I (Tanaka)
Leadership skills	1	7/3 II (Tanaka)
Special Lecture from Industry	1	7/10 The lecturer will be invited from JGC Corporation (日揮株式会社). Mr. Kumagai will talk about the characteristics of the management of the project for different phases through a project in a foreign country. (Mizuno)
Special Lecture from Industry	1	7/17 The lecturer will be invited from a company. (Mizuno)
Review of the course	1	7/24 Review of the course

【Textbook】Course materials will be provided.

【Textbook(supplemental)】

【Prerequisite(s)】‘ -This course is recommended for those who later intend to attend “ Engineering Project Management II ” .

-Highly interactive lessons (discussion), Small group work methodologies.

【Independent Study Outside of Class】

【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. The course starts on Apr. 10th.

Engineering Project Management (English lecture)

エンジニアリングプロジェクトマネジメント (英語科目)

【Code】10i048 【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, Mizuno, Oishi, Takatori, Nishi,

【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 "Engineering Project Management I" 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	1	
Group work I	3	
Group work II		
Intermediate discussion I	1	
Group work III	4	
Group work IV		
Intermediate discussion II	1	
Group work V	4	
Group work VI		
Project presentation and discussion	1	
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 "Engineering Project Management I" in the 1st term.

-Attendance on "Advanced Engineering Economics" course in the 1st term is strongly recommended.

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

【Independent Study Outside of Class】

【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.

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)】Seminar and Exercise 【Language】 【Instructor】 ,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

【Additional Information】

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】 A1-131 【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)】

【Independent Study Outside of Class】

【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)】

【Independent Study Outside of Class】

【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)】

【Independent Study Outside of Class】

【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 I

ビジネス日本語講座

【Code】10i005 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Wed 3rd

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

【Language】Japanese 【Instructor】Lect. Katoh,

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	1	
	1	
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【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

【Additional Information】

ビジネス日本語講座 II

【Course Topics】

[illegible]

【Additional Information】

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工学研究科シラバス 2015 年度版

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