

# SYLLABUS

2017

[A] Common Subjects of Graduate School of Engineering



Kyoto University, Graduate School of Engineering

# [A] Common Subjects of Graduate School of Engineering

## Common Subject

10D051 Frontiers in Modern Science & Technology	1
10i045 Exercise in Practical Scientific English	2
10i046 Exercise in Practical Scientific English	3
10K005 Advanced Modern Science and Technology ( English lecture )	4
10K001 Introduction to Advanced Material Science and Technology ( English lecture )	5
10i041 Professional Scientific Presentation Exercises ( English lecture )	6
10i042 Advanced Engineering and Economy ( English lecture )	7
10i049 Project Management in Engineering	8
10i050 Exercise on Project Management in Engineering	9
10i009 Internship	10
10i010 International Internship in Engineering 1	11
10i011 International Internship in Engineering 2	12

## Japanese Language Classes

10i035 Advanced Japanese A	13
10i036 Advanced Japanese B	14
10i037 Intermediate Japanese IA	15
10i038 Intermediate Japanese IB	16
10i039 Intermediate Japanese A	17
10i040 Intermediate Japanese A	18
10i012 Business Japanese A	19
10i013 Business Japanese B	20



## 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】First term/Spring term 【Class day & Period】Wed 5th 【Location】Funai Hall

【Credits】First term: 2, Spring term: 1.5 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese

【Instructor】GL center: J.Assoc. Tanaka, Mizuno, Takatori, Matsumoto, Ashida and Related professors

【Course Description】This course provides lectures and panel discussions by lecturers inside and outside the campus who have a remarkable achievement in engineering and are active as international leaders.

【Grading】Refer material about grading this course which is provided in 1st and 2nd lectures.

【Course Goals】This course cultivates the ability to develop familiar problem consciousness into a big concept through utilizing the materials of advanced fields in each field. This course also shows how leaders have improved their response to problems. Through this course, students learn fundamental culture, and the importance of human growth.

#### 【Course Topics】

Theme	Class number of times	Description
Construction of solar updraft power generation (SUPG) system on the ocean	1	Prof. Kunimasa Sugiura (Civil and Earth Resources Engineering) Apr. 12
Record and protection of world cultural heritage by advanced image processing	1	Prof. Ari Ide (Mechanical Engineering and Science) Apr. 19
Mysterious characteristics of smell: from development of smell identification device	1	Dr. Jun-ichi Kita (Shimadzu Corporation ) Apr. 26
Science and engineering of metals and potential of metals	1	Prof. Nobuhiro Tsuji (Materials Science and Engineering) May 10
My days with radiation ray	1	Dr. Katsumi Hayashi (Hitachi, Corporation) May 17
Material synthesis considering feeling of molecules	1	Prof. Yasujiro Murata (Energy and Hydrocarbon Chemistry) May 24
Practical Marketing not on books	1	Dr. Fuminori Takaoka (Edge, Ltd.) May 31
Direct visualization of atoms and molecules	1	Prof. Hirofumi Yamada (Electronic Science and Engineering) Jun. 7
Encouragement for serial innovator	1	Prof. Mitsuaki Oshima (Panasonic Corporation) Jun. 14
Idle time and idle space	1	Prof. Kiyoshi Takeyama (Architecture and Architectural Engineering) Jun. 21
Research of cancer therapy by heavy ion beams	1	Dr. Koji Noda (National Institutes for Quantum and Radiological Science and Technology) Jun. 28
Seven Wonders of powders	1	Prof. Shuji Matsusaka (Chemical Engineering) Jul. 5
Strong company organizations in Japan, USA and Germany	1	Dr. Masahiko Mori (DMG MORI Co.,Ltd.) Jul. 12
Development of construction techniques: from development of advanced technique to big projects	1	Dr. Ichiro Nagashima (Taisei Corporation) Jul. 19
Manufacturing by advanced optical machining	1	Prof. Kiyotaka Miura (Material Chemistry) Jul. 26

【Textbook】Course materials will be provided.

【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 20 students for each class 【Lecture Form(s)】 Seminar 【Language】 English (Japanese)

【Instructor】 M. Nishikawa, Y. Tanaka, T. Mizuno, A. Takatori, R. Matsumoto, R. Ashida

【Course Description】 This course is open to all master and doctoral engineering students. It is designed to help students understand how to write a research paper step by step. In this course, the students will write a short research paper (i.e. Extended Research Abstract for Proceeding, approx. 1000 -1500 words) on a topic drawn from assigned readings.

【Grading】 Evaluation based on 10% participation, 60% reports, 30% final paper \*More than twice unexcused absence can result in course failure

【Course Goals】 The primary goal of this course is to deepen an understanding of the main features of each part of a scientific paper (IMRaD). Throughout the course, students will develop the core competencies required for language, grammar, and style to produce a research manuscript in English.

#### 【Course Topics】

Theme	Class number of times	Description
Unit 1: Course Overview	1	Course Overview: Introduction to writing scientific research articles
Unit 2: Introduction	1	Raising awareness of the register of science research articles (genre, audience, purpose)
Unit 3: Preparing to Write	1	Writing a proposal for a research paper, using corpus-based approach (Exercise: Creating own Corpus)
Unit 4: Preparing to Write	1	Paraphrasing ideas from source texts, using citations and references in formal writing
Unit 5: Writing Processes	1	Identifying the “ moves ” for an Abstract section by hint expressions
Unit 6: Writing Processes	1	Writing an Abstract (Title) & peer feedback
Unit 7: Writing Processes	1	Identifying the “ moves ” for an Introduction section by hint expressions
Unit 8: Writing Processes	1	Writing an Introduction section & peer feedback
Unit 9: Writing Processes	1	Writing a Method section & peer feedback
Unit 10: Writing Processes	1	Writing a Result section & peer feedback
Unit 11: Writing Processes	1	Writing a Discussion and a Conclusion section
Unit 12: Writing Processes	1	Writing a cover letter to reviewers and how to respond to reviewers
Unit 13: Monitoring and Revising	1	Online feedback
Unit 14: Monitoring and Revising	1	Revising a paper based on peer feedback
Unit 15: Submission	1	Final Paper Due, August 6.

【Textbook】 Handout materials will be supplied by the instructor.

【Textbook(supplemental)】 ALESS (2012). Active English for Science- 英語で科学する - レポート、論文、プレゼンテーション . The University of Tokyo Press. Cargill, M., & O'Connor, P. (2013). Writing scientific research articles: Strategy and steps. John Wiley & Sons. Cowell, R., & She, L. (2015). Mastering the Basics of Technical English 『技術英語の基礎』 . 2nd Ed., Corona Publishing. 野口ジュディー・深山晶子・岡本真由美 . ( 2007 ) . 『理系英語のライティング』 . アルク

【Prerequisite(s)】 Students who intend to join this course must attend the first class.

#### 【Independent Study Outside of Class】

#### 【Web Sites】

【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. Office Hours: (by appointment) nishikawa.mikako7w@kyoto-u.ac.jp (Ext. 2052)

## Exercise in Practical Scientific English

実践的科学英語演習

【Code】 10i046 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day & Period】 Mon 5th

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

【Restriction】 If the number of students in this course reaches the enrollment limit after the web-registration, a drawing will take place to decide who gets to be enrolled in the first class.

【Lecture Form(s)】 Seminar and Exercise 【Language】 English

【Instructor】 GL Edu. Center (M. Nishikawa), Related professors (J. Lintuluto, A. Beaucamp, C. Tassel, K. Landenberger, M. De Zoysa)

【Course Description】 This course is open to all master and doctoral engineering students. The aim is to enhance students' abilities to disseminate scientific findings to a wider audience in English. Throughout the course, feedback will be given to the presenter by different instructors specialized in Engineering. The course will help students gain confidence in Oral English presentations on scientific topics.

【Grading】 Evaluation: 20% participation (engaging the Q&As), 10% reflection paper, 10% poster presentation, 60% oral presentations

【Course Goals】 Throughout the course, students are expected to deliver an oral presentation about their research three times. In each class, four or five students (depending on the total number of students in class) will deliver a 10-minutes oral presentation using the visual aid in front of a small group. After each presentation, the audience, and the instructor(s) in the class will give some meaningful feedback (5 min). In addition, each presentation will be videotaped and stored in USB memory. Students can monitor the progress by watching own video and can write a reflection paper at the end of the course. In addition, we will have poster presentations scheduled during the course.

### 【Course Topics】

Theme	Class number of times	Description
Introduction: Effective Presentation	1	A lecture is given on how to prepare an effective presentation including: 1. Presenting with purpose, 2. How to organize your message, 3. How to use transitional words and phrases, 4. What to do for Questions and Answers.
Oral presentations	12	Here are some focal points for each round of oral presentations: 1. Organization-Presentation should be structurally organized and contains information in logical, interesting sequence which audience can follow, 2. Subject Knowledge-Students should be able to demonstrate the knowledge on the research topic with some degree of confidence, 3. Delivery: Students should be able to deliver a presentation that will merit the audience even if the audience does not come from the same research field.
Poster presentations	2	Here are some criteria for poster presentations: 1. Layout of information-The sequence of information should be logically organized and easy to follow, 2. Scientific knowledge-The poster should provide a content suitable for non-experts, 3. Delivery-Students need to demonstrate knowledge and enthusiasm for their work.

【Textbook】 Handout materials will be supplied by the instructor.

【Textbook(supplemental)】 Donovan, J. (2014). How to deliver a TED talk. Mc Graw, Hill Education.

【Prerequisite(s)】 This course is held in English. Students are expected to actively engage in class discussions.

【Independent Study Outside of Class】

【Web Sites】 None

【Additional Information】 Students who intend to join this course must attend the first class.

Office Hours: (by appointment) nishikawa.mikako7w@kyoto-u.ac.jp (Ext. 2052)

# Advanced Modern Science and Technology ( English lecture )

## 現代科学技術特論 ( 英語科目 )

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

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

【Instructor】 GL Edu. Center, J. Assoc. Prof., Ryosuke Matsumoto

Related professors

【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】 Students who choose the academic semester system must meet the requirements for the first 11 lecturers and the latter 4 lecturers separately.

When evaluating your grade, I employ the average score of best four reports for students who chose the modified quarter system, and best five reports for students who chose academic semester system.

Please go to KULASIS Web site. You can find an attachment file, " 通知版 : 2016 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
Exploration of Radiation Belts by Space Radio Engineering	1	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.(Y. Omura: Dept. of Electrical Engineering)
Functional Organic Molecular Materials for Molecular Scale Nanoscience	1	This lecture explains functional organic molecular materials with functions like photochromism or molecular conductance, which are expected to play an active role in molecular scale nanoscience.(K. Matsuda: Dept. of Synthetic Chemistry and Biological Chemistry)
Micro- and Nano-scale Separations in Analytical Chemistry	1	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.(K. Otsuka: Dept. of Material Chemistry)
Role of Nanoparticles Aiming at Theranostic Agents for Solid Cancers – Sustainable Universe Health Care in the Aged Society	1	Malignancy takes the first position for the cause of mortality in Japan. Realization of a " society of health and longevity " therefore requires a general method for diagnosis and therapy for cancers in the early stage. Nanoparticles are currently highly expected to this type of medicinal treatment, because nanoparticles can avoid expensive therapy, which would bankrupt our universal health care system.(S. Kimura: Dept. of Material Chemistry)
What are polymers?	1	What is a polymer? Also, what is the difference between polymers and other molecules? The characteristics of polymers and polymerizations are explained with some examples on practical applications of polymers.(M. Ouchi: Dept. of Polymer Chemistry)
Precision Polymerization and Functional Materials by Macromolecular Design	1	The methodology to synthesize polymers precisely and their features are described. In addition, some examples on functional materials using polymers whose molecular design is important are introduced.(M. Ouchi: Dept. of Polymer Chemistry)
Analysis and Design of Socio-Technical Systems	1	When introducing various kinds of automation systems including robots into a new work environment, it is necessary to design and analyze from the viewpoint of socio-technical systems, which is the interaction system of people, technology and organization. In this lecture, specific problems and solutions are described.(T. Sawaragi: Dept. of Mechanical Engineering and Science)
Computational Chemistry and computer science	1	Remarkable progress in the computer science has been revolutionizing scientific research and technological development for this decade. This trend will further accelerate in the future. This lecture reviews the impact of state of the art computer science on the molecular chemistry as an example.(R. Fukuda: Dept. of Molecular Engineering)
Photofunctional Single-Walled Carbon Nanotubes	1	Basic chemical properties of single-walled carbon nanotubes are introduced, and then applications of them as photofunctional molecular platform and charge transport pathway are presented. (T. Umeyama: Dept. of Molecular Engineering)
Renewable energies and rechargeable batteries	1	For the effective use of renewable energies, rechargeable batteries have been focused. Basic chemistry of batteries and how the rechargeable batteries are utilized for the storage of the energies will be given by the first lecture.(T. Abe: Energy and Hydrocarbon Chemistry)
Renewable energies and hydrogen production	1	Fuel cells using hydrogen are clean energy sources. The second lecture is about the hydrogen production based on the renewable energies.(T. Abe: Energy and Hydrocarbon Chemistry)
Genome sequences, what do they say and how can we use them?	1	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.(H. Atomi: Dept. of Synthetic Chemistry and Biological Chemistry)
Optical clocks -measurement of time at the 18th decimal place	1	Time or frequency is the most precisely measurable quantity. Clocks referenced to atomic resonances, called atomic clocks, have extremely small uncertainties. They realize the definition of second and are applied to the global positioning system (GPS). This lecture introduces atomic clocks based on lasers, which improve the uncertainty to be the 18th decimal place.(K. Sugiyama: Dept. of Electronic Science and Engineering)
Mechanism of particle electrification	1	The basic concepts and theories of charge transfer between solid surfaces are summarized and particle electrification caused by repeated impacts on a wall is formulated.(S. Matsusaka: Dept. of Chemical Engineering)
Control of electrostatic charge on particles	1	On the basis of the concepts and formulation on particle electrification, new methods for the control of electrostatic charge on particles are presented.(S. Matsusaka: Dept. of Chemical Engineering)

【Textbook】 None

【Textbook(supplemental)】

【Prerequisite(s)】

【Independent Study Outside of Class】

【Web Sites】

【Additional Information】 Students who take Autumn term should register Lecture code 10H006.

# 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 5th 【Location】A2-306 【Credits】First term: 2, Spring term: 1.5 【Restriction】No Restriction

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

【Instructor】GL Edu. Center, J. Assoc. Prof., Ryuichi Ashida

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】Requirements and a number of credits are different with the academic system students choose, the modified academic quarter system or the academic semester system. Students who choose the academic semester system must meet the requirements for the first 11 lectures and the latter 4 lectures separately.

When the students who choose the modified quarter system are graded, the average score of the best four reports is employed. When the students who choose the academic semester system are graded, the average score of the best five reports is employed.

Please go to KULASIS Web site for more information.

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Materials Processing Using External Fields for Microstructure Control	1	Properties of materials are not simply determined by crystal structure and chemical composition. Microstructure (i.e. crystal grain size, crystallographic orientation) can significantly influence the properties. Materials processing for the microstructure control, using external fields will be demonstrated in this class. (H. Yasuda: Dept. of Materials Science and Engineering)
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. (Y. Nakao: Dept. of Material Chemistry)
Synthesis and Functions of Mixed Anion Compounds	1	As we entered the 21st century, mixed anion compounds, which contain several different anions, began to draw attention as new types of inorganic material. My lecture will show synthetic and functional aspects in this class of materials. (H. Kageyama: Dept. of Energy and Hydrocarbon Chemistry)
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. (T. Koga: Dept. of Polymer Chemistry)
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. (T. Koga: Dept. of Polymer Chemistry)
Photonic Crystal Technology	1	Photonic crystals are materials with periodic modulation of refractive index, in which a frequency range that existence of photon is prohibited (i.e. photonic band gap) can be formed. In this class, basics and applications of photonic crystals are introduced. (T. Asano: Dept. of Electronic Science and Engineering)
Introduction to Nuclear Materials	1	Nuclear materials are designed for irradiation field of neutron and high-energy particles. Some topics of nuclear transmutation, thermonuclear fusion, boron neutron capture therapy and others will be talked. (I. Takagi: Dept. of Nuclear Engineering)
Application of Polymer Nanoparticles to Bio-Imaging	1	Polymers are widely used in various delivery/localization events as drug carriers, stabilizers of clinical protein and nucleic acid medications, and lesion targets. An obvious merit of polymers with an appropriate (>10 nm) size is that they escape from facile renal excretion. The size has another significance in case of tumor targeting. Tumor tissues usually have defective endothelial cells with a wide opening and undeveloped lymphatic vessel, so that polymer nanoparticles of the size range of 10 - 100 nm can permeate into the tumor and are retained therein. This is the so-called enhanced permeability and retention (EPR) effect, which shows high performance in terms of selectivity and efficiency in bio-imaging. (T. Kondo: Dept. of Energy and Hydrocarbon Chemistry)
Radiation Induced Reactions towards 1-Dimensional Nanomaterials	1	Whether can we produce nano-material by the reactions induced by a " ray " (ionizing radiation)? The answer is yes. With an use of an atomic particle accelerated up to MeV orders, the one particle provides a nanowire along its trajectory via condensed and efficient chemical reactions in organic media. Single particle Nanofabrication Technique (SPNT) or Single Particle Triggered Linear Polymerization (STLiP), referred as, are demonstrated as versatile methods to give low dimensional nanomaterials based on a variety of organic molecular systems in this lecture. (S. Seki: Dept. of Molecular Engineering)
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. (K. Matsuda: Dept. of Synthetic Chemistry and Biological Chemistry)
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. (H. Atomi: Dept. of Synthetic Chemistry and Biological Chemistry)
Designing Polymer Membrane Materials to Capture Green House Gases	1	We will discuss the overall obstacles involved in capturing green house gases such as CO <sub>2</sub> or Methane, and the specific challenges to generating polymer membranes that can achieve it. Then we will consider how to design polymer materials that can overcome such obstacles. (E. Sivaniahi: Dept. of Molecular Engineering)
Oxide Magnetic Materials	1	The aim of the lecture is to review the fundamentals and applications of oxide magnetic materials. Main topics include fundamentals of magnetism, magnetic properties of oxides, magneto-optics of oxides, oxides for spintronics, and multiferroic oxides. (K. Tanaka: Dept. of Material Chemistry)
Force Acting on Colloidal Particles	1	Colloid means small particles dispersed in a liquid solvent. Theoretical approaches on several forces acting on colloidal particles such as thermal, hydrodynamic, and electrostatic forces will be discussed. (R. Yamamoto: Dept. of Chemical Engineering)
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. (K. Murase: Dept. of Materials Science and Engineering)

【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 &amp; Period】Thu 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】 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, 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	Course contents, goals
Cost concepts and design economics	1	Cost terminology and classification
Cost estimation techniques	1	WBS for cost estimation, estimation techniques (indexes, unit, factor, power-sizing, learning curve, CER, top down, bottom up), target costing
The time value of money	1	Simple interest, compound interest, economic equivalence concept, cash-flow diagrams, PW, FW, AW
Evaluating a single project	1	MARR, present worth method, bond value, capitalized worth, internal rate of return, external rate of return, payback method
Comparison and selection among alternatives	1	Investment and cost alternatives, study period, equal and unequal useful lives, rate-of-return method, imputed market value
Depreciation and income taxes	1	SL and DB depreciation methods, book value, after-tax MARR, marginal income tax rate, gain(loss) on asset disposal, after-tax economic analysis general procedure, EVA,
Price changes and exchange rates	1	Actual dollars, real dollars, inflation, fixed and responsive annuities, exchange rates, purchasing power
Replacement analysis	1	Determining economic life of challenger, determining economic life of defender, abandonment, after-tax replacement study
Evaluating projects with the benefit-cost ratio method	1	Benefits, costs, dis-benefits, self-liquidating projects, multi-purpose projects, interest rate vs. public project, conventional B-C ratio PW and AW method, modified B-C ratio PW and AW method
Breakeven and sensitivity analysis	1	Breakeven analysis, sensitivity analysis, spider plot
Probabilistic risk analysis	1	Sources of uncertainty, discrete and continuous variables, probability trees, Monte Carlo simulation example, decision trees, real options analysis
The capital budgeting process	1	Capital financing and allocation, equity capital and CAPM, WACC, WACC relation to MARR, opportunity cost
Decision making considering multiattributes	1	Non-compensatory models (dominance, satisficing, disjunctive resolution, lexicography), compensatory models (non-dimensional scaling, additive weight)
Final test	1	90 minutes, concept questions, calculation task (option of choice)

Additionally, students will submit three 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 " Project Management in Engineering" 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 Oct.3rd.

# Project Management in Engineering

## エンジニアリングプロジェクトマネジメント

【Code】 10i049 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day & Period】 Fri 4th 【Location】 A2-308 【Credits】 2

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

【Instructor】 GL center: J.Assoc.Prof. Takatori, Mizuno, Tanaka, Matumoto, Ashida  
Assoc.Prof. Lintuluoto

【Course Description】 This course provides a basic knowledge required for the project management in various engineering fields such as process design, plant design, construction, and R&D projects. Also, visiting lecturers from industry and public works provide management insights of actual engineering projects.

【Grading】 Evaluated by assignments (project report exercise) and class contribution

【Course Goals】 This course will help students gain a fundamental knowledge of what project management in engineering is. Throughout the course, students will learn various tools applied in project management. Students will also understand the importance of costs and money, risks, leadership, and environmental assessment in managing engineering projects. This course is followed with the course "Seminar on Project Management in Engineering." in the second semester.

### 【Course Topics】

Theme	Class number of times	Description
Guidance	1	4/14 (Ashida) Course guidance
Introduction to project management & Project phases	1	4/21 (Takatori) Introduction to project management Project phases
Tools for project management, cost, and cash flows I	1	4/28 (Lintuluoto) Tools Work breakdown structure Gantt charts
Project scheduling I	1	5/12 (Ashida) Project scheduling I
Project scheduling II	1	5/19 (Ashida) Project scheduling II
Tools for project management, cost, and cash flows II	1	5/26 (Lintuluoto) Cost
Tools for project management, cost, and cash flows III	1	6/2 (Lintuluoto) Cash flow
TBA	1	6/9 To be announced
Leadership I	1	6/16 (Tanaka) Leadership I
Leadership II	1	6/23 (Tanaka) Leadership II
Risk I	1	6/30 (Matsumoto) Risk I
Risk II	1	7/7 (Matsumoto) Risk II
Environmental Impact Assessment I	1	7/14 (Mizuno) Environmental Impact Assessment I
Environmental Impact Assessment II	1	7/21 (Mizuno) Environmental Impact Assessment II
Special lecture Project management ~Tender process of Panama Canal expansion project~	1	7/28 @ A2-306 (Cluster A, Katsura Campus) Lecturer: Taizo SHIMOMURA, Dr. (TAISEI CORPORATION)

【Textbook】 Course materials will be provided.

【Textbook(supplemental)】 1. Lock, Dennis. Project Management. 10th edition. Gower Publishing Ltd.

2. Cleland, David L., and Lewis R. Ireland. Project Management. 5th edition. McGraw-Hill Professional

3. Roger Miller and Donald R. Lessard. The strategic management of large engineering projects, Shaping Institutions, Risks, and Governance, The MIT Press

【Prerequisite(s)】 No pre-requisite

【Independent Study Outside of Class】

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

【Additional Information】

## Exercise on Project Management in Engineering

エンジニアリングプロジェクトマネジメント演習

【Code】 10i050 【Course Year】 Master and 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】 GL center: J.Assoc.Prof. Mizuno, Tanaka, Matumoto, Ashida, Maeda  
Assoc.Prof. Lintuluoto

【Course Description】 In this course, students will apply the engineering know-how and the skills of management, and group leadership which they learned in the course of Project Management in Engineering 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, presentations, and a few intermediate discussions. 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
	10/6	
Guidance	1	Introduction to Exercise on Project Management in Engineering Lecture on tools for the Project management in engineering Practice
Teamwork	7	Each project team may freely schedule the group works within given time frame. The course instructors are available if any need is required.
Lecture & Teamwork	2	Some lectures will be provided, such as Leadership structuring, Risk Management, and Environmental Impact Assessment, depending on projects you propose.
Presentation	1	Each project team will have a presentation based on its proposed project.

【Textbook】 Course materials will be provided.

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

【Prerequisite(s)】 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】 The number of students may be restricted. 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】1st+2nd term 【Class day &amp; Period】Flexible

【Location】 【Credits】Depend on the department that the student belongs to 【Restriction】No Restriction

【Lecture Form(s)】Seminar and Exercise 【Language】Japanese

【Instructor】GL Education Center, Lecturer, Aiko Takatori, and related faculty members

【Course Description】 This internship aims at mastering the meaning of engineering by experiencing the applied research and technical development in a company, and acquiring the flexible ability to cope with various industrial problems.

【Grading】 The presentation and/or reports after the internship are used for evaluation. The rating is done at each department if this internship has been authorized at the department. If not, the rating is done at GL Education Center, and the credit earned by this subject is treated as a redundant credit.

【Course Goals】 Through the experiences of actual businesses, such as a research or operation planning, grasping the actual condition of Japanese industries and the capability that the industries are searching for.

## 【Course Topics】

Theme	Class number of times	Description
Internship in a company	1	The research theme is determined through the prior consultation between a program participating company and the administrator of the GL Education Center by taking the intention of students into account. After concluding the memorandum which defined the matter required for enforcement, internship activity for one month or more is executed in an acceptance company.
Presentation of the result of internship	1	Submitting a report, and presenting the result of internship.

【Textbook】Not used

【Textbook(supplemental)】Not used

【Prerequisite(s)】Prior matching is performed.

【Independent Study Outside of Class】Not requested.

## 【Web Sites】

【Additional Information】 The internship organized by the Collaborative Education for Next-Generation Innovators & Exploration of Knowledge Intersections is also treated as the internship of this course.

## International Internship in Engineering 1

工学研究科国際インターンシップ 1

【Code】 10i010 【Course Year】 Master and Doctor Course 【Term】 1st+2nd term

【Class day & Period】 Intensive course 【Location】 【Credits】 1 【Restriction】 Defined by each internship program

【Lecture Form(s)】 Exercise 【Language】 English

【Instructor】 Faculty members in charge of educational affairs of the Global Leadership Engineering Education Center and of the department the registrant belongs to.

【Course Description】 Acquisition of international skills with the training of foreign language through the internship programs hosted by the University, the Graduate School of Engineering, or The Department the registrant belongs to.

【Grading】 Merit rating is performed based on the presentation or the report(s) after the participation in each internship program. Each department is responsible to identify the number of credits to be granted to the student of the department, if the credits are included in the mandatory ones. The Global Leadership Engineering Education Center takes the role to evaluate the credits if the department the student belongs to deals the credits as optional ones. The number of credits to be earned is 1 and 2, respectively to the subjects International Internship in Engineering 1 and 2 depending on the period and the contents of the internship program the students has participated in.

【Course Goals】 Acquisition of international skills with the training of foreign language.

【Course Topics】

Theme	Class number of times	Description
Overseas Internship	1	The contents to be acquired should be described in the brochure of each internship program.
Final Presentation	1	A presentation by the student is required followed by discussion among participants.

【Textbook】 Not Applicable

【Textbook(supplemental)】 Not Applicable

【Prerequisite(s)】 Described in the application booklet for each internship program. The registrant is requested to have enough language skills for the participation.

【Independent Study Outside of Class】 Not Applicable

【Web Sites】 Not Applicable

【Additional Information】 It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the department or educational program the student in enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

**International Internship in Engineering 2**

工学研究科国際インターンシップ2

【Code】10i011 【Course Year】Master and Doctor Course 【Term】1st+2nd term

【Class day &amp; Period】Intensive course 【Location】 【Credits】2 【Restriction】Defined by each internship program

【Lecture Form(s)】Exercise 【Language】English

【Instructor】Faculty members in charge of educational affairs of the Global Leadership Engineering Education Center and of the department the registrant belongs to.

【Course Description】Acquisition of international skills with the training of foreign language through the internship programs hosted by the University, the Graduate School of Engineering, or The Department the registrant belongs to.

【Grading】Merit rating is performed based on the presentation or the report(s) after the participation in each internship program. Each department is responsible to identify the number of credits to be granted to the student of the department, if the credits are included in the mandatory ones. The Global Leadership Engineering Education Center takes the role to evaluate the credits if the department the student belongs to deals the credits as optional ones. The number of credits to be earned is 1 and 2, respectively to the subjects International Internship in Engineering 1 and 2 depending on the period and the contents of the internship program the students has participated in.

【Course Goals】Acquisition of international skills with the training of foreign language. Detailed objectives should be described in each program.

## 【Course Topics】

Theme	Class number of times	Description
Overseas Internship	1	The contents to be acquired should be described in the brochure of each internship program.
Final Presentation	1	A presentation by the student is required followed by discussion among participants.

【Textbook】Not Applicable.

【Textbook(supplemental)】Not Applicable.

【Prerequisite(s)】Described in the application booklet for each internship program. The registrant is requested to have enough language skills for the participation.

【Independent Study Outside of Class】Not Applicable.

【Web Sites】Not Applicable.

【Additional Information】It is required for students to check if the internship program to participate in could be evaluated as part of mandatory credits or not and could earn how many credits before the participation to the department or educational program the student is enrolled. If the credit could not be treated as mandatory ones, get in touch with the Global Leadership Engineering Education Center.

**Advanced Japanese A**

日本語上級講座 A

【Code】 10i035 【Course Year】 Master and Doctor Course 【Term】 1st 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】 • To improve presentation skills in Japanese .

• To improve 1) one ' s vocabulary skills, 2) the ability to discuss various topics, and 3) skills in close reading / rapid reading, thereby developing an all-round ability in Japanese.

【Grading】 • The final grade will be based on 1) in-class participation (30%), 2) quizzes, practical skills and a final exam (70%).

• Details of the grading method and evaluation criteria will be provided in class.

【Course Goals】 • To be able to give presentations not only on topics concerning the student ' s specialty, but also on other topics of interest.

• To obtain advanced vocabulary skills and the ability to accurately express oneself in discussion.

**【Course Topics】**

<b>Theme</b>	<small>Class number of times</small>	<b>Description</b>
Reading Conversation Grammar	7	<ul style="list-style-type: none"> <li>• Through close reading of newspaper articles, etc., students will improve their vocabulary skills and reading skills.</li> <li>• Students will discuss about the reading content.</li> <li>• We will address grammatical structures that are misused frequently by Japanese language learners, with the aim of acquiring accurate expression skills.</li> </ul>
Rapid reading conversation Grammar	2	<ul style="list-style-type: none"> <li>• Students will practice doing rapid reading tasks, followed by discussions about the reading content.</li> </ul>
Presentation	5	<ul style="list-style-type: none"> <li>• Each student will give a presentation on his or her research topic or on another topic of interest.</li> </ul>
Final exam	1	
Feedback	1	

**【Textbook】****【Textbook(supplemental)】**

【Prerequisite(s)】 • Be sure to attend all the classes from day one.

• Applicants need to take a placement test before completing class registration. Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】 Students should prepare and study for the quizzes before coming to class each week

**【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/>



**Advanced Japanese B**

日本語上級講座 B

【Code】 10i036 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day &amp; 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】 • To acquire sufficient vocabulary for giving research presentations.

- To improve 1) one's vocabulary skills, 2) the ability to discuss various topics, and 3) skills in close reading / rapid reading, thereby developing an all-round ability in Japanese.

【Grading】 • The final grade will be based on 1) in-class participation (30%), 2) quizzes, practical skills and a final exam (70%).

- Details of the grading method and evaluation criteria will be provided in class.

【Course Goals】 • To acquire skills in expression sufficient for writing a research report.

- To obtain advanced vocabulary skills and the ability to accurately express oneself in discussion.

## 【Course Topics】

Theme	Class number of times	Description
Writing research reports	8	• After learning the expressions necessary for writing research reports, students will practice writing reports using them.
Reading		• Through close reading of newspaper articles, etc., students will improve their vocabulary skills and reading skills.
Conversation	6	• Students will discuss about the reading content.
Grammar		• We will address grammatical structures that are misused frequently by Japanese language learners, with the aim of acquiring accurate expression skills.
Final exam	1	
Feedback	1	

【Textbook】 Handouts will be provided in class.

## 【Textbook(supplemental)】

【Prerequisite(s)】 • Be sure to attend all the classes from day one.

- Applicants need to take a placement test before completing class registration. Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】 Students should prepare and study for the quizzes before coming to class each week.

## 【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 IA

日本語中級講座 A

【Code】10i037 【Course Year】Master and Doctor Course 【Term】1st 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】Institute for Liberal Arts and Sciences, Part-time Lecturer, Shimohashi Miwa

【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/>

- ・ This class is designed for students who have completed Elementary Japanese.
- ・ The purpose of this course is to understand Intermediate I level Japanese grammar, and to develop fundamental skills in the areas of speaking, listening, reading, and writing.

【Grading】・ The student's final grade will be based on 1) in-class participation/attitude, and 2) a final exam.

【Course Goals】Course goals are as follows:

- ・ Expand your vocabulary, and learn the first half of Intermediate I level Japanese sentence patterns.
- ・ To be able to use lower-intermediate level Japanese effectively for campus activities, in all four areas of speaking, listening, reading and writing.

【Course Topics】

Theme	Class number of times	Description
Orientation, Lessons 1 speak and listen	1	“ Making request ”
Lesson 1 read and write	2	“ Tatami ”
Lesson 2 speak and listen	3	“ Ask the meaning of ~ ”
Lesson 2 read and write	4	“ Foreign Loanwords ”
Lesson 3 speak and listen	5	“ Ask for something to be changed ”
Lesson 3 read and write	6	“ Time, Stand still! ”
Review	7	
Lesson 4 speak and listen	8	“ Leaving a message ”
Lesson 4 read and write	9	“ Telephone-Shy ”
Lesson 5 speak and listen	10	“ Giving directions ”
Lesson 5 read and write	11	“ Maps ”
Lesson 6 speak and listen	12	“ obtain permission ”
Lesson 6 read and write	13	“ Mental Training ”
Review	14	
Final Exam	15	
Feedback	16	

【Textbook】『みんなの日本語中級』本冊（スリーエーネットワーク）ISBN：978-4-88319-468-1

【Textbook(supplemental)】『みんなの日本語中級 翻訳・文法解説』各国語版（スリーエーネットワーク）

【Prerequisite(s)】(1) Be sure to attend all the classes from day one.

(2) Applicants need to take a placement test before completing class registration.

Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】Students must study the vocabulary for each lesson before coming to class.

Over the course of the semester, students who are found to have weaknesses in elementary level Japanese are to review the necessary points on their own.

【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 IB**

日本語中級講座 B

【Code】 10i038 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day &amp; 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】 Institute for Liberal Arts and Sciences, Part-time Lecturer Shimohashi Miwa

【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/>

- This class is designed for students who have completed Elementary Japanese.

- The purpose of this course is to understand Intermediate I level Japanese.

grammar, and to develop fundamental skills in the areas of speaking, listening, reading, and writing.

【Grading】 • The student's final grade will be based on 1) in-class participation/attitude, and 2) a final exam.

【Course Goals】 Course goals are as follows:

- Expand your vocabulary, and learn the latter half of Intermediate I level Japanese sentence patterns.

- To be able to use lower-intermediate level Japanese effectively for campus activities, in all four areas of speaking, listening, reading and writing.

【Course Topics】

Theme	Class number of times	Description
Orientation, Lessons 7 speak and listen	1	“ decline an invitation ”
Lesson 7 read and write	2	“ Scared of Bean-Jam Buns! ”
Lesson 8 speak and listen	3	“ Explain the circumstances ”
Lesson 8 read and write	4	“ What do you think of Scientists ”
Lesson 9 speak and listen	5	“ Communicate one ' s wishes ”
Lesson 9 read and write	6	“ Karaoke ”
Review	7	
Lesson 10 speak and listen	8	“ Respond calmly ”
Lesson 10 read and write	9	“ Memory-Type and Attention-Type ”
Lesson 11 speak and listen	10	“ Making suggestions ”
Lesson 11 read and write	11	“ The Legend of the Shirakawa-go Gold ”
Lesson 12 speak and listen	12	“ Apologizing ”
Lesson 12 read and write	13	“ Living in Japan ”
Review	14	
Final Exam	15	
Feedback	16	

【Textbook】 『みんなの日本語中級 』 本冊 (スリーエーネットワーク) ISBN : 978-4-88319-468-1

【Textbook(supplemental)】 『みんなの日本語中級 翻訳・文法解説』 各国語版 (スリーエーネットワーク)

【Prerequisite(s)】 (1) Be sure to attend all the classes from day one.

(2) Applicants need to take a placement test before completing class registration.

Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】 Students must study the vocabulary for each lesson before coming to class.

Over the course of the semester, students who are found to have weaknesses in elementary level Japanese are to review the necessary points on their own.

【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 A

日本語中級講座 A

【Code】 10i039 【Course Year】 Master and Doctor Course 【Term】 1st 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. Paliwadana Ruchira, Institute for Liberal Arts and Sciences

【Course Description】 The purpose of this course is to understand Intermediate level Japanese grammar, and to develop fundamental skills in the areas of speaking, listening, reading, and writing.

We will cover lessons 13 to 18 this semester.

Please, refer to the "Course Topics" below for the details of the course. The schedule may change depending on students' abilities.

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】・ The student's final grade will be based on 1) in-class participation/attitude, and 2) a mid-term exam and final exam.

・ Details of the grading method and evaluation criteria will be provided in class.

【Course Goals】 Course goals are as follows.

1. To develop reading comprehension abilities sufficient for understanding various written materials such as newspaper articles and essays.
2. To acquire speaking and listening abilities necessary for presentations and discussions as well as daily communication.

【Course Topics】

Theme	Class number of times		Description
Guidance, L13	2	Week 1	Guidance, L13: Reading essays and learning related grammatical expressions
		Week 2	L13: Speaking about and listening to episodes, learning how to continue a conversation
L14	2	Week 3	L14: Reading commentaries and learning related grammatical expressions
		Week 4	L14: Eliciting responses and enhancing a conversation, expressing impressions
L15	2	Week 5	L15: Reading explanatory information and learning related grammatical expressions
		Week 6	L15: Praising and being humble, linking or ending conversations
Review session and mid-term exam	1	Week 7	Review L13 -15, mid-term exam
L16	2	Week 8	L16: Reading newspaper articles and learning related grammatical expressions
		Week 9	L16: Explaining personal experiences
L17	2	Week 10	L17: Reading explanatory texts and learning related grammatical expressions
		Week 11	L17: Adjusting one's style of speech based on who is in the conversation
L18	2	Week 12	L18: Reading novels and learning related grammatical expressions
		Week 13	L18: Making apologies, retorts and complaints
Review session and final exam	2	Week 14	Review L16-18
		Week 15	Final Exam

【Textbook】『みんなの日本語中級』 本冊 (スリーエーネットワーク) ISBN:978-88319-737-8

【Textbook(supplemental)】『みんなの日本語中級』 翻訳・文法解説 各国語版 (スリーエーネットワーク)

【Prerequisite(s)】・ Be sure to attend all the classes from day one.

・ Applicants need to take a placement test before completing class registration. Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】 Students are expected to study the grammar and vocabulary in each lesson using "Minna no Nihongo Intermediate Translation and Grammatical Notes" before coming to 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 A**

## 日本語中級講座 B

【Code】 10i040 【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. Paliwadana Ruchira, Institute for Liberal Arts and Sciences

【Course Description】 The purpose of this course is to understand Intermediate level Japanese grammar, and to develop fundamental skills in the areas of speaking, listening, reading, and writing.

We will cover lessons 19 to 24 this semester.

The schedule given below may change depending on students' abilities.

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】 • The student's final grade will be based on 1) in-class participation/attitude, and 2) a mid-term exam and final exam.

• Details of the grading method and evaluation criteria will be provided in class.

【Course Goals】 Course goals are as follows.

1. To develop reading comprehension abilities sufficient for understanding various written materials such as newspaper articles and essays.
2. To acquire speaking and listening abilities necessary for presentations and discussions as well as daily communication.

【Course Topics】

Theme	Class number of times		Description
Guidance, L19	2	Week 1	Guidance, L19: Reading factual sentences and learning related grammatical expressions
		Week 2	L19: Speaking about and listening to experiences and impressions, practicing ad-lib speeches
L20	2	Week 3	L20: Reading newspaper articles and learning related grammatical expressions
		Week 4	L20: Practicing interviews
L21	2	Week 5	L21: Reading assertions and opinions and learning related grammatical expressions
		Week 6	L21: Making speeches and presenting factual evidence
Review, mid-term exam	1	Week 7	Review L19 -21, mid-term exam
L22	2	Week 8	L22: Reading letters & invitations and learning related grammatical expressions
		Week 9	L22: Discussing and exchanging opinions
L23	2	Week 10	L23: Reading articles and learning related grammatical expressions
		Week 11	L23: Giving speeches on one's opinions
L24	2	Week 12	L24: Reading essays and learning related grammatical expressions
		Week 13	L24: Interviews
Review, final exam	2	Week 14	Review L22-24
		Week 15	Final Exam

【Textbook】 『みんなの日本語中級』 本冊（スリーエーネットワーク）ISBN:978-88319-737-8

【Textbook(supplemental)】 『みんなの日本語中級』 翻訳・文法解説 各国語版（スリーエーネットワーク）

【Prerequisite(s)】 • Be sure to attend all the classes from day one.

• Applicants need to take a placement test before completing class registration. Please check the website of the Institute for Liberal Arts and Sciences (ILAS) for the test schedule.

【Independent Study Outside of Class】 Students are expected to study the grammar and vocabulary in each lesson using “Minna no Nihongo Intermediate Translation and Grammatical Notes” before coming to 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 A**

ビジネス日本語講座 A

【Code】 10i012 【Course Year】 Master and Doctor Course 【Term】 1st term 【Class day &amp; Period】 Thu 2nd

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

【Language】 Japanese 【Instructor】 Institute for Liberal Arts and Sciences, Part-time Lecturer, Miho Kadonaga

【Course Description】 This course aims to develop Japanese language abilities applicable in business situations for advanced Japanese learners who are interested in working for Japanese companies or Japanese-affiliated companies.

【Grading】 Evaluation will be based on homework 20%, contribution to the class 30%, and class participation (including manners) 50%.

【Course Goals】

- To learn basic business styles useful in job hunting.

- To learn vocabulary and honorific expressions used in business.
- To deepen your knowledge about Japanese companies.
- To learn about the cultural background and the way of thinking underlying the language.

## 【Course Topics】

Theme	Class number of times	Description
Information I	1	international student employment trends in Japan
Self-introduction	2	your strengths in college, strong and weak points
Information II	1	researching and learning about the business world and companies
Writing application forms, addressing envelope	2	writing entry sheets, CVs, cover letters
Writing effective e-mails	2	making inquiries, scheduling interviews, etc.
Telephone conversations	2	making inquiries, scheduling interviews, etc.
Information III	1	researching and learning about the business world and companies
Preparing for interviews	2	group interviews, individual interviews, group discussions, personal appearance
Information	1	written tests, job fairs, joint company information sessions
Review	1	review

## 【Textbook】

【Textbook(supplemental)】 Advice on how to prepare for written tests will be given in class as needed.

【Prerequisite(s)】 Advanced level Japanese ability or the equivalent (equivalent to the JLPT N1 or N2 levels)

【Independent Study Outside of Class】 Students are expected to apply the skills and knowledge gained to their job-hunting activities.

## 【Web Sites】

## 【Additional Information】

**Business Japanese B**

ビジネス日本語講座 B

【Code】 10i013 【Course Year】 Master and Doctor Course 【Term】 2nd term 【Class day &amp; Period】 Thu 2nd

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

【Language】 Japanese 【Instructor】 Institute for Liberal Arts and Sciences, Part-time Lecturer, Miho Kadonaga

【Course Description】 This course aims to develop Japanese language abilities applicable in business situations for advanced Japanese learners who are interested in working for Japanese companies or Japanese-affiliated companies.

【Grading】 Evaluation will be based on homework 20%, contribution to the class 30%, and class participation (including manners) 50%.

【Course Goals】

- To learn basic business styles useful in Japanese companies.

- To learn vocabulary and honorific expressions used in business.
- To deepen your knowledge about Japanese companies.
- To learn about the cultural background and the way of thinking underlying the language.

## 【Course Topics】

Theme	Class number of times	Description
Information I	1	Utilization of foreign employees in the Japanese companies
Japanese business phrases	2	Japanese honorific, spoken words and written words
Telephone conversations	2	making and receiving calls
Writing e-mails	3	e-mail forms within the office and outside the office
Writing	2	writing report, proposal, taking the minutes writing cover letter, request paper, etc.
Information II	1	visas and working permits Japanese social security system
Visiting companies	1	inquiring at reception, greeting, exchange business cards, etc.
Receiving visitors	1	introducing, leading the way, order of precedence, etc.
Information III	1	Japanese business custom, personnel-management system, etc.
Review	1	Review

## 【Textbook】

【Textbook(supplemental)】 Supplementary material will be given in class as needed.

【Prerequisite(s)】 Advanced level Japanese ability or the equivalent (equivalent to the JLPT N1 or N2 levels)

【Independent Study Outside of Class】 Students are expected to practice the skills and knowledge gained to their ordinary activities.

## 【Web Sites】

## 【Additional Information】

工学研究科シラバス 2017 年度版  
( [A] Common Subjects of Graduate School of Engineering )  
Copyright ©2017 京都大学工学研究科  
2017 年 4 月 1 日発行 ( 非売品 )

---

編集者 京都大学工学部教務課  
発行所 京都大学工学研究科  
〒 615-8530 京都市西京区京都大学桂

---

デザイン 工学研究科附属情報センター



## 工学研究科シラバス 2017 年度版

- ・ [A] Common Subjects of Graduate School of Engineering
- ・ [B] Master's Program
- ・ [C] Advanced Engineering Course Program
- ・ [D] Interdisciplinary Engineering Course Program
- ・ オンライン版 <http://www.t.kyoto-u.ac.jp/syllabus-gs/>

本文中の下線はリンクを示しています。リンク先はオンライン版を参照してください。

オンライン版の教科書・参考書欄には 京都大学蔵書検索 (KULINE) へのリンクが含まれています。

