SYLLABUS *2010*

[A] Common Subjects of Graduate School of Engineering

Kyoto University, Graduate School of Engineering

[A] Common Subjects of Graduate School of Engineering

Common Subject

Subjects Corresponded to Internationalization

Subjects Opened to Other Departments

Subjects Related to Projects

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】1st term 【Class day & Period】Wed 5th

【Location】Katsura Hall 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture

【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	14	

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D052

Frontrunners in Science and Technology

21 世紀を切り拓く科学技術 (ﾌﾛﾝﾄﾗﾝﾅｰ講座)

【Code】10D052 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Wed 5th

【Location】Katsura Hall 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Relay Lecture

【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i009

産学連携研究型インターンシップ

【Code】10i009【Course Year】【Term】1st+2nd term【Class day & Period】【Location】【Credits】【Restriction】

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D053

Science & Technology ” International Leadership

科学技術国際リーダーシップ論

【Code】10D053 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】【Location】

【Credits】2 【Restriction】 【Lecture Form(s)】 【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D040

Exercise in Practical Scientific English

実践的科学英語演習「留学ノススメ」

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

【Credits】1 【Restriction】 【Lecture Form(s)】Seminar 【Language】English 【Instructor】Kenji Wada. etc

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

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

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

【Course Topics】

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

【Textbook】No textbook is required.

【Textbook(supplemental)】

【Prerequisite(s)】

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

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

10i029

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 2nd - 3rd 【Location】Seminar Room at Katsura 【Credits】2 【Restriction】No Restriction

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i031

Intermediate Japanese I

日本語中級講座Ⅰ

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

【Class day & Period】Wed 3rd - 4th 【Location】Seminar Room at Katsura 【Credits】2

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

【Instructor】Lect. (part-time) Sakaue

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i033

Intermediate Japanese II

日本語中級講座II

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

【Class day & Period】Mon 3rd - 4th 【Location】Seminar Room at Katsura 【Credits】2

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

【Instructor】Lect. (part-time) Shimohashi

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i005

Business Japanease I

ビジネス日本語講座Ⅰ

【Code】10i005 【Course Year】Master and Doctor Course 【Term】2nd term

【Class day & Period】Thu 3rd - 4th 【Location】Seminar Room A at Katsura 【Credits】2 【Restriction】

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Lect. (part-time) Kurihara

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i006

Business Japanease II

ビジネス日本語講座 II

【Code】10i006 【Course Year】Master and Doctor Course 【Term】1st term

【Class day & Period】Thu 3rd - 4th 【Location】Seminar Room A at Katsura 【Credits】2 【Restriction】

【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Lect. (part-time) Kurihara

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i007

Exercise in International Science and Technology Communication

科学技術国際コミュニケーション演習

【Code】10i007 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Tue 5th
【Location】Seminar Room at Katsura, Consultation Room at Yoshida 【Credits】1 【Restriction】No Restriction
【Lecture Form(s)】Seminar and Exercise 【Language】English
【Instructor】Juha Lintuluoto (Dr. Eng.) and Darren Wall (PhD)
【Course Description】Topics on:

The core emphasis of the lecture is on understanding how to communicate in global society and industry. Communication plays an important role for engineers, so you will learn any necessity for improving your communication abilities through the practical presentations, debates, exercises, as discussed below:

-Risk Communication in (Chemical) Industry

-Fundamental Communication Techniques, and Ethical Issues in Scientific and Technical Communication

【Grading】
【Course Goals】
【Course Topics】

Theme	Class number of times	Description
Risk Communication in (Chemical) Industry	Lect.1	Introduction & Effectively Communicating Risk Information
	Lect.2	Risk Communication: Actions vs. Words
	Lect.3	Guidelines for Presenting and Explaining Risk-Related Numbers and Statistics
	Lect.4	Guidelines for Providing and Explaining Risk Comparisons
	Lect.5	Concrete Examples of Risk Comparisons
	Lect.6&7	Simulated Conference about Industrial Hazard Explanation (Group Work)
Fundamental Communication Techniques, and Ethical Issues in Scientific and Technical Communication	Lect.1	Fundamental Technical and Scientific Communication Skills
	Lect.2	Student Presentations
	Lect.3	An Introduction to Scientific and Engineering Ethics
	Lect.4	Framing, Analysing and Resolving Ethical problems I
	Lect.5	Framing, Analysing and Resolving Ethical problems II
	Lect.6	Extended Case Studies and Worked Examples
	Lect.7	Special Topics in Ethics in Scientific Communication

【Textbook】We will let you know, if necessary.
【Textbook(supplemental)】We will let you know, if necessary.
【Prerequisite(s)】
【Web Sites】None
【Additional Information】Note:

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

-This course is held in English

10K001

Introduction to Advanced Material Science and Technology

先端マテリアルサイエンス通論

【Code】10K001

【Course Year】Special Auditors, Special research Students, Graduate School Students (inc. International Course Students)

【Term】1st term

【Class day & Period】Starting from April 16, the lecture will be held from 2:45 p.m. to 4:15 p.m. on Friday afternoon but some lectures are from 4:30 p.m.

【Location】Distance lectures are held between Lecture Room 1 in Engineering Bld. 8 at Yoshida campus and Seminar Room 131 in Bld. A1 at Katsura campus. Attend either of them at your convenience.

【Credits】2 【Restriction】 【Lecture Form(s)】Relay Lecture 【Language】English 【Instructor】

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

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

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
	15	

【Textbook】None

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10K004

New Engineering Materials, Adv.

新工業素材特論

【Code】10K004 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Thu 5th 【Location】 【Credits】2 【Restriction】 【Lecture Form(s)】Relay Lecture 【Language】English 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F067

Structural Stability

構造安定論

【Code】10F067 【Course Year】Master 1st 【Term】2nd term 【Class day & Period】Mon 2nd

【Location】C1-171 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese

【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10K008

Computational Mechanics and Simulation

計算力学及びシミュレーション

【Code】10K008 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Tue 2nd 【Location】C1-173 【Credits】2 【Restriction】No Restriction 【Lecture Form(s)】Lecture and Exercises 【Language】English 【Instructor】Shirato, Gotoh, Murata, Liang

【Course Description】The process to obtain numerical solutions for various problems in compuational mechanics. Descretization and some solvinng technique for initial/boundary value problems is to be introdeced by the FEM, FDM, VM and PM with programming exercises. Statistical mechanics, molecular dynamics, Monte Carlo method and Multiple scale model will be shortly introduced in order to understand the basic theory of molecular dynamics simulation. Their application to engineering problems are to be also given by showing some up-to-date examples. As one of the dynamic response analysis of engineering structures, evaluation method of Wind-induced response is to be introduced with practical expmaples. Current technology of the particle method by is to be explained on the violent flow phenomena with free surface. The prticular subjects in PM such as mometum conservation and convection of pressure disturbance by numerical instability, etc. will be inntroduced. This course will be given in English.

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

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Solving boundary value problem by FEM	4	
Homogenization technique and FEM	4	Homogenization method with FEM will be lectured in this item. It is used for obtaining the equivalent homogenized material constants of an anisotropic composit material to be analyzed. The method to obtain homogenized elastic coefficient tensor will be especially focused on.
Molecular dynamics simulation		
Random vibration analysis of enngineering structures in turbulent flow	2	Theories onn frequency and spectrum analysis, linear system, potential flow, unsteady airfoil, random vibration and extreme value will be digested which are the basis of the above-mentioned response analysis.
Free surface flow analysis by particle method	4	Current technology of the particle method by is to be explained on the violent flow phenomena with free surface. The prticular subjects in PM such as mometum conservation and convection of pressure disturbance by numerical instability, etc. will be inntroduced.

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10K016

Computational Geotechnics

計算地盤工学

【Code】10K016 【Course Year】 【Term】2nd term 【Class day & Period】Fri 2nd 【Location】C1-172

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F203

Public Finance

公共財政論

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

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

【Instructor】Kobayashi, Matsushima

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

【Grading】Final Exam: 60-70%
Mid-term Exam and Attendance: 30-40%

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Introduction	1	
GNP and Social Accounting	2	
AD-AS Model	3	
IS-LM Model	2	
Monetary Policies	2	
International Economics	2	
Economic Growth Model	2	

【Textbook】

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

【Prerequisite(s)】Basic Microeconomics

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

【Additional Information】

10F223

Risk Management Theory

リスクマネジメント論

【Code】10F223 【Course Year】Master 1st 【Term】2nd term 【Class day & Period】Tue 1st

【Location】C1-173 【Credits】2 【Restriction】 【Lecture Form(s)】 【Language】English 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F219

Quantitative Methods for Behavioral Analysis

人間行動学

【Code】10F219 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Mon 5th

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

【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F261

Earthquake Engineering/Lifeline Engineering

地震・ライフライン工学

【Code】10F261 【Course Year】 【Term】1st term 【Class day & Period】Tue 1st 【Location】C1-191

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F456

New Environmental Engineering I, Advanced

新環境工学特論 I

【Code】10F456 【Course Year】 【Term】1st term 【Class day & Period】Mon 5th

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

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10F458

New Environmental Engineering II, Advanced

新環境工学特論 II

【Code】10F458 【Course Year】 【Term】2nd term 【Class day & Period】Mon 5th 【Location】Reserch Bldg.No.5-Lecture Room(2nd floor)/C1-171

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

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

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

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

【Course Goals】

【Course Topics】

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

【Textbook】Class handouts

【Textbook(supplemental)】Introduce in the lecture classes

【Prerequisite(s)】

【Web Sites】

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

10i017

Architecture Communication

建築学コミュニケーション（専門英語）

【Code】10i017 【Course Year】【Term】1st term 【Class day & Period】【Location】【Credits】【Restriction】

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10G205

Microsystem Engineering

マイクロシステム工学

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

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

【Language】English 【Instructor】O. Tabata, H. Kotera, I. Kannno, T. Tsuchiya

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

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

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

【Course Topics】

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

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

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

10K013

Advanced Mechanical Engineering

先端機械システム学通論

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

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

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10C076

Fundamentals of Magnetohydrodynamics

基礎電磁流体力学

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

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

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

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

【Grading】Attendance and two reports

【Course Goals】

【Course Topics】

Theme	Class number of times	Description
Liquid Metal MHD	6	
Plasma MHD	6	

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

【Textbook(supplemental)】

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

【Web Sites】

【Additional Information】

10C611

Computer Simulations of Electrodynamics

電磁界シミュレーション

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

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

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10K010

Recent Advances in Electrical and Electronic Engineering

先端電気電子工学通論

【Code】10K010 【Course Year】Doctor Course 【Term】2nd term 【Class day & Period】Tuesday, 5

【Location】Laboratories 【Credits】2 【Restriction】Foreig students 【Lecture Form(s)】Seminar

【Language】English 【Instructor】

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

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

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】None

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i024

Frontier of Coordination chemistry

合成・生物化学の最前線

【Code】10i024 【Course Year】【Term】1st term 【Class day & Period】【Location】【Credits】【Restriction】

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i027

Chemical Engineering for Advanced Materials

先端物質化学工学

【Code】10i027 【Course Year】Master Course 【Term】1st+2nd term 【Class day & Period】 【Location】

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

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10C084

Nuclear Engineering, Adv.

原子核工学最前線

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

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

【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10R804

Seminar on Creation of New Industries

新産業創成論

【Code】10R804 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Mon 5th 【Location】VBL Seminar Room 【Credits】2 【Restriction】 【Lecture Form(s)】Lecture 【Language】Japanese

【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D638

Advanced Seminar on Polymer Industry

高分子産業特論

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

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

【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D043

Instrumental Analysis, Adv. I

先端科学機器分析及び実習 I

【Code】10D043 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】

【Location】A2-304 【Credits】1 【Restriction】 【Lecture Form(s)】 【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10D046

Instrumental Analysis, Adv. II

先端科学機器分析及び実習 II

【Code】10D046 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】

【Location】A2-304 【Credits】1 【Restriction】 【Lecture Form(s)】 【Language】Japanese 【Instructor】

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i002

Information and Communications Technology for Sustainable Society

ICT と持続性社会

【Code】10i002 【Course Year】Master and Doctor Course 【Term】1st term 【Class day & Period】Thu 5th

【Location】Consultation Room for Students at Yoshida and Seminar Room at Katsura 【Credits】2 【Restriction】

【Lecture Form(s)】Lecture 【Language】Japanese

【Instructor】Mr. Sone, Prof. Sawaragi, Senr Lect. Yamamoto, Senr Lect. Wada, and so on

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10i003

Introduction to Entrepreneurship

アントレプレナー概論

【Code】10i003 【Course Year】Master and Doctor Course 【Term】2nd term 【Class day & Period】Fri 4th

【Location】Consultation Room for Students at Yoshida and Seminar Room at Katsura 【Credits】2

【Restriction】No Restriction 【Lecture Form(s)】Lecture 【Language】Japanese 【Instructor】Mr. Yamamoto

【Course Description】

【Grading】

【Course Goals】

【Course Topics】

Theme	Class number of times	Description

【Textbook】

【Textbook(supplemental)】

【Prerequisite(s)】

【Web Sites】

【Additional Information】

10Z001

Urban Transport Policy

都市交通政策フロントランナー講座

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

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

【Location】2nd floor conference room, UPL karasuma office 【Credits】1

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

【Instructor】Ryoji Matsunaka, Dai Nakagawa, JongJin Yoon, and Tetsuharu Oba

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

【Grading】evaluation by attendance and class participation

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

【Course Topics】

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

【Textbook】No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

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

【Additional Information】

10Z002

Policy for Low-Carbon Society

低炭素都市圏政策論

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

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

【Location】2nd floor conference room, UPL karasuma office 【Credits】1

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

【Instructor】Dai Nakagawa, Eiichi Taniguchi, Masashi Kawasaki, Yasunaga Wakabayashi, JongJin Yoon

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

【Grading】evaluation by attendance and class participation

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

【Course Topics】

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

【Textbook】No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

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

【Additional Information】

10Z003

Urban Transport Management

都市交通政策マネジメント

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

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

【Location】2nd floor conference room, UPL karasuma office 【Credits】1

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

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

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

【Grading】evaluation by attendance and class participation

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

【Course Topics】

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

【Textbook】No textbook

【Textbook(supplemental)】

【Prerequisite(s)】

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

【Additional Information】

工学研究科シラバス 2010 年度版
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- [A] Common Subjects of Graduate School of Engineering
- [B] Master's Program
- [C] Interdisciplinary Engineering Course Program (5yr Course)
- [D] Advanced Engineering Course Program (5yr Course)
- [E] Interdisciplinary Engineering Course Program (3yr Course)
- [F] Advanced Engineering Course Program (3yr Course)
- **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．

京都大学工学研究科 2010.4