Guidance for the First Year Students in Master's Program

(The abridged translation for students of international course in Management of Civil Infrastructure and international course in Urban and Regional Development)

Dept. of Civil and Earth Resources Engineering

Dept. of Urban Management

13:00 - 14:00, Friday 3rd April 2015

Room C1-191 on Katsura Campus

Content

Dept. of Civil and Earth Resources Eng. and Dept. of Urban Management
Guidance for The First Year Students in Master's Program
(Date: 13:00 - 14:00, Friday 3rd April 2015, Location: Room C1-191 on Katsura Campus)

(1) **Message from The Heads of Departments** [13:00 - 13:10 (approx.): Opening Remarks and Introduction of Staff]

- The Heads of Departments
  Prof. Keiichi Toda (Civil and Earth Resources Eng., Room C1-2-255)
  Prof. Satoshi Fujii (Urban Management, Room C1-2-432)
- Educational Affairs
  Assoc. Prof. Tada-nori Goto (Urban Management, Room C1-2-216)
- Assistants to Educational Affairs
  Assoc. Prof. Yosuke Higo (Urban Management, Room C1-2-211)

(2) **Overview of Handouts** [13:10 - 13:15 (approx.)]

- See Japanese version. Refer also English translation.

(3) **Instructions on Registration** [Educational Affairs, 13:15 - 13:40 (approx.)]

- **Requirements for Completion** and Credits (Educational Guidelines: Master's Degree in Civil and Earth Resources Eng. (pp.8-12), Master's Degree in Urban Management (pp.13-17)
  - ① Credits for Each Category, ② Required Subjects (for Both Departments), ③ Required Electives (for Urban Management), ④ More Than 30 Credits (Total) and Master Thesis, ⑤ Required Subjects for Each Division, ⑥ More Than 20 Credits from The List of Subjects, etc.
- Notes on Subjects Offered by Other Departments, Graduate Schools, and Faculties
  - Students can register, with an approval of the supervisor, to subjects offered by ① other Departments and ② other Graduate Schools (needs to submit application for audit).
  - Students can also register to those offered by other Faculties by submitting an application for audit (as a general rule, credits from these subjects will not be counted towards the 30 credits required for completion of Degree).
- Seminar on Urban Management A & B and Seminar on Infrastructure Engineering A & B
  - Required Points: Three a year and more than 10 points in two years.
- Information on First Lectures of Some Subjects

Subject	Date	Time	Location
Capstone Projects	9th April (Thu)	10:30-	Roon C1-173 (Katsura Campus)
Exercise on Project Planning	9th April (Thu)	13:00-	Roon C1-173 (Katsura Campus)
Internship on Infrastructure Engineering (for Civil and Earth Resources Eng.) & Long-Term Internship (for Urban Management)	9th April (Thu)	14:00-	Roon C1-173 (Katsura Campus)
Information Technology for Urban Society	9th April (Thu)	8:45-	Roon C1-192 (Katsura Campus)

- Practice in Urban Management and Practice in Infrastructure Engineering
- Notes on Subjects Offered Every Two Years and Those Offered in English (Semester/Year Offered)
- Courses and Certificates
- Application to Doctoral Program (Information Session Scheduled On 4th June, 3PM)
- Code of Ethics/Conduct: How violation of codes of (research) ethics and misconducts are handled and cautionary notes on report examinations.

- **Registration Card**
  - Make sure to register: Students are not permitted to take an examination without registration.
  - Register only for the first semester of the first year. Note that students need to obtain an approval from their supervisors to register (including his/her seal). Register for the remaining semesters during the designated registration period of the respective semester. Use the blank section on the form to register for subjects offered by other Departments. Students need to obtain an application for audit from the Admin Office to register for subjects offered by other Graduate Schools. Make sure to consult your supervisor when taking subjects offered by other Departments and Graduate Schools.
  - Registration for This Semester: Submit the Registration Form to Educational Affairs of C Cluster Office between 8th April and 13rd April 2015
- **Portfolio**
  - To fill in the research plan (i.e. portfolio), MS word should be used. The signatures by your supervisors must be original handwriting.
  - Submit the Portfolio by e-mail.
  - Students pursing Master's Course in Civil and Earth Resources Eng. (Two-Year only) do not need to select sub-supervisors.
  - The form of the portfolio is on the web page at the Department of Urban Management. http://www.um.t.kyoto-u.ac.jp/ja/oncampus/kyomu2015
- Honorable Urban Management Engineer Prize (HUME prize)
- **Medical Checkup** (To Be Announced)
  - Items Required: Questionnaire Sheet (to be enclosed in a packet), Urinalysis Container (urinalysis taken on the early morning of the checkup), and Student ID
  - Dates and Locations: Students are to have the checkup on the campus they mainly study. However, it is also offered on Yoshida Campus (please check the details by yourself).

Campus	Date	Location	Notes
Katsura	10th April (Fri) Female: 9:30-10:00 13:15-13:45 Male: 10:15-11:30 14:00-15:30	Funai Center (Second Floor)	For Students on Katsura Campus
Uji	8th April (Wed) Female: 9:30-10:00 Male: 10:15-11:30	Wood Composite Hall (Third Floor)	For Students on Uji Campus

- Japan Student Services Organization Scholarship: Visit C Cluster Office for details.

(4) **Others** [13:40 - 13:50]

(5) **Seminar on Safety Education** [14:00 - 15:30]
- Attendance is required.

Class Schedule for the Dept. of Civil and Earth Resources Eng./Urban Management
Note: The official version is written in Japanese. This is just for your reference.

1st semester		Master's Program				Doctoral Program	
		Department of Civil and Earth Resources Engineering		Department of Urban Management		Department of Civil and Earth Resources Engineering	Department of Urban Management
Mon.	1	○River Basin Management of Flood and Sediment (H.Nakagawa , Sumi, Kawaike, Takebayashi) Katsura C1-173 To be held in 2015 (biennial)	Environmental Geotechnics (Katsumi, Imai) Katsura C1-192 Yoshida Bldng.8 Rm.1	○River Basin Management of Flood and Sediment (H.Nakagawa , Sumi, Kawaike, Takebayashi) Katsura C1-173 To be held in 2015 (biennial)	Environmental Geotechnics (Katsumi, Imai) Katsura C1-192 Yoshida Bldng.8 Rm.1		
	2	Continuum Mechanics (Sugiura, Yagi) Katsura C1-192	Sediment Hydraulics (H.Gotoh , E.Harada) Katsura C1-171	Continuum Mechanics (Sugiura, Yagi) Katsura C1-192	Sediment Hydraulics (H.Gotoh , E.Harada) Katsura C1-171		
		Geomechanics (Mimura, Kimoto) Katsura C1-172	Urban Environmental Policy (D.Nakagawa , Matsunaka) Katsura C1-173	Geomechanics (Mimura, Kimoto) Katsura C1-172	Urban Environmental Policy (D.Nakagawa , Matsunaka) Katsura C1-173		
	3	□Disaster Mitigation for Sustainable Basin Environment (Fujita, Hiraishi, Takemon, Tsutsumi, Baba) Katsura C1-191 To be held in 2016 (biennial)	○Hydro-meteorological Disaster Prevention (Takara, Nakakita, Sayama) Katsura C1-191 To be held in 2015 (biennial)	□Disaster Mitigation for Sustainable Basin Environment (Fujita, Hiraishi, Takemon, Tsutsumi, Baba) Katsura C1-191 To be held in 2016 (biennial)	○Hydro-meteorological Disaster Prevention (Takara, Nakakita, Sayama) Katsura C1-191 To be held in 2015 (biennial)		
			◎Urban Infrastructure Management (Ohtsu and related instructors) Katsura C1-117		◎Urban Infrastructure Management (Ohtsu and related instructors) Katsura C1-117		
	4	◎Case Studies Harmonizing Disaster Management and Environment Conservation (Takara, H.Nakagawa , Nakakita, Mase, Mori) Katsura C1-191	◎Public Finance (K.Kobayashi, Matsushima) Katsura C1-173	◎Case Studies Harmonizing Disaster Management and Environment Conservation (Takara, H.Nakagawa , Nakakita, Mase, Mori) Katsura C1-191	◎Public Finance (K.Kobayashi, Matsushima) Katsura C1-173	Integrated Seminar on Infrastructure Engineering (Related instructors) Katsura C1-171	Integrated Seminar on Urban Management (Related instructors) Katsura C1-171
		◎Geo-Risk Management (Ohtsu) Katsura C1-172		◎Geo-Risk Management (Ohtsu) Katsura C1-172			
	5	Public Psychology for Human Behaviour (S.Fujii) Katsura C1-173	Fundamental Theories in Geophysical Exploration (Mikada, T.Goto) Katsura C1-173	Public Psychology for Human Behaviour (S.Fujii) Katsura C1-173	Fundamental Theories in Geophysical Exploration (Mikada, T.Goto) Katsura C1-173		
Tue.	1	Structural Dynamics (Igarashi, Furukawa) Katsura C1-172	○Water Resources Systems (Hori, K.Tanaka) Katsura C1-192 To be held in 2015 (biennial)	Structural Dynamics (Igarashi, Furukawa) Katsura C1-172	○Water Resources Systems (Hori, K.Tanaka) Katsura C1-192 To be held in 2015 (biennial)		
		◎Fundamental Geofront Engineering (Mimura, Kimura,Higo) Katsura C1-173		◎Fundamental Geofront Engineering (Mimura, Kimura,Higo) Katsura C1-173			
	2	◎Computational Mechanics and Simulation (Ishida, Furukawa, Froles, Liang) Katsura C1-173	Remote Sensing and Geographic Information System (Tamura , Susaki) Katsura C1-117	◎Computational Mechanics and Simulation (Ishida, Furukawa, Froles, Liang) Katsura C1-173	Remote Sensing and Geographic Information System (Tamura , Susaki) Katsura C1-117		
	3	Applied Mathematics in Civil & Earth Resources Engineering (Tsukada, Saito) Katsura C1-192		Applied Mathematics in Civil & Earth Resources Engineering (Tsukada, Saito) Katsura C1-192			
	4	◎Earthquake Engineering/Lifeline Engineering (Kiyono, Igarashi) Katsura C1-191		◎Earthquake Engineering/Lifeline Engineering (Kiyono, Igarashi) Katsura C1-191			
	5						
Wed.	1	Ecomaterial and Environment-friendly Structures (Kawano, Hattori) Katsura C1-117	River Management (Hosoda, Kishida) Katsura C1-173	Ecomaterial and Environment-friendly Structures (Kawano, Hattori) Katsura C1-117	River Management (Hosoda, Kishida) Katsura C1-173		
		★Emergency Management Systems (H.Hayashi, Suzuki) Faculty of Engineering Integrated Research Bldg Rm213		★Emergency Management Systems (H.Hayashi, Suzuki) Faculty of Engineering Integrated Research Bldg Rm213			
	2	◎Material and Structural System & Management (Kawano, Hattori, T.Yamamoto) Katsura C1-173	Environmental Geosphere Engineering (K. Koike) Katsura C1-171	◎Material and Structural System & Management (Kawano, Hattori, T.Yamamoto) Katsura C1-173	Environmental Geosphere Engineering (K. Koike) Katsura C1-171		
		□ Coastal and Urban Water Disasters Engineering (Mase, Igarashi, Yoneyama, Mori) Katsura C1-192 To be held in 2016 (biennial)	Urban Trasport Policy (D.Nakagawa, Mtsunaka, Oba, Matsubara, other related instructors) (outside campus, refer Urban Policy Unit for Low-Carbon Society)	□ Coastal and Urban Water Disasters Engineering (Mase, Igarashi, Yoneyama, Mori) Katsura C1-192 To be held in 2016 (biennial)	Urban Trasport Policy (D.Nakagawa, Mtsunaka, Oba, Matsubara, other related instructors) (outside campus, refer Urban Policy Unit for Low-Carbon Society)		
	3	Hydrodynamics and Turbulence Mechanics (Toda, Sanjou, Okamoto) Katsura C1-191	◎City Logistics (E.Taniguchi, Qureshi) Katsura C1-172	Hydrodynamics and Turbulence Mechanics (Toda, Sanjou, Okamoto) Katsura C1-191	◎City Logistics (E.Taniguchi, Qureshi) Katsura C1-172		
		★Disaster Information (Tatano, Yamori, Hatayama) Eng. Bldg.2 room101	◎Measurement in The Earth's Crust Environment (T.Asakura, Ishida, N.Yamamoto) Katsura C1-192	★Disaster Information (Tatano, Yamori, Hatayama) Eng. Bldg.2 room101	◎Measurement in The Earth's Crust Environment (T.Asakura, Ishida, N.Yamamoto) Katsura C1-192		
		Policy for Low-Carbon Society (Taniguchi, D. Nakagawa, Matsubara, and other related instructors) (outside campus, refer Urban Policy Unit for Low-Carbon Society)		Policy for Low-Carbon Society (Taniguchi, D. Nakagawa, Matsubara, and other related instructors) (outside campus, refer Urban Policy Unit for Low-Carbon Society)			
	4	◎Applied Hydrology (Hori, Sumi, S.Tanaka, Takemon, K.Tanaka, Kantoush) Katsura C1-172	◎Disaster Risk Management (Tatano, Curz, Yokomatsu) Research Bldg. 5 Main Lecture Rm 2F, Katsura 171(remote class)	◎Applied Hydrology (Hori, Sumi, S.Tanaka, Takemon, K.Tanaka, Kantoush) Katsura C1-172	◎Disaster Risk Management (Tatano, Curz, Yokomatsu) Research Bldg. 5 Main Lecture Rm 2F, Katsura 171(remote class)		
		Urban Transport Management (D. Nakagawa, Fujii, Uno, Matsubara and other related instructors)(outside campus, refer Urban Policy Unit for Low-Carbon Society)		Urban Transport Management (D. Nakagawa, Fujii, Uno, Matsubara and other related instructors)(outside campus, refer Urban Policy Unit for Low-Carbon Society)			
	5	Seminar on Infrastructure Engineering A (Related instructors)		Seminar on Urban Management B (Related instructors)			
Thurs.	1	Information Technology for Urban Society (Related instructors) Katsura C1-192		Information Technology for Urban Society (Related instructors) Katsura C1-192			
	2			Capstone Project (Related instructors) Katsura C1-173			
	3	Exercise on Project Planning (Related instructors) Katsura C1-173		Exercise on Project Planning (Related instructors) Katsura C1-173		ORT on Infrastructure Engineering (Related instructors)	ORT on Urban Management (Related instructors)
		Infrastructure Creation Engineering (Related instructors) Katsura C1-192		Infrastructure Creation Engineering (Related instructors) Katsura C1-192			
	4						
	5	Seminar on Infrastructure Engineering B (Related instructors)	◎Global Survivability Studies (Takara, Yoshikawa, and related instructors) Room will be announced soon.	Seminar on Urban Management B (Related instructors)	◎Global Survivability Studies (Takara, Yoshikawa, and related instructors) Room will be announced soon.		

Fri.	1	◎□Open Channel Hydraulics (Hosoda, Onda) Katsura C1-173 To be held in 2016 (biennial)		◎▫Open Channel Hydraulics (Hosoda, Onda) Katsura C1-173 To be held in 2016 (biennial)			
	2	◎Structural Stability (Shirato, Sugiura) Katsura C1-173	Hydrologic Design and Management (Tachikawa, Ichikawa) Katsura C1-191	◎Structural Stability (Shirato, Sugiura) Katsura C1-173	Hydrologic Design and Management (Tachikawa, Ichikawa) Katsura C1-191		
	3	◎○Coastal Wave Dynamics (H.Gotoh, Khayyer, E.Harada, Ikari) Katsura C1-173 To be held in 2015 (biennial)		◎○Coastal Wave Dynamics (H.Gotoh, Khayyer, E.Harada, Ikari) Katsura C1-173 To be held in 2015 (biennial)			
	4	Seminar on Infrastructure Engineering B (Related instructors)		Seminar on Urban Management A (Related instructors)			
	5	Seminar on Infrastructure Engineering A (Related instructors)				◎Integrated Seminar on Infrastructure Engineering A (Related instructors) Katsura C1-173	◎Integrated Seminar on Urban Management A (Related instructors) Katsura C1-173

◎Class in English, ○held in this year (biennially), □held in next year (biennially)
◎■ (this year in English, next year in Japanese) , ◎●(this year in Japanese, next year in English)
※Class in other departments, ★Class in other graduate schools

Class Schedule for the Dept. of Civil and Earth Resources Eng./Urban Management

Note: The official version is written in Japanese. This is just for your reference.

2nd semester		Master's Program				Doctoral Program	
		Department of Civil and Earth Resources Engineering		Department of Urban Management		Department of Civil and Earth Resources Engineering	Department of Urban Management
Mon.	1	◎ Integrated Disasters and Resources Management in Watersheds (Fujita, Hiraishi, Yoneyama, Kawaike, Takehayashi, Tautsumi, Baba) Katsura C1-172		◎ Integrated Disasters and Resources Management in Watersheds (Fujita, Hiraishi, Yoneyama, Kawaike, Takehayashi, Tautsumi, Baba) Katsura C1-172			
	2	◎Structural Design (Kubota, Takahashi, Matsumura) Katsura C1-173	◎ Disaster Prevention through Geotechnics (Iai, Tobita) Katsura C1-117	◎Structural Design (Kubota, Takahashi, Matsumura) Katsura C1-173	◎ Disaster Prevention through Geotechnics (Iai, Tobita) Katsura C1-117		
	3	★Theory & Practice of Environmental Design Research (H.Kobayashi) Middle-size Lecture Room in No.5 Bldg. at Yoshida		★Theory & Practice of Environmental Design Research (H.Kobayashi) Middle-size Lecture Room in No.5 Bldg. at Yoshida			
	4	◎Bridge Engineering (Shirato, Sugiura, Yagi, Matsumura) Katsura C1-172		◎Bridge Engineering (Shirato, Sugiura, Yagi, Matsumura) Katsura C1-172			
	5	Seismic Simulation Exercise (S.Sawada, Takahashi) Katsura C1-192	◎Computational Fluid Dynamics (Ushijima, H.Goto, Khayyer) Katsura C1-172	Seismic Simulation Exercise (S.Sawada, Takahashi) Katsura C1-192	◎Computational Fluid Dynamics (Ushijima, H.Goto, Khayyer) Katsura C1-172		
	6	Seminar on Infrastructure Engineering A (Related instructors)		Seminar on Urban Management A (Related instructors)			
Tue.	1	Practice in Infrastructure Engineering (Related instructors) Katsura C1-173		Practice in Urban Management (Related instructors) Katsura C1-173			
	2	Concrete Structural Engineering (K.Yamamoto, Takaya, Mizuno) Katsura C1-172	◎□Hydrology (Tachikawa) Katsura C1-117 To be held in 2016 (biennial)	Concrete Structural Engineering (K.Yamamoto, Takaya, Mizuno) Katsura C1-172	◎▫Hydrology (Tachikawa) Katsura C1-117 To be held in 2016 (biennial)		
	3	◎Hydraulic Engineering for Infrastructure Development and Management (Hosoda, Toda, H.Gotoh, Tachikawa, Kishida, Ichikawa, E.Harada, Sanjou, Khayyer, S.Kim) Katsura C1-117	Civic and Landscape Design (Kawasaki, Kubota, Yamaguchi, Okabe) Katsura C1-173	◎Hydraulic Engineering for Infrastructure Development and Management (Hosoda, Toda, H.Gotoh, Tachikawa, Kishida, Ichikawa, E.Harada, Sanjou, Khayyer, S.Kim) Katsura C1-117	Civic and Landscape Design (Kawasaki, Kubota, Yamaguchi, Okabe) Katsura C1-173		
	4	Design of Underground Structures (T.Asakura, Ishida) Katsura C1-172		Design of Underground Structures (T.Asakura, Ishida) Katsura C1-172			
	5						
	6	Seminar on Infrastructure Engineering A (Related instructors)		Seminar on Urban Management A (Related instructors)		◎Integrated Seminar on Infrastructure Engineering B (Related instructors) Katsura C1-173	◎Integrated Seminar on Urban Management B (Related instructors) Katsura C1-173
Wed.	1						
	2	◎○Energy System Management (Koike) Katsura C1-171 To be held in 2015 (biennial)		◎○Energy System Management (Koike) Katsura C1-171 To be held in 2015 (biennial)			
	3	◎Risk Management (Cruz, Yokomatsu) Katsura C1-173		◎Risk Management (Cruz, Yokomatsu) Katsura C1-173			
	4	◎□Lecture on Exploration Geophysics (Mikada, T.Gotoh) Katsura C1-117 To be held in 2016 (biennial)		◎▫Lecture on Exploration Geophysics (Mikada, T.Gotoh) Katsura C1-117 To be held in 2016 (biennial)			
	5	Exercise on Project Planning (Related instructors) Katsura C1-192		Exercise on Project Planning (Related instructors) Katsura C1-192			
Thurs.	2	◎Infrastructural Structure Engineering (Related instructors) Katsura C1-172		◎Infrastructural Structure Engineering (Related instructors) Katsura C1-172			
	3	Infrastructure Safety Engineering (Sugiyma) Katsura C1-172		Infrastructure Safety Engineering (Sugiyma) Katsura C1-172			
	4	Seminar on Infrastructure Engineering B (Related instructors)		Capstone Project (Related instructors) Katsura C1-171		ORT on Infrastructure Engineering (Related instructors)	ORT on Urban Management (Related instructors)
	5			Seminar on Urban Management B (Related instructors)			
Fri.	1	Construction of Geotechnical Infrastructures (Kimura, Kishida) Katsura C1-171	Resources Development Systems (Murata) Katsura C1-172	Construction of Geotechnical Infrastructures (Kimura, Kishida) Katsura C1-171	Resources Development Systems (Murata) Katsura C1-172		
	2	◎Computational Geotechnics (Kimoto, Inui) Katsura C1-172	Intelligent Transportation Systems (Uno, T.Yamada, T.Nakamura) Katsura C1-173	◎Computational Geotechnics (Kimoto, Inui) Katsura C1-172	Intelligent Transportation Systems (Uno, T.Yamada, T.Nakamura) Katsura C1-173		
	3	Applied Elasticity for Rock Mechanics (Murata) Katsura C1-172		Applied Elasticity for Rock Mechanics (Murata) Katsura C1-172			
	4						
	5	Seminar on Infrastructure Engineering B (Related instructors)		Seminar on Urban Management B (Related instructors)		Practice in Advanced Infrastructure Engineering (Related instructors) Katsura C1-172	Practice in Advanced Urban Management (Related instructors) Katsura C1-172

◎English Class, ○Biennial (Held this year), □Biennial (Held next year)
◎■Held every year, but English and Japanese alternately every other year, ◎●Held every year, but Japanese and English alternately every other year
※Subject of other Department, ★Subject of other Graduate School

[**Master Course**]

2.1Department of Civil and Earth Resources Engineering

(1) Educational Policy

1) Necessity of Research and Education in the Department

Our department aims to create a safe, secure, vital and sustainable society harmonizing with the environment for the living space for all living things. Our challenge is a necessary technological innovation to establish new industries and civilizations supported by social infrastructures as well as the promotion of the science technology for integrative establishment of social infrastructure (architecture) and sustainable utilization of underground resources.

2)Purpose of Education

Our purpose of education is to cultivate engineers with basic skills of engineering to deeply understand environmental problems and energy issues on a global scale and to develop technologies related to new infrastructure from international and multiple view points.

3)Goal of Education

Our goal is to foster high basic skills of engineering and nurture applied skills to solve problems in the real society, setting the theme toward the following:1) Upgrading of state-of-the-art technology based on science engineering 2) Elucidation of natural disaster mechanisms and improvements on disaster mitigation technologies 3) Integrative social infrastructure architecture and improvements on its management technology, 4) Utilization of the underground energy resources in a developmental and sustainable society and 5) Contribution to the solution of various problems for realizing low carbon societies.

(2) Credits required for Master degree

Subject category	Number of credits
Core (Basically compulsory)	2 credits
Major	10 or more credits
Minor	Not especially designated
ORT	8 or more credits
Others	Take under your supervisor's approval
Total number of credits	30 or more credits

[NOTE]

1) to complete the program, you must acquire the number of the credits designated for each subject category and the total number of credits listed above.

2) aside from designated credits above,additional requirements for Major subjects have been set depending on the educational program that you have selected. For the details, see Note (4) below.

(3) Registration Model

To be explained based on the material at the Guidance in April.

[NOTE]

(1) For the details (syllabus) of each subject, please refer to the website of the Graduate School of Engineering. URL:http://www.t.kyoto-u.ac.jp/syllabus-gs/

(2) The subjects without a circle (○) in the Subject category are regarded as "Minor subjects".

(3) "Exercise on Project Planning" and "Seminars on Infrastructure Engineering A/B" are compulsory. Students of International Course in Management of Civil Infrastructure will be lectured in English and the subject will be regarded as "English Subject (◎)".

(4)For Major subjects, you must satisfy the requirements for one of the 6 educational programs below. For the selection of your educational program, obtain your supervisor's approval in advance.

Structural Division Education Program:

Must take all "Continuum Mechanics", "Structural Stability", "Material and Structural System & Management", "Earthquake Engineering/Lifeline Engineering", and "Infrastructural Structure Engineering".

Hydrologic Division Education Program:

- Must take all "Hydrodynamics and Turbulence Mechanics", "Hydrologic Design and Management", "River Management", and "Sediment Hydraulics".
- Must take at least 3 subjects among , "Hydrology""Open Channel Hydraulics", "Coastal Wave Dynamics", "Hydro-meteorologically based Disaster Prevention", "Water Resources Systems", "River Basin Management of Flood and Sediment", "Coastal and Urban Water Disasters Engineering", "Disaster Mitigation for Sustainable Basin Environment", "Computational Fluid Dynamics", "Hydraulic Engineering for Infrastructure Development and Management", "Applied Hydrology", "Case Studies Harmonizing Disaster Management"and "Integrated Disasters and Resources Management in Watersheds".

Geomechanics Division Education Program:

Must take at least 5 subjects among "Geomechanics", "Computational Geotechnics", "Geo-Risk Managenent", "Construction of Geotechnical Infrastructures", "Fundamental Geofront Engineering", "Environmental Geotechnics" and "Disaster Prevention through Geotechnics".

Planning Division Education Program:

Must take at least 2 subjects among "Public Finance", "Urban Environmental Policy", "City Logistics", "Quantitative Methods for Behavioral Analysis", "Intelligent Transportation Systems", "Remote Sensing and Geographic Information System", "Civic and Landscape Design", "Risk Management", "Disaster Information", "Disaster Risk Management", and "Theory & Practice of Environmental Design Research".

Earth Resources and Energy Division Education Program:

Must take at least 3 subjects among "Resources Development Systems", "Applied Mathematics in Civil & Earth Resources Engineering", "Computational Mechanics and Simulation", "Environmental Geosphere Engineering", "Modeling of Geology", "Applied Elasticity for Rock Mechanics", "Fundamental Theories in Geophysical Exploration", "Design of Underground Structures", "Lectureon Exploration Geophysics", "Measurement in the Earth's Crust Environment", "Time Series Analysis", and "Energy System Management".

"International Course in Management of Civil Infrastructure" Program:

Must complete 10 credits or more from English-lectured classes providedon the Subject List.Consult with your supervisor which classes to take.

(5) You must acquire 20 credits or more in total from the subjects listed in Subject List, among the 30 credits of completion requirement.Students of International Course in Management of Civil Infrastructure must take the 20 credits (including “Exercise on Project Planning” and “Seminars on Infrastructure Engineering A/B”) in English. The other 10 credits must be English classes from the Subject List or English classes equivalent to the ones on (6) below.
(6)For the subjects not listed on the Subject List, you can select from Common Subjects of Graduate School of Engineering and/or the subjects of other Departments/Graduate School which your supervisor approves. For the students who passed the Joint Degree System of the Graduate School of Management, apply (7) below. However, the credits will be regarded as “Minor subjects”in any of these cases. As for the international students, non-credited Japanese Language classes are available.
(7) If the students who passed the Joint Degree System of the Graduate School of Management have completed the subjects offered by the Graduate School of Management, credits are to be admitted as the credits of the subjects of the Department of Civil and Earth Resources Engineering under the approval of the supervisor. However, the number of obtainable credits must not exceed 10 credits.
(8)As for taking “Urban Transport Policy”, “Policy for Low-Carbon Society”, “Urban Transport Management”, “Policy for Low-Carbon Society, Advanced”; “Urban Transport Management, Advanced”; “Capstone Project Practice”; contact **the Low-Carbon Society Unit** prior to registering for the classes.
(9) As for taking “Dialog/Liveable Cities”, “Dialog/ Design of Liveable Cities”“Basic Civil Engineering & Health Science I”“Basic Civil Engineering & Health Science II”“Policy for Liveable Cities”“Methodology for Liveable Cities”“Seminar on Liveable Cities A”“Seminar on Liveable Cities B”“Disaster and Health Risk Management”“KANSEI urban spaces” and “Exercise on Project planning”; contact **Liveable Cities Unit** prior to registering for the classes.
(10) The courses below have also been set in the Department of Civil and Earth Resources Engineering:

- Structural Design Engineer/Researcher Training Course
- Hydrologic Design Engineer/Researcher Training Course
- Geo Design Engineer/Researcher Training Course
- Urban Design Engineer/Researcher Training Course
- Earth Resources and Energy Engineer/Researcher Training Course
- International Course on Approaches for Disaster Resilience

If you have completed the subjects designated for each course and applied for the completion of the subject, you will obtain a certificate to prove that you have completed that course.

Subject List (Master's Program of the Department of Civil and Earth Resources Engineering.)								
Subject code	Subject	Instructor	Number of hours per week		Credit	Subject category		
			1st semester	2nd semester		Core	Major	ORT
10F251	Exercise on Project Planning (自主企画プロジェクト)	Related instructors	2	2	2	○ Compulsory		
10U055	Seminar on Infrastructure Engineering A (社会基盤工学セミナーA)	Related instructors	(4)	(4)	4			○ Compulsory
10U056	Seminar on Infrastructure Engineering B (社会基盤工学セミナーB)	Related instructors	(4)	(4)	4			○ Compulsory
10U059	Internship on Infrastructure Engineering (社会基盤工学インターンシップ)	Related instructors	Intensive		4			○
10F063	Practice in Infrastructure Engineering (社会基盤工学実習)	Related instructors		2	2			○
10F003	Continuum Mechanics (連続体力学)	Sugiura, Yagi	2		2		○	
10F067	◎Structural Stabilit (構造安定論)	Shirato, Sugiura		2	2		○	
10F068	◎Material and Structural System & Management	Kawano, Hattori, Yamamoto	2		2		○	
10F261	◎Earthquake Engineering/Lifeline Engineering (地震・ライフライン工学)	Kiyono, Igarashi	2		2		○	
10W001	◎Infrastructural Structure Engineering (社会基盤構造工学)	Related instructors		2	2		○	
10F009	◎Structural Design (構造デザイン)	Kubota, Takahashi, Matsumura	2		2		○	
10F010	◎Bridge Engineering (橋梁工学)	Shirato, Sugiura, Yagi, Matsumura		2	2		○	
10A019	Concrete Structural Engineering (コンクリート構造工学)	Yamamoto, Takaya, Mizuno (Part-time Lecturer)		2	2		○	
10F227	Structural Dynamics (構造ダイナミクス)	Igarashi, Furukawa	2		2		○	
10F263	Seismic Simulation Exercis (サイスミックシミュレーション)	S.Sawada, Takahashi		2	2		○	
10F415	Ecomaterial and Environment-friendly Structures (環境材料設計学)	Kawano, Hattori	2		2		○	
10F089	Infrastructure Safety Engineering (社会基盤安全工学)	Sugiyama		2	2		○	
10F075	Hydrodynamics and Turbulence Mechanics (水理乱流力学)	Toda, Sanjo, Okamoto	2		2		○	
10A216	◎□Hydrology (水文学)	Tachikawa, Ichikawa		2	2		○	
10F019	River Management (河川マネジメント工学)	Hosoda, Kishida, Onda	2		2		○	
10A040	Sediment Hydraulics (流砂水理学)	H.Gotoh, E.Harada	2		2		○	
10F464	Hydrologic Design and Management (水工計画学)	Tachikawa	2		2		○	
10F245	◎□Open Channel Hydraulics (開水路の水理学)	Hosoda, Onda	2		2		○	
10F462	◎○Coastal Wave Dynamics (海岸波動論)	H.Gotoh, E.Harada, Khayyer, Ikari	2		2		○	
10F267	○Hydro-meteorological Disaster Prevention (水文気象防災学)	Takara, Nakakita, Sayama (DPRI)	2		2		○	
10A222	○Water Resources Systems (水資源システム論)	Hori, K.Tanaka (DPRI)	2		2		○	
10F077	○River Basin Management of Flood and Sediment (流域治水砂防学)	H.Nakagawa, Sumi, Kawaike, Takebayashi	2		2		○	
10F269	□Coastal and Urban Water Disasters Engineering (沿岸・都市防災工学)	Mase, Igarashi, Yoneyama, Mori (DPRI)	2		2		○	
10F466	□Disaster Mitigation for Sustainable Basin Environment (流域環境防災学)	Fujita, Hiraishi, Takemon, Tsutsumi, Baba (DPRI)	2		2		○	
10F011	◎Computational Fluid Dynamics (数値流体力学)	Ushijima, H.Goto, Khayyer		2	2		○	
10F065	◎Hydraulic Engineering for Infrastructure Development and Management (水域社会基	Hosoda,Toda, H.Gotoh, Tachikawa, Kishida,		2	2		○	
10F100	◎Applied Hydrology (応用水文学)	Hori, Sumi, S. Tanaka, Takemon, K.Tanaka,	2		2		○	
10F103	◎Case Studies Harmonizing Disaster Management and Environment Conservation (環境防災生存科学)	Takara, H.Nakagawa, Nakakita, Mase, Mori (DPRI)	2		2		○	

10F106	◎Integrated Disasters and Resources Management in Watersheds	Fujita, Hiraishi, Yoneyama, Kawaike, Takebayashi,		2	2		○	
10F025	Geomechanics (地盤力学)	Mimura, Kimoto	2		2		○	
10K016	◎Computational Geotechnics (計算地盤工学)	Kimoto,Inui (GSGES)		2	2		○	
10F238	◎Geo-Risk Management (ジオリスクマネジメント)	Ohtsu	2		2		○	
10F241	Construction of Geotechnical Infrastructures (ジオコンストラクション)	Kimura, Kishida		2	2		○	
10F405	◎Fundamental Geofront Engineering (ジオフロント工学原論)	Mimura, Kimura, Higo	2		2		○	
10A055	Environmental Geotechnics (環境地盤工学)	Katsumi, Inui (GSGES)	2		2		○	
10F109	◎Disaster Prevention through Geotechnics (地盤防災工学)	Iai, Tobita (DPRI)		2	2		○	
10F203	◎Public Finance (公共財政論)	K.Kobayashi, Matsushima	2		2		○	
10F207	Urban Environmental Policy (都市社会環境論)	D.Nakagawa, Matsunaka	2		2		○	
10F213	◎City Logistics (シティロジスティクス)	E.Taniguchi, Ali G.Qureshi	2		2		○	
10F219	Quantitative Methods for Behavioral Analysis /Public Psychology for Human Behavior (人間	S.Fujii	2		2		○	
10F215	Intelligent Transportation Systems (交通情報工学)	Uno, T.Yamada, T.Nakamura		2	2		○	
10A805	Remote Sensing and Geographic Information System (リモートセンシングと地理情報システ	Tamura, Susaki	2		2		○	
10A808	Civic and Landscape Design (景観デザイン論)	Kawasaki, Kubota, Yamaguchi, Okabe (Part-		2	2		○	
10F223	◎Risk Management (リスクマネジメント論)	Cruz, Yokomatsu (DPRI)		2	2		○	
10X333	◎Disaster Risk Management (災害リスク管理論)	Tatano, Cruz, Yokomatsu (DPRI)	2		2		○	
693287	★Disaster Information (防災情報特論)	Tatano, Yamori, Hatayama (DPRI)	2		2		○	
10A845	★Theory & Practice of Environmental Design Research (環境デザイン論)	H.Kobayashi (GSGES)		2	2		○	
10A402	Resources Development Systems (資源開発システム工学)	Murata		2	2		○	
10F053	Applied Mathematics in Civil & Earth Resources Engineering (応用数理解析)	Tsukada, Saito	2		2		○	
10K008	◎ Computational Mechanics and Simulation (計算力学及びシミュレーション)	Ishida, Furukawa, Flores, Liang	2		2		○	
10A405	Environmental Geosphere Engineering (地殻環境工学)	K. Koike	2		2		○	
10F071	Applied Elasticity for Rock Mechanics (応用弾性学)	Murata		2	2		○	
10F073	Fundamental Theories in Geophysical Exploration (物理探査の基礎数理)	Mikada, T.Goto	2		2		○	
10F087	Design of Underground Structures (地下空間設計)	Asakura, Ishida		2	2		○	
10A420	◎□Lecture on Exploration Geophysics (探査工学特論)	Mikada, T.Goto		2	2		○	
10F085	◎Measurement in The Earth's Crust Environment (地殻環境計測)	T.Asakura, Ishida Yamamoto (Part-time	2		2		○	
10F088	◎○Energy System Management (地球資源学)	K. Koike		2	2		○	
10F081	Infrastructure Creation Engineering (社会基盤工学創生)	Related instructors	2		2		○	
10X311	◎ Urban Infrastructure Management (都市基盤マネジメント論)	Ohtsu and related instructors	2		2		○	
10F113	◎Global Survivability Studies (グローバル生存学)	Takara(DPRI), Yoshikawa and related instructors		2	2		○	
693291	★Emergency Management Systems (危機管理特論)	Hayashi, Suzuki (DPRI)	2		2		○	
10F201	Information Technology for Urban Society (都市社会情報論)	Related instructors	2		2			
10Z001	Urban Transport Policy (都市交通政策フロントランナー講座)	D. Nakagawa, Matsunaka, Oba, Matsubara and related	Intensive		1			
10Z002	Policy for Low-Carbon Society (低炭素都市圏政策論)	E. Taniguchi, D. Nakagawa, Matsubara and related	Intensive		1			
10Z003	Urban Transport Management (都市交通政策マネジメント)	D. Nakagawa, S. Fujii, Uno, Matsubara and related	Intensive		1			

10F383	◎Engineering Seminar for Disaster Resilience in ASEAN countries 1	Ohtsu and related instructors	Intensive		2			
10F384	◎Engineering Seminar for Disaster Resilience in ASEAN countries 2	Tachikawa and related instructors	Intensive		2			
10F385	◎Engineering Seminar for Disaster Resilience in ASEAN countries 3	Hori, Shimizu, Hatayama, Mori, Takebayashi,	Intensive		2			
10F382	◎Disaster and Health Risk Management for Liveable Cities	Kiyono and related instructors	Intensive		2			
10F299	Master's Thesis (研究論文(修士))							○ Compulsory

Legend

◎English Class

○Biennial (Held this year)

□Biennial (Held next year)

◎■Held every year, but English and Japanese alternately every other year

◎●Held every year, but Japanese and English alternately every other year

※Subject of other Department

★Subject of other Graduate School

［Master Course］

2.2Department of Urban Management

(1) Educational Policy

1) Necessity of Research and Education in the Department

To realizesustainable and internationally competitive urban systems which can assure a high quality of life, comprehensive management of urban system is indispensable. Our department, subject to protect global and regional environment,strives to establish theories and systematic technologies for a comprehensivemanagement of urban systems from interdisciplinary points of view integrating social science and humanity, consolidating engineeringtechnology such as management, advanced information, social infrastructureand energy.

2)Purpose of Education

We aim to educate engineers with high capabilities of problem solutions and with advanced and comprehensive accomplishments based on engineering skills such as management technology, also including social science and humanity.

3)Goal of Education

Our goal is to foster comprehensive management skills and nurture high ability to solve problems toward urban infrastructure, setting the theme toward the following: 1)social infrastructure upgrading through innovation of urban informationcommunication technology, 2) disaster risk management in advanced information society, 3) comprehensive efficient urban system management, 4) social infrastructure maintenance for internationalization, and 5) urban management based on limited energy resource theory.

(2) Credits required for Master degree

Subject category	Number of credits
Core (Basically compulsory)	4 or more credits
Major	4 or more credits
Minor	Not especially designated
ORT	8 or more credits
Others	Take under your supervisor’s approval
Total number of credits	30 or more credits

1）tocomplete the program, you must acquire the number of the credits designated for each subject category and the total number of credits listed above.

2）aside from designated credits above, additional requirements for Major subjects have been set depending on the educational program that you have selected. For the details, see Note (4) below.

(3) Registration Model

To be explained based on the material at the Guidance in April.

[NOTE]

(1)For the details (syllabus) of each subject, please refer to the website of the Graduate School of Engineering.URL:http://www.t.kyoto-u.ac.jp/syllabus-gs/.

(2)The subjects without a circle (○) in the Subject category are regarded as "Minor subjects".

(3) "Information Technology for Urban Society"and "Seminars on Urban Management A/B" are compulsory."Exercise on Project Planning" and "Capstone Project" are both elective compulsory subjects; you must select either of them.However, under supervisor's approval, students of International Course in Urban and Regional Development must take one of the English-lectured classes (subjects with ◎)provided on the Subject List as Core subject instead of "Information Technology for Urban Society". As for "Seminar on Urban Management A/B", "Exercise on Project Planning" and "Capstone Project", students of International Course in Urban and Regional Development will be lectured in English and these subjects will be regarded as "English Subject".

(4) For Major subjects, you must satisfy the requirements for one of the 6educational programs below. For the selection of your educational program, obtain your supervisor's approval in advance.

Structural Division Education Program:

Must take all "Continuum Mechanics", "Structural Stability", "Material and Structural System & Management", "Earthquake Engineering/Lifeline Engineering", and "Infrastructural Structure Engineering".

Hydrologic Division Education Program:

- Must take all "Hydrodynamics and Turbulence Mechanics", "Hydrologic Design and Management", "River Management", and "Sediment Hydraulics".
- Must take at least 3 subjects among , "Hydrology""Open Channel Hydraulics", "Coastal Wave Dynamics", "Hydro-meteorologically based Disaster Prevention", "Water Resources Systems", "River Basin Management of Flood and Sediment", "Coastal and Urban Water Disasters Engineering", "Disaster Mitigation for Sustainable Basin Environment", "Computational Fluid Dynamics", "Hydraulic Engineering for Infrastructure Development and Management", "Applied Hydrology", "Case Studies Harmonizing Disaster Management"and "Integrated Disasters and Resources Management in Watersheds".

Geomechanics Division Education Program:

Must take at least 5 subjects among "Geomechanics", "Computational Geotechnics", "Gio-Risk Management" "Construction of Geotechnical Infrastructures", "Fundamental Geofront Engineering", "Environmental Geotechnics", ", and "Disaster Prevention through Geotechnics".

Planning Division Education Program:

Must take at least 2 subjects among "Public Finance", "Urban Environmental Policy", "City Logistics", "Quantitative Methods for Behavioral Analysis", "Intelligent Transportation Systems", Remote Sensing and Geographic Information System", "Civic and Landscape Design", "Risk Management", "Disaster Information", "Disaster Risk Management", and "Theory & Practice of Environmental Design Research".

Earth Resources and Energy Division Education Program:

Must take at least 3 subjects among "Resources Development Systems", "Applied Mathematics in Civil & Earth Resources Engineering", "Computational Mechanics and Simulation", "Environmental Geosphere Engineering", "Modeling of Geology", "Applied Elasticity for Rock Mechanics", "Fundamental Theories in Geophysical Exploration", "Design of Underground Structures", "Lectureon Exploration Geophysics", "Measurement in the Earth's Crust Environment", "Time Series Analysis", and "Energy System Management".

“International Course in Urban and Regional Development” Program:

Must complete more than 4credits from English-lectured classes (subjects with ◎)provided on the Subject Listexcept for one subject as Core subject above-mentioned (2).Consult with your supervisorand decide which classes to take.

(5) You must acquire 20 credits or more in total from the subjects listed in Subject List, among the 30 credits of completion requirement. Students of International Course in Urban and Regional Development must take the 20 credits (including“Seminar on Urban Management A/B”, “Exercise on Project Planning” and “Capstone Project”) in English. The other 10 credits must be English classes from the Subject List or English classes equivalent to the ones on (6) below.

(6) For the subjects not listed on the Subject List, you can select from Common Subjects of Graduate School of Engineering and/or the subjects of other Departments/Graduate School which your supervisor approves. For the students who passed the Joint Degree System of the Graduate School of Management, apply (7) below. However, the credits will be regarded as “Minor subjects”in any of these cases. As for international students, non-credited Japanese Language classes are available.

(7) If the students who passed the Joint Degree System of the Graduate School of Management have completed the subjects offered by the Graduate School of Management, credits are to be admitted as the credits of the subjects of the Department of Urban Management under the approval of the supervisor. However, the number of obtainable credits must not exceed 10 credits.

(8)As for taking “Urban Transport Policy”, “Policy for Low-Carbon Society”, “Urban Transport Management”, “Policy for Low-Carbon Society, Advanced”; “Urban Transport Management, Advanced”; “Capstone Project Practice”; contact **the Low-Carbon Society Unit** prior to registering for the classes.

(9) As for taking “Dialog/Liveable Cities”, “Dialog/ Design of Liveable Cities”“Basic Civil Engineering & Health Science I”“Basic Civil Engineering & Health Science II”“Policy for Liveable Cities”“Methodology for Liveable Cities”“Seminar on Liveable Cities A”“Seminar on Liveable Cities B”“Disaster and Health Risk Management”“KANSEI urban spaces” and “Exercise on Project planning”; contact **Liveable Cities Unit** prior to registering for the classes.

(10) The courses below have also been set in the Department of Urban Management:

- Public Policy Planning/Management Course
- International Project Management Course (Infrastructure/Energy Development)
- Urban Water/Geo Environment Management Course
- Seismic Design/Management Course
- Urban Transportation Policy Course (Urban Planning, Urban Transport Policy)
- Earth Resources and Energy Engineer/Researcher Training Course
- International Course on Approaches for Disaster Resilience

If you have completed the subjects designated for each course and applied for the completion of the subject, you will obtain a certificate to prove that you have completed that course.

Subject List (Master's Program of the Department of Urban Management)								
Subject code	Subject	Instructor	Number of hours per week		Credit	Subject category		
			1st semester	2nd semester		Core	Major	ORT
10F201	Information Technology for Urban Society (都市社会情報論)	Related instructors	2		2	○ Compulsor		
10F251	Exercise on Project Planning (自主企画プロジェクト)	Related instructors	2	2	2	○Elective Compulsor		
10F253	Capstone Project （キャップストーンプロジェクト)	Related instructors	2	2	2	○Elective Compulsor		
10F257	Seminar on Urban Management A (都市社会工学セミナーA)	Related instructors	(4)	(4)	4			○ Compulsor
10F259	Seminar on Urban Management B (都市社会工学セミナーB)	Related instructors	(4)	(4)	4			○ Compulsor
10F150	Long-Term Internship (長期インターンシップ)	Related instructors	Intensive		4			○
10U210	Practice in Urban Management (都市社会工学実習)	Related instructors		2	2			○
10F003	Continuum Mechanics （連続体力学)	Sugiura, Yagi	2		2		○	
10F067	◎Structural Stability （構造安定論)	Shirato, Sugiura		2	2		○	
10F068	◎Material and Structural System & Management (材料・構造マネジメント論)	Kawano, Hattori, Yamamoto	2		2		○	
10F261	◎Earthquake Engineering/Lifeline Engineering （地震・ライフライン工学)	Kiyono, Igarashi	2		2		○	
10W001	◎Infrastructural Structure Engineering (社会基盤構造工学)	Related instructors		2	2		○	
10F009	◎Structural Design （構造デザイン)	Kubota, Takahashi, Matsumura	2		2		○	
10F010	◎Bridge Engineering （橋梁工学)	Shirato, Sugiura, Yagi, Matsumura		2	2		○	
10A019	Concrete Structural Engineering (コンクリート構造工学)	Yamamoto, Takaya, Mizuno (Part-time		2	2		○	
10F227	Structural Dynamics （構造ダイナミクス)	Igarashi, Furukawa	2		2		○	
10F263	Seismic Simulation Exercise (サイスミックシミュレーション)	S.Sawada, Takahashi		2	2		○	
10F415	Ecomaterial and Environment-friendly Structures （環境材料設計学)	Kawano, Hattori	2		2		○	
10F089	Infrastructure Safety Engineering (社会基盤安全工学)	Sugiyama		2	2		○	
10F075	Hydrodynamics and Turbulence Mechanics （水理乱流力学)	Toda, Sanjo, Okamoto	2		2		○	
10A216	◎□Hydrology (水文学)	Tachikawa, Ichikawa		2	2		○	
10F019	River Management （河川マネジメント工学)	Hosoda, Kishida, Onda	2		2		○	
10A040	Sediment Hydraulics （流砂水理学)	H.Gotoh, E.Harada	2		2		○	
10F464	Hydrologic Design and Management (水工計画学)	Tachikawa	2		2		○	
10F245	◎□Open Channel Hydraulics (開水路の水理学)	Hosoda, Onda	2		2		○	
10F462	◎○Coastal Wave Dynamics (海岸波動論)	H.Gotoh, E.Harada, Khayyer, Ikari	2		2		○	
10F267	○Hydro-meteorological Disaster Prevention	Takara, Nakakita, Sayama (DPRI)	2		2		○	
10A222	○Water Resources Systems (水資源システム論)	Hori, K.Tanaka (DPRI)	2		2		○	
10F077	○River Basin Management of Flood and Sediment （流域治水砂防学)	H.Nakagawa, Sumi, Kawaike, Takebayashi	2		2		○	
10F269	□Coastal and Urban Water Disasters Engineering （沿岸・都市防災工学)	Mase, Igarashi, Yoneyama, Mori (DPRI)	2		2		○	
10F466	□Disaster Mitigation for Sustainable Basin Environment （流域環境防災学)	Fujita, Hiraishi, Takemon, Tsutsumi,	2		2		○	
10F011	◎Computational Fluid Dynamics (数値流体力学)	Ushijima, H.Goto, Khayyer		2	2		○	

10F065	◎Hydraulic Engineering for Infrastructure Development and Management	Hosoda,Toda, H.Gotoh, Tachikawa, Kishida, E.Harada, Sanjou		2	2		○	
10F100	◎Applied Hydrology （応用水文学）	Hori, Sumi, S. Tanaka, Takemon, K.Tanaka,	2		2		○	
10F103	◎Case Studies Harmonizing Disaster Management and Environment Conservation （環境防災生存科学）	Takara, H.Nakagawa, Nakakita, Mase, Mori (DPRI)	2		2		○	
10F106	◎Integrated Disasters and Resources Management in Watersheds （流域管理工	Fujita, Hiraishi, Yoneyama, Kawaike,		2	2		○	
10F025	Geomechanics （地盤力学）	Mimura, Kimoto	2		2		○	
10K016	◎Computational Geotechnics (計算地盤工学)	Kimoto,Inui (GSGES)		2	2		○	
10F238	◎Geo-Risk Management (ジオリスクマネジメント)	Ohtsu	2		2		○	
10F241	Construction of Geotechnical Infrastructures （ジオコンストラクション）	Kimura, Kishida		2	2		○	
10F405	◎Fundamental Geofront Engineering (ジオフロント工学原論)	Mimura, Kimura, Higo	2		2		○	
10A055	Environmental Geotechnics (環境地盤工学)	Katsumi, Inui (GSGES)	2		2		○	
10F109	◎Disaster Prevention through Geotechnics （地盤防災工学）	Iai, Tobita (DPRI)		2	2		○	
10F203	◎Public Finance （公共財政論）	K.Kobayashi, Matsushima	2		2		○	
10F207	Urban Environmental Policy (都市社会環境論)	D.Nakagawa, Matsunaka	2		2		○	
10F213	◎City Logistics （シティロジスティクス）	E.Taniguchi, Ali G.Qureshi	2		2		○	
10F219	Public Psychology for Human Behaviour/ Quantitative Methods for Behavioral	S.Fujii	2		2		○	
10F215	Intelligent Transportation Systems (交通情報工学)	Uno, T.Yamada, T.Nakamura		2	2		○	
10A805	Remote Sensing and Geographic Information System （リモートセンシングと地	Tamura, Susaki	2		2		○	
10A808	Civic and Landscape Design (景観デザイン論)	Kawasaki, Kubota, Yamaguchi, Okabe		2	2		○	
10F223	◎Risk Management （リスクマネジメント論）	Cruz, Yokomatsu (DPRI)		2	2		○	
10X333	◎Disaster Risk Management (災害リスク管理論)	Tatano, Cruz, Yokomatsu	2		2		○	
693287	★Disaster Information(防災情報特論)	Tatano, Yamori, Hatayama	2		2		○	
10A845	★Theory & Practice of Environmental Design Research （環境デザイン論）	H.Kobayashi (GSGES)		2	2		○	
10A402	Resources Development Systems (資源開発システム工学)	Murata		2	2		○	
10F053	Applied Mathematics in Civil & Earth Resources Engineering(応用数理解析)	Tsukada, Saito	2		2		○	
10K008	◎ Computational Mechanics and Simulation （計算力学及びシミュレーション）	Ishida, Furukawa, Flores, Liang	2		2		○	
10A405	Environmental Geosphere Engineering (地殻環境工学)	K. Koike	2		2		○	
10F071	Applied Elasticity for Rock Mechanics (応用弾性学)	Murata		2	2		○	
10F073	Fundamental Theories in Geophysical Exploration （物理探査の基礎数理）	Mikada, T.Goto	2		2		○	
10F087	Design of Underground Structures (地下空間設計)	Asakura, Ishida		2	2		○	
10A420	◎□Lecture on Exploration Geophysics (探査工学特論)	Mikada, T.Goto		2	2		○	
10F085	◎Measurement in The Earth's Crust Environment （地殻環境計測）	T.Asakura, Ishida Yamamoto (Part-time	2		2		○	
10F086	◎○Energy System Management (地球資源学)	K. Koike		2	2		○	
10F081	Infrastructure Creation Engineering （社会基盤工学創生）	Related instructors	2		2		○	
10X311	◎ Urban Infrastructure Management (都市基盤マネジメント論)	Ohtsu and related instructors	2		2		○	

10F112	◎Global Survivability Studies（グローバル生存学）	Takara(DPRI), Yoshikawa and related	2		2		○	
693291	★Emergency Management Systems（危機管理特論）	Hayashi, Suzuki（DPRI）	2		2		○	
10Z001	Urban Transport Policy（都市交通政策フロントランナー講座）	D. Nakagawa, Matsunaka, Oba,	Intensiv		1			
10Z002	Policy for Low-Carbon Society（低炭素都市圏政策論）	E. Taniguchi, D. Nakagawa, Matsubara	Intensiv		1			
10Z003	Urban Transport Management（都市交通政策マネジメント）	D. Nakagawa, S. Fujii, Uno, Matsubara and	Intensiv		1			
10F383	◎Engineering Seminar for Disaster Resilience in ASEAN countries 1	Ohtsu and related instructors	Intensiv e		2			
10F384	◎Engineering Seminar for Disaster Resilience in ASEAN countries 2	Tachikawa and related instructors	Intensiv e		2			
10F385	◎Engineering Seminar for Disaster Resilience in ASEAN countries 3	Hori, Shimizu, Hatayama, Mori,	Intensiv e		2			
10F382	◎Disaster and Health Risk Management for Liveable Cities	Kiyono and related instructors	Intensiv e		2			
10F299	Master's Thesis （研究論文(修士)）							○ Compulsor

Legend

◎English Class

○Biennial (Held this year)

□Biennial (Held next year)

◎■Held every year, but English and Japanese alternately every other year

◎●Held every year, but Japanese and English alternately every other year

※Subject of other Department

★Subject of other Graduate School

Master's Program of the Department of Civil and Earth Resources Engineering
Model Curriculum (International Course in Management of Civil Infrastructure)

1. Target students

Students who belong to the master's program of the Department of Civil and Earth Resources Engineering and take International Course in Management of Civil Infrastructure

2. Purpose of the model curriculum

Today, contribution to the sophistication of management technology for international social infrastructure and satisfaction of the demand of whole society including technology induction to Asian countries of rapid urbanization are required. In this condition, cultivate abilities to explore new technologies and human resources that can address flexibly the complexity in the society from international and multilateral prospective. For this purpose, students are required to take wide range of English subjects related to Civil and Earth Resources Engineering.

3. Model curriculum

Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
M1 1st term	Exercise on Project Planning (Required) 3-6 subjects from English subject group on "Subject List" of the Department of Civil and Earth Resources Engineering 0-3 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Infrastructure Engineering A/B (Required, 2-year subject/ Accredited 4 credits for each, 8 credits in total, judging the study condition when completed)	12 credits
M1 2nd term	Exercise on Project Planning (Required) 2-5 subjects from English subject group on "Subject List" of the Department of Civil and Earth Resources Engineering 0-3 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Infrastructure Engineering A/B (Required)	10 credits
M2 1st term		Seminar on Infrastructure Engineering A/B (Required)	
M2 2nd term		Seminar on Infrastructure Engineering A/B (Required) Master's Thesis(Required)	8 credits 0 credits
Credits	22 or more credits	8 or more credits	30 or more credits

(Note)

1) Students are required to take 10 or more credits from English subjects provided on "Subject List". Consult with your supervisor and decide which subjects to take. Subjects to be accredited as completion requirements are English subjects only (including 'Exercise on Project Planning' and 'Seminar on Infrastructure Engineering A/B').
2) 6 courses are prepared other than completion requirements in the Department of Civil and Earth Resources Engineering. Those who satisfy the completion requirements will receive the certificate when completed. Regarding details of the courses, please refer to the documents distributed at the guidance.

Master's Program of the Department of Urban Management
Model Curriculum (International Course in Urban and Regional Development)

1. Targeted students

Students who belong to the master's program of the Department of Urban Management and take International Course in Urban and Regional Development

2. Purpose of the model curriculum

We aim to develop internationally competitive infrastructure, make urban policy to achieve socioeconomic development, and develop urban management technology. In this course, we will foster human resources who achieve these goals and also have professional knowledge and leadership. For this purpose, students are required to take wide range of English subjects related to Urban Management.

3. Model curriculum

Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
M1 1st term	Information Technology for Urban Society (Required) Exercise on Project Planning (Required-elective) Capstone Project (Required-elective) 1-6 subjects from English subject group on "Subject List" of the Department of Urban Management 0-5 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Urban Management A/B (Required 2-year subject. Accredited 4 credits for each, 8 credits in total, judging the study condition when completed)	12 credits
M1 2nd term	Exercise on Project Planning (Required-elective) Capstone Project (Required-elective) 1-5 subjects from English subject group on "Subject List" of the Department of Urban Management 0-4 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Urban Management A/B (Required)	10credits
M2 1st term		Seminar on Urban Management A/B (Required)	
M2 2nd term		Seminar on Urban Management A/B (Required) Master's Thesis (Required)	8 credits 0 credits
Credits	22 or more credits	8 or more credits	30 or more credits

(Note)

1) Students are required to take 4 or more credits from English subjects on "Subject List". Consult with your supervisor and decide which subjects to take. Subjects to be accredited as completion requirements are English subjects only (including 'Information Technology for Urban Society' 'Exercise on Project Planning' 'Capstone Project' 'Seminar on Urban Management A/B').

2) 7 courses are prepared other than completion requirements in the Master's program of the Department of Urban Management. Those who satisfy the completion requirements will receive the certificate when completed. Regarding details of the courses, please refer to the documents distributed at guidance.

Advanced Engineering Course Program of the Department of Civil and Earth Resources Engineering

Model Curriculum (International Course in Management of Civil Infrastructure)

1. Targeted students

Students who belong to Advanced Engineering Course Program (5yr Course) and take International Course in Management of Civil Infrastructure in Master's program or students who belong to Advanced Engineering Course Program (3yr Course).

2. Purpose of the model curriculum

Today, contribution to the sophistication of management technology for international social infrastructure and satisfaction of the demand of whole society including technology induction to Asian countries of rapid urbanization are required. In this condition, cultivate abilities to explore new technologies and human resources that can address flexibly the complexity in the society from international and multilateral prospective. For this purpose, students are required to take wide range of English subjects related to Civil and Earth Resources Engineering.

3. Model curriculum

5yr Course（Mater's Program）			
Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
M1 1st term	Exercise on Project Planning (Required) 3-6 subjects from English subject group on "Subject List" of the Department of Civil and Earth Resources Engineering 0-3 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Infrastructure Engineering A/B (Required/ 2-year subject/ Accredited 4 credits for each, 8 credits in total judging the study condition when completed)	12 credits
M1 2nd term	Exercise on Project Planning (Required) 2-5 subjects from English subject group on "Subject List" of the Department of Civil and Earth Resources Engineering/ 0-3 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Infrastructure Engineering A/B (Required)	10 credits
M2 1st term		Seminar on Infrastructure Engineering A/B (Required)	
M2 2nd term		Seminar on Infrastructure Engineering A/B (Required) Master's Thesis (Required)	8 credits 0 credits
Credits	22 or more credits	8 or more subjects	30 or more credits
5yr Course（Doctoral Program）3yr Course（Doctoral Program）			
Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
D1 1st term	Integrated Seminar on Infrastructure Engineering A (Required) Practice in Advanced Infrastructure Engineering	ORT on Infrastructure Engineering (3-year subject, accredited 4 credits after judging the study condition when completed)	2 credits
D1 2nd term	Integrated Seminar on Infrastructure Engineering B (Required) Practice in Advanced Infrastructure Engineering	ORT on Infrastructure Engineering	4 credits
D2 1st Term		ORT on Infrastructure Engineering	
D2 2nd Term		ORT on Infrastructure Engineering	
D3 1st Term		ORT on Infrastructure Engineering	
D3 2nd Term		ORT on Infrastructure Engineering Doctoral Thesis (Required)	4 credits 0 credits

Total	6 or more credits	4 or more credits	10 or more credits

(Note)

1) Students are required to take 10 or more credits from English subjects on “Subject List”. Consult with your supervisor and decide which subjects to take. Subjects to be accredited as completion requirements are English subjects only (including ‘Exercise on Project Planning’ and ‘Seminar on Infrastructure Engineering A/B’).

2) 6 courses prepared other than completion requirements in the Department of Civil and Earth Resources Engineering. Those who satisfy the completion requirements will receive the certificate when completed. Regarding details of the courses, please refer to the documents distributed at guidance.

Advanced Engineering Course Program of the Department of Urban Management
Model Curriculum (International Course in Urban and Regional Development)

1. Targeted students

Students who belong to Advanced Engineering Course Program (5yr Course) and take International Course in Urban and Regional Development in Master's program or students who belong to Advanced Engineering Course Program (3yr Course).

2. Purpose of the model curriculum

We aim to develop internationally competitive infrastructure, make urban policy to achieve socioeconomic development, and develop urban management technology. In this course, we will foster human resources who achieve these goals and also have professional knowledge and leadership. For this purpose, students are required to take wide range of English subjects related to Urban Management.

3. Model curriculum

5yr Course（Mater's Program）			
Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
M1 1st term	Information Technology for Urban Society (Required) Exercise on Project Planning (Required-elective) Capstone Project (Required-elective) 1-6 subjects from English subject group on "Subject List" of the Department of Urban Management, 0-5 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Urban Management A/B (Required/ 2-year subject. Accredited 4 credits for each, 8 credits in total judging the study condition when completed)	12 credits
M1 2nd term	Exercise on Project Planning (Required-elective) Capstone Project (Required-elective) 1-5 subjects from English subject group on "Subject List" of the Department of Urban Management 0-4 subjects from English Common Subjects of Graduate School of Engineering	Seminar on Urban Management A/B (Required)	10 credits
M2 1st term		Seminar on Urban Management A/B (Required)	
M2 2nd term		Seminar on Urban Management A/B (Required) Master's Thesis (Required)	8 credits 0 credits
Credits	22 or more credits	8 or more credits	30 or more credits
5yr Course（Doctoral Program）, 3yr Course（Doctoral Program）			
Year	Subjects（Core, Major, Minor, Others）	ORT subjects	Credits
D1 1st term	Integrated Seminar on Urban Management A (Required) Practice in Advanced Urban Management	ORT on Urban Management (3-year subject, accredited 4 credits after judging the study condition when completed)	2 credits
D1 2nd term	Integrated Seminar on Urban Management B (Required) Practice in Advanced Urban Management	ORT on Urban Management	4 credits
D2 1st term		ORT on Urban Management	
D2 2nd term		ORT on Urban Management	
D3 1st term		ORT on Urban Management	
D3 2nd term		ORT on Urban Management Doctoral Thesis (Required)	4 credits 0 credits

Total	6 or more credits	4 or more credits	10 or more credits

(Note)

1) Students are required to take 4 or more credits from English subjects on “Subject List”. Consult with your supervisor and decide which subjects to take. Subjects to be accredited as completion requirements are English subjects only (including ‘Information Technology for Urban Society’ ‘Exercise on Project Planning’ ‘Capstone Project’ ‘Seminar on Urban Management A/B’).

2) 7 courses are prepared other than completion requirements in the Master’s program of the Department of Urban Management. Those who satisfy the completion requirements will receive the certificate when completed. Regarding details of the courses, please refer to the documents distributed at guidance.

Course Groups of the Department of Civil and Earth Resources Engineering

April 3, 2015

Students can complete any of the 6 courses below besides their normal completion requirements. You don't have to apply to the following courses in the normal subject registration. However, if you satisfy the completion requirements for any one or several courses below, you are eligible to receive a completion certificate at the time of completion of your Master's Program after notifying the professor in charge of student affairs 1 or 2 months before your graduation.

[Course 1] Structural Design Engineer/Researcher Training Course

(1) Content：

Japan has always been hit by a lot of natural disasters like earthquake and typhoon with various natural environments. Under such condition, it is not easy to construct structures which guarantee a safe, secure, and comfortable social infrastructure as civil life. Therefore, this course aims to bring up such personnel who are capable of planning, designing, constructing, maintaining, and managing the structures which realize energy-saving, eco-friendly and cost-effective aspects. First of all, the students are required to master mathematics, dynamics, and microscopic views toward materials. Then, the students will aim to acquire the skill to plan and practice both hardware and software, the evaluation and improvement of the property of such structure, input operation and static/dynamic response, and long-term maintenance and supply, expanding the object to large scale ones.

(2) Required subject groups

Compulsory subjects: 10 credits in total

Continuum Mechanics, Structural Stability, Material and Structural System & Management, Earthquake Engineering/Lifeline Engineering, Infrastructural Structure Engineering

Elective compulsory subjects (One or more among below subjects are required.)

: 2 or more credits in total

Structural Design, Bridge Engineering, Concrete Structural Engineering, Structural Dynamics, Seismic Simulation Exercise, Ecomaterial and Environment-friendly Structures, Infrastructure Safety Engineering, Computational Fluid Dynamics, Applied Mathematics in Civil & Earth Resources Engineering, Computational Mechanics and Simulation

[Course 2] Hydraulic/Hydrologic Design Engineer/Researcher Training Course

(1) Content：

This course aims to educate engineers and researchers who can suggest practical technologies and develop state-of-the-art technologies to solve various water-related problems and to improve, maintain, and manage such hydraulic infrastructure. Based on the understanding of turbulence phenomenon, Computational Fluid Dynamics, water circulation mechanism, and the sediment transport system from mountains to rivers (coasts), students will acquire the skill to realize advanced hydrologic design and technological development through the designing and planning of hydrologic structure.

(2) Required subject groups

Compulsory subjects: 8 credits in total

Hydrodynamics and Turbulence Mechanics, Hydrologic Design and Prediction, River Management, Sediment

Hydraulics

Elective compulsory subjects (4 or more among below subjects are required.)

: 8 or more credits in total

Hydrology, Open Channel Hydraulics, Coastal Wave Dynamics, Hydro-meteorological Disaster Prevention, Water Resources Systems, Disaster Mitigation for Sustainable Basin Environment, Coastal and Urban Water Disasters Engineering, Disaster Mitigation for Sustainable Basin Environment, Computational Fluid Dynamics, Hydraulic Engineering for Infrastructure Development and Management, Applied Hydrology, Case Studies Harmonizing Disaster Management and Environment Conservation, Integrated Disasters and Resources Management in Watersheds

[Course 3] Geo Design Engineer/Researcher Training Course

(1) Content：

In addition to geomechanics and basic engineering, which are the theoretical and technological fields to deal with various engineering problems of geomechanics consisting of soil, rock and flow, this course aims to cover a wider range relating to geomechanic studies. This course aim to educate engineers and researchers who would be responsible for the improvement, construction, and maintenance of the infrastructure essential to produce and preserve a comfortable life environment and lead enhanced social activity through research, design, construction, disaster prevention, environmental protection, and research and development of the technologies for energy resources.

(2) Required subject groups

Elective compulsory subjects (6 or more among below subjects are required.)

: 12 or more credits in total

Geomechanics, Computational Geotechnics, Construction of Geotechnical Infrastructures, Fundamental Geofront Engineering, Environmental Geotechnics, Disaster Prevention through Geotechnics

[Course 4] Urban Design Engineer/Researcher Training Course

(1) Content：

This course aims to acquire theoretical methods for a comprehensive understanding of global to local environments for the design of urban space and facility, both of which to harmonize with the environment. The course will further raise such personnel who would accurately support the information and propose of practical design, generalizing such information. Therefore, students are required to understand the spatial distribution of natural and human-activity-related various phenomena, elucidate the methodology to analyze physical and social mechanism, urban landscape and cultural environment, to acquire the skill to design organized space and facility.

(2) Required subject groups

Compulsory subject: 4 or credits in total

Remote Sensing and Geographic Information System, Civic and Landscape Design

Elective compulsory subjects (3 or more among below subjects are required.)

: 6 or more credits in total

Governance for Regional and Transportation Planning, Public Finance, Urban Environmental Policy, City Logistics, Advanced Transport Logistics, Public Psychology for Human Behaviour, Intelligent Transportation Systems, Theory & Practice of Environmental Design Research, Risk Management,

Disaster Risk Management, Disaster Information, Urban Infrastructure Management

[Course 5] Earth Resources and Energy Engineer/Researcher Training Course

(1) Content：

This course aims to create and develop technologies to explore, develop, and utilize resource energies through the integration and development within the framework of computational and experimental mechanics, and theory and applied dynamics inheriting the basic earth resource and energy engineering which has supported the social infrastructure. This course educates engineers who will posses state-of-the-art intelligence which recognizes both the inside and outside of Japan with a high practical ability of focusing the education to the researchers and engineers who would take on the sustainable development of social infrastructure in the future. Therefore, students are required to enroll in subject groups to establish an engineering foundation, but also to develop application capability skills with Exercise on Project Planning.

(2) Required subject groups

Elective compulsory subjects (6 or more among below subjects are required.)

: 12 or more credits in total

Resources Development Systems, Applied Mathematics in Civil & Earth Resources Engineering, Computational Mechanics and Simulation, Environmental Geosphere Engineering, Modeling of Geology, Applied Elasticity for Rock Mechanics, Fundamental Theories in Geophysical Exploration, Design of Underground Structures, Frontiers in Energy Resources, Lecture on Exploration Geophysics, Measurement in The Earth's Crust Environment, Time Series Analysis, Energy System Management, Infrastructure Safety Engineering

[Course 6] International Course on Approaches for Disaster Resilience

(1) Content：

The objective of this course is to construct new concepts for building disaster-resilient countries and train students who lead them. This course aims to educate the personnel who acquire not only the technologies necessary in engineering management, but also an interdisciplinary knowledge from a socioeconomic point of view for infrastructure developments, especially for disaster mitigation, recovery, and reconstruction.

(2) Required subject groups

Compulsory subjects: Engineering Seminar on Building Resilient Nation 1, Engineering Seminar on Building Resilient Nation 2, Engineering Seminar on Building Resilient Nation 3, Disaster and Health Risk Management for Liveable City

: 8 credits in total

Elective compulsory subjects (3 or more subjects from English-lectured classes with double circle (◎) provided on the Subject List (Master's Program of Department of Urban Management as well as Department of Civil and Earth Resources Engineering), plus at least one subject of the following; Disaster Prevention & Recovery Management, Policy Evaluation, which are offered by Graduate School of Management .)

: 8 or more credits in total

: 16 minimum total credits for compulsory and elective compulsory subjects.

※An explanatory meeting will be held for those who will take this course.

Course Groups of the Department of Urban Management

April 3, 2015

[Course 1] Public Policy Planning/Management Course

(1) Content :

This program aims to educate the personnel who would be responsible for planning and implementing the public policy and urban management measure, both of which are essential for the construction of the safe and comfortable urban system which secures the quality of life. In addition to an engineering view point for urban infrastructure improvement and operation, this course train students to be able to demonstrate their leadership in various occasions in practical society with their multiple and flexible thoughts and planning abilities to comprehensively evaluate and discuss future urban profile from the viewpoint of information infrastructure, urban construction and planning, risk management, and finance as well.

(2) Required subject groups

Compulsory subjects: Public Finance, Urban Environmental Policy, Risk Management

: 6 credits in total

Elective compulsory subjects (2 or more among below subjects are required.)

City Logistics, Public Psychology for Human Behaviour, Intelligent Transportation Systems, Remote Sensing and Geographic Information System, Civic and Landscape Design, Disaster Risk Management

: 4 or more credits in total

[Course 2] International Project Management Course (Infrastructure/Energy Development)

(1) Content :

Recently, both infrastructure and energy resource development projects have been shifting to an international scale procurement ones. This course aims for you to acquire not only the technologies necessary in engineering management, but also an interdisciplinary knowledge from a socioeconomic point of view for both infrastructure and energy developments.

(2) Required subject groups

Compulsory subjects: Exercise on Project Planning or Capstone Project, Management of Geotechnical Infrastructures, Resources Development Systems, Public Finance

: 8 credits in total

Elective compulsory subjects (3 or more among below subjects are required.)

Construction of Geotechnical Infrastructures, Fundamental Geofront Engineering, Frontiers in Energy Resources, Urban Infrastructure Management, Risk Management, Modeling of Geology, Energy System Management, Environmental Geosphere Engineering

: 6 or more credits in total

[Course 3] Urban Water/Geo Environment Management Course

(1) Content :

Cities are located on the basin, basically consisting of water and ground where people live. From such point of view, this program is set to train urban water or ground environment planner who aims to create cities where we can demonstrate a coexistence with nature and people's potential capacity along the basin. Also, the students can learn mutual interaction behaviors between the water and the ground, both of which are closely related with each other. With the analysis of such mutual interaction, substance transfer therein, chemical reaction, and deformation behavior as the main elemental technique, this course covers a wide range including the analysis of the phase transition of city and basin and object setting based on environmental information, actual basin plan

from the points of water circulation and supply, river improvement utilization and environment, urban water and ground environment and actual disaster prevention plan, and underground space planning and construction techniques.

(2) Required subject groups

Compulsory subjects: River Management, Construction of Geotechnical Infrastructures, Hydrologic Design and Prediction, Hydro-meteorological Disaster Prevention, Environmental Geotechnics

: 10 credits in total

Elective compulsory subjects (2 or more among below subjects are required.)

Water Resources Systems, Coastal Wave Dynamics, River Basin Management of Flood and Sediment, Coastal and Urban Water Disasters Engineering, Disaster Mitigation for Sustainable Basin Environment, Management of Geotechnical Infrastructures, Geo-Risk Engineering, Disaster Prevention through Geotechnics, Urban Environmental Policy

: 4 or more credits in total

[Course 4] Seismic Design/Management Course

(1) Content：

It is not sufficient to conduct disaster risk management in advanced information societies with just the knowledge of risk control including long-term quake-resistant technology. Rather it is necessary to approach from a comprehensive point of view taking economic, environmental and social problems into consideration as well. In this course, you will acquire comprehensive management techniques and incorporating risk finance technology as well as the dynamic behavior of ground, structure, and lifeline, and the most recent quake-resistant engineering and design including ecomaterial.

(2) Required subject groups

Compulsory subjects: Required subjects: Structural Dynamics, Earthquake Engineering/Lifeline Engineering, Seismic Simulation Exercise, Ecomaterial and Environment-friendly Structures, Exercise on Project Planning or Capstone Project,

: 10 credits in total

Elective compulsory subjects (2 or more among below subjects are required.)

Structural Design, Risk Management, Continuum Mechanics, Material and Structural System & Management, Management of Geotechnical Infrastructures, Construction of Geotechnical Infrastructures, Geo-Risk Management, Disaster Risk Management, Disaster Information, Emergency Management Systems

: 4 or more credits in total

[Course 5] Urban Transportation Policy Course (Urban Planning, Urban Transport Policy)

(1) Content：

This course aims to educate the personnel who would plan and implement urban and transportation policies which are essential to construct safe, comfortable, and vital urban system. These cities must be constructed not only from the view point of efficacy, liability, and economic potential, but from an environmental and human perspective as well. Thus, the course leads students to discuss and plan in both scientific and logical ways by giving them the concept and method of urban and transportation policies from new prospects.

(2) Required subject groups

Compulsory subjects:

Urban Environmental Policy, City Logistics, Public Psychology for Human Behavior

: 6 credits in total

Elective compulsory subjects (4 or more credits are required to obtain through the following subjects)

Governance for Regional and Transportation Planning, Intelligent Transportation Systems, Advanced Transport Logistics, Urban Transport Policy (Unit for Low-Carbon Society), Policy for Low-Carbon Society (Unit for Low-Carbon Society), Urban Transport Management (Unit for Low-Carbon Society)

(Note: Only 1 credit is granted for 1 subject for the lectures in the Unit for Low-Carbon Society.)

: 4 or more credits in total

[Course 6] Earth Resources and Energy Engineer/Researcher Training Course

(1) Content :

This course aims to create and develop technologies to explore, develop, and utilize resource energies through the integration and development within the framework of computational and experimental mechanics, and theory and applied dynamics inheriting the basic earth resource and energy engineering which has supported the social infrastructure. This course educates engineers who will posses state-of-the-art intelligence which recognizes both the inside and outside of Japan with a high practical ability of focusing the education to the researchers and engineers who would take on the sustainable development of social infrastructure in the future. Therefore, students are required to enroll in subject groups to establish an engineering foundation, but also to develop application capability skills with Exercise on Project Planning.

(2) Required subject groups

Elective compulsory subjects (6 or more among below subjects are required.)

: 12 or more credits in total

Resources Development Systems, Applied Mathematics in Civil & Earth Resources Engineering, Computational Mechanics and Simulation, Environmental Geosphere Engineering, Modeling of Geology, Applied Elasticity for Rock Mechanics, Fundamental Theories in Geophysical Exploration, Design of Underground Structures, Frontiers in Energy Resources, Lecture on Exploration Geophysics, Measurement in The Earth's Crust Environment, Time Series Analysis, Energy System Management, Infrastructure Safety Engineering

[Course 7] International Course on Approaches for Disaster Resilience

(1) Content :

The objective of this course is to construct new concepts for building disaster-resilient countries and train students who lead them. This course aims to educate the personnel who acquire not only the technologies necessary in engineering management, but also an interdisciplinary knowledge from a socioeconomic point of view for infrastructure developments, especially for disaster mitigation, recovery, and reconstruction.

(2) Required subject groups

Compulsory subjects: Engineering Seminar on Building Resilient Nation 1, Engineering Seminar on Building Resilient Nation 2, Engineering Seminar on Building Resilient Nation 3, Disaster and Health Risk Management for Liveable City

: 8 credits in total

Elective compulsory subjects (3 or more subjects from English-lectured classes with double circle (◎) provided on the Subject List (Master's Program of Department of Urban Management as well as Department of Civil and Earth Resources Engineering), plus at least one subject of the following; Disaster Prevention & Recovery Management, Policy Evaluation, which are offered by Graduate School of Management .)

: 8 or more credits in total

: 16 minimum total credits for compulsory and elective compulsory subjects.

※An explanatory meeting will be held for those who will take this course.

Seminar on Infrastructure Engineering A,B

(for Master Course students, Dept. of Civil and Earth Resources Eng.)

Seminar on Urban Management A,B

(for Master Course students, Dept. of Urban Management)

Seminar on Infrastructure Engineering A / Seminar on Urban Management A

This seminar has the lectures about the movement and content of the most advanced research at home and abroad on Infrastructure Engineering / Urban Management. The students are individually instructed about the planning of study schedule, the way of collecting data, the way of doing the research and summarizing the results of research.

Seminar on Infrastructure Engineering B / Seminar on Urban Management B

The students make the collection of data, research and summarize the research results about the concrete and specific themes on Infrastructure Engineering / Urban Management Engineering. In addition, the students are individually instructed about the way of presentation of research results through the presentations at the conferences at home and abroad, the ones at laboratory and participation in training course.

Students are required to do the self-rating (refer the below point list), and to get **more than 3 points in total for a year, more than 10 points in total for two years**. Students should fill out number of the points in the portfolio and submit it after every semester (submit the final portfolio with the submission of Master thesis). The actual period of submission will be notified separately.

1 point	: Presentation at laboratory seminar Oral presentation in the annual meeting in the Society of Civil Engineers
1～5 point	: Attending the lecture held by Academic Society (Certification is required) Number of points is determined by your supervisor in accordance to the level of difficulty for approval.
3 point	: Presentation in English in international conference If the papers are peer-reviewed, the points are determined as journal papers (see below).
5～10 point	: Publication and/or acceptance of journal papers (e.g., for Journal of Society of Civil Engineers, ASCE Journal, etc.) (Number of points is determined by your supervisor.)
Others	: Exercise on project or training course (Number of points is determined by your supervisor.) However, the activities related to the other courses are not admitted, which are Exercise on Project Planning, Capstone Project, Internship on Infrastructure Engineering, Long-Term Internship, Practice in Infrastructure Engineering or Practice in Urban Management.

April 3, 2015

Exercise on Project Planning

(Civil and Earth Resources Engineering and Urban Management)

1. Objective

   -To bring out each students' own planning ability and creativity in order to achieve their goal.
   -Specifically, students are to write a report on a company's internship activities, training activities at national and international universities and companies, joint project planning and management of citizens, themes and theses research on different research activities, and its purpose methods.

2. Professors in charge

   - Assoc. Prof. Yosuke Higo (Department of Urban Management ）
   Email: higo.yohsuke.5z@kyoto-u.ac.jp, phone: 075-383-3305
   - Assoc. Prof. Kazuyoshi Takahashi (Department Civil and Earth Resources Engineering)
   Email: takahashi.yoshikazu.4v@kyoto-u.ac.jp: 075-383-3245

3. Main Target

   -1st year in the Master Course of Civil and Earth Resources Engineering and Urban Management.

4. Certified credits

   -Civil and Earth Resources Engineering: 2 compulsory core subjects per year
   -Urban Management: 2 chosen compulsory core subjects per year

5. Operation means

   （１） Course introduction : April 9 (Thu) 13:00- Katsura C1-173

   （２） Submission of proposal, Due date: June 4 (Thu), Note: Use the 'proposal format' in the KULASIS.

   ★ **Students who wish to take this class should be registered through KULASIS with an appropriate email address** as all of the information will be available throhgh KULASIS. **When the email has been changed, the address registered in the KULASIS should be revised accordingly**. Frequent visits to the KULASIS would be highly recommended.
   FYI, the followings ara the principal issues to be written in the proposal.

   - Project Title (Japanese and English)
   - Name, Research Room, E-mail address
   - Name of your advisor (professor, associate professor, teacher that is related to your major)
   - Summary (around 200 words in English), goal and method (from the planning to the operation in detail), result expectations, publication planning.

   After the completion of your proposal, receive a signature or a seal from your advisor and submit your proposal to the academic affairs office in C-cluster with conventional paper-based. **Also you are requested to submit the proposal with Excel file to the following email address**:

   jisyukikaku@adm.t.kyoto-u.ac.jp

   Note: The subject of the email shall be IPP, Name, Student # in order, and the Excel file name shall be "IPP_Name_Student#.xlsx".

   （３）Progress report Due date : October 8 (Thu)

   Write your progress report within a page on an A4 size paper. Receive a signature or a seal from your advisor and submit it in to the office in C-cluster.

   （４）Submission of the final report Due date : January 7 (Thu) 2016

   Create a final report on your results and submit your proposal to the academic affairs office in C-cluster with

conventional paper-based. **Also you are requested to submit the report with word file to the email address:**
jisyukikaku@adm.t.kyoto-u.ac.jp

The subject of the email shall be IPP, Name, Student # in order, and the name of word file shall be "IPP_Name_Student#.docx". Note, your report should be within 10 pages in JSCE format (refer to the url: http://committees.jsce.or.jp/jjsce/english/formats).
Also, please submit your final report AFTER the confirmation by your advisor.

6. Attentions
   - When forming a group, your group cannot exceed 5 members.
   - Along with Civil and Earth Resources Engineering internship as well as long-term internship, your activities will be presented in late January 2016.

How to Submit a Portfolio (for new master's students in the Academic Year 2015)

(1) Go to a website of your department and download a copy of the portfolio form (MS-Word).→[Download]
(2) Fill out the form in designated pages (see below＊)and then print it.
(3) Students in the Department of Civil and Earth Resources Engineering: Obtain supervisor signature in the signature space of printed portfolio.
Students in the Department of Urban Management: Obtain supervisor and sub-supervisor signatures in the signature space of printed portfolio.
(4) Scan pertinent pages of portfolio and make one PDF file, then send it as e-mail attachment to the address below. When students complete the 4th semester in the 2nd Year, they must submit original portfolio to C Cluster Office.

Send a portfolio to the following e-mail address

kyomu-ceum@adm.t.kyoto-u.ac.jp

Note 1 : E-mail subject line must be written as follows:
Student ID number (half-size 10-degit number) ＋ student's department (the Department of Civil and Earth Resources Engineering→CE or the Department of Urban Management→UM ※use half-size characters)＋ student's name
(Example) 1234567890CE Taro Yamada
Note 2 : When students send PDF file, they also must send e-mail to their supervisors (and sub-supervisors) with CC.
Note 3 : Be sure to have appropriate file size. Preferred file size is around 100kb.
Note 4 : File name must be written as follows;
"Student ID number "+"Student"s name" + ".pdf"
(Example) 1234567890CE Taro Yamada.pdf

(5) Keep your original copy of printed portfolio in a safe place. (Students must submit original portfolio after the end of 4th semester in the 2nd Year.)

*Below are pages students must fill in for master's portfolio
・at school entry
Fill in page 1-3 of Academic Portfolio (for Master Course)
Deadline: April 13rd, 2015 (must send filled form in a PDF file.)

・after the end of the 1th semester in the 1th Year

Fill in page 4-5

Schedule Deadline: late September in 2015 (must send filled form in a PDF file.)

・after the end of the 2nd semester in the 1th Year

Fill in page 6-7

Schedule Deadline: late April in 2016 (must send filled form in a PDF file.)

・after the end of the 3rd semester in the 2nd Year

Fill in page 8-9

Schedule Deadline: late September in 2016 (must send filled form in a PDF file.)

・after the end of the 4th semester in the 2nd Year

Fill in page 10-12

Schedule Deadline: late January in 2017 (must submit original copy of all pages 1-12)

[2015 年 4 月提出用] 指導教員の署名を取得後、1-3 ページをまとめて PDF にして指定アドレスに電子提出する。原本は大切に保管すること。

京都大学工学研究科　社会基盤工学専攻・都市社会工学専攻
ポートフォリオ（修士課程）　2015 年 4 月入学者用

Academic Portfolio (for Master Course, Dept. of Civil and Earth Resources Eng. and Dept. of Urban Management)

			2015 年　4 月　入学 Entered Apr. 2015
専攻名 Department	学生番号 Student ID	コース Course 高度･融合(分野) Advanced or Interdisciplinary(field)	氏　　名 Name
社会基盤工学専攻	**1234567890**		**山田　太郎**

所属分野 Laboratory	主指導教員 Supervisor	副指導教員(1)* Sub-supervisor 1	副指導教員(2)* Sub-supervisor 2
○○○○分野	○○○○	△△△△	□□□□
教育プログラムの選択(Major 履修科目の系) Division of education program for major subjects			
（例） **水工系教育プログラム**			

* 社会基盤工学専攻所属の修士課程学生は記入不要。 No need to fill in for master course students at Dept. of Civil and Earth Resources Eng.

Current address

現	（例） ○○市○○町○○○	TEL(固定, fixed)	**000-000-0000**
住		TEL(携帯, cp)	**000-000-0000**
所		E-mail	**（全学メールアドレスを記入）**

		TEL(固定, fixed)	
		TEL(携帯, cp)	
		E-mail	

		TEL(固定, fixed)	
		TEL(携帯, cp)	
		E-mail	

Hometown address

帰	（例） ○○市○○町○○○	TEL(1)	**000-000-0000**
省		FAX or TEL(2)	
先		E-mail	

		TEL(1)	
		FAX or TEL(2)	
		E-mail	

氏名(Name)： 山田 太郎

学習目標 Your goals

所属専攻、コースにおいて修了に必要な単位 Credits required for completion
（大学院学習要覧を参考にして記入）

科目区分 Subject category	単位数 Credits	
	修士課程 Master Program	博士後期課程 Ph.D. Program
コア科目 Core	2 単位以上	単位以上
Major 科目	10 単位以上	単位以上
Minor 科目	8 単位以上	単位以上
演習・ORT・インターンシップ科目	単位以上	単位以上
その他の科目 Others	単位以上	単位以上
合 計 Total	30 単位以上	単位以上

資格・公的試験の目標 Your plans on acquisition of professional licenses/qualifications

資格等の名前 Category	取得予定年月 Planned date	実際の取得年月 Actual date	備 考 Remark

大学院在籍中の勉学目標 Your study goals in Master (and Ph.D.) program
（例） 査読付論文集を執筆し、掲載されることを目指す。（○○工学論文集など） 国際会議において口頭発表を行う。 土木学会全国大会で優秀講演者賞の受賞を目指す。

履修コースの修得目標 Your study goals to obtain the Courses designated by the department
（例） 水工系の履修コースの関連科目の単位を修得し、コース認定されることを目標とする。

その他の目標 Other goals
（例）TOEIC800点以上を獲得。

氏名(Name)： 山田 太郎

テーラーメイド学習計画 Study/Research Plan

一般科目 Course works （単位 credits）

年・セメスター Year/Semester		コア科目 Core	Major 科目	Minor 科目	演習 ORT 等	その他科目 Others
1年	1	2 単位	24 単位	単位	8 単位	単位
1st year	2	単位	単位	単位	単位	単位
2年	3	単位	単位	単位	単位	単位
2nd year	4	単位	単位	単位	単位	単位
小 計 Subtotal		2 単位	28 単位	単位	8 単位	単位
研究論文(修士) Master dissertation		必修 Compulsory				
3年	5	単位	単位	単位	単位	単位
3rd year	6	単位	単位	単位	単位	単位
4年	7	単位	単位	単位	単位	単位
4th year	8	単位	単位	単位	単位	単位
5年	9	単位	単位	単位	単位	単位
5th year	10	単位	単位	単位	単位	単位
小 計 Subtotal		単位	単位	単位	単位	単位
合 計 Total		単位	単位	単位	単位	単位
研究論文(博士) Doctoral dissertation		必修 Compulsory				

特別実験及び演習（修士論文） Master dissertation

研究目標（テーマ・目的等） Purpose/Plan	（例） 開水路ワンド流れの基礎的研究 河床高自動計測システムを開発する。

インターシップ・海外研修等の計画 Internship plan

（例） ○○株式会社の夏季インターンシップに参加する。

指導教員の署名欄 Approval from your supervisors (to be signed by your supervisors)

主指導教員 Supervisor	副指導教員 Sub-supervisor 1	副指導教員 Sub-supervisor 2
○○○○	△△△△	□□□□

氏名(Name)： 山田 太郎

学習の状況

Your progress and self-evaluation in the first semester (to be filled after the first semester)

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

取得単位数 Credits acquired

	コア科目 Core	Major 科目	Minor 科目	演習 ORT 等	その他科目 Others	合 計 Total
今期の取得単位数 In this semester	単位	単位	単位	単位	単位	単位
積算取得単位数 Total	単位	単位	単位	単位	単位	単位

氏名(Name)： 山田 太郎

特別実験及び演習（修士論文） Dissertation study

研究題目 Title		
研究経過 Progress		
目標到達度と今後の課題 Goals and Challenges		
社会基盤工学セミナーA,B / 都市社会工学セミナーA,B 活動内容と獲得ポイント Points and activities for Seminar on Infrastructure Eng. A,B / Urban Management A, B		今期の取得ポイント Points acquired in this semester
		積算取得ポイント Total points

指導教員の署名欄 Approval from your supervisors (to be signed by your supervisors)

主指導教員 Supervisor	副指導教員 Sub-supervisor 1	副指導教員 Sub-supervisor 2

氏名(Name)： 山田 太郎

学習の状況

Your progress and self-evaluation in the second semester (to be filled after the second semester)

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

取得単位数 Credits acquired

	コア科目 Core	Major 科目	Minor 科目	演習 ORT 等	その他科目 Others	合 計 Total
今期の取得単位数 In this semester	単位	単位	単位	単位	単位	単位
積算取得単位数 Total	単位	単位	単位	単位	単位	単位

氏名(Name)： 山田 太郎

特別実験及び演習（修士論文） Dissertation study

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氏名(Name)： **山田　太郎**

学習の状況

Your progress and self-evaluation in the third semester (to be filled after the third semester)

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

取得単位数 Credits acquired

	コア科目 Core	Major 科目	Minor 科目	演習 ORT 等	その他科目 Others	合　計 Total
今期の取得単位数 In this semester	単位	単位	単位	単位	単位	単位
積算取得単位数 Total	単位	単位	単位	単位	単位	単位

氏名(Name)： **山田　太郎**

特別実験及び演習（修士論文） Dissertation study

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主指導教員 Supervisor	副指導教員 Sub-supervisor 1	副指導教員 Sub-supervisor 2

氏名(Name)： **山田　太郎**

学習の状況

Your progress and self-evaluation in the forth semester (to be filled after the fourth semester)

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

取得単位数 Credits acquired

	コア科目 Core	Major 科目	Minor 科目	演習 ORT 等	その他科目 Others	合　計 Total
今期の取得単位数 In this semester	単位	単位	単位	単位	単位	単位
積算取得単位数 Total	単位	単位	単位	単位	単位	単位

氏名(Name)： 山田 太郎

特別実験及び演習（修士論文） Dissertation study

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指導教員の署名欄 Approval from your supervisors (to be signed by your supervisors)

主指導教員 Supervisor	副指導教員 Sub-supervisor 1	副指導教員 Sub-supervisor 2

氏名(Name)： 山田 太郎

履修コースの修了の申請

Application to obtain the Course Certificate (to be submitted on February in the fourth semester)

履修コース名 Course name:

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

履修コース名 Course name:

履修科目名 Subject	科目区分 Subject category (Core, Major, Minor, ORT, Others)	単位 Credit	合否 Pass/Fail

The Handling of Test Reports

Due to the improvements of internet technologies in recent years, global data (including theses and reports) are easily accessed. In the past there were no regulations on how to handle test reports.

The regulations on handling test reports from now on are as follows:

1. Objective
   -Clarification on handling test reports
   -Prevention of plagiarism.

2. Warning
   -If you have written a report with references with internet materials, be aware of the directions below.

   ① Reports are given tasks from teachers and are to be written in your own words and thoughts. Reports written by copying someone else's words are unaccepted.
   ② Referring to internet materials to prove your point is acceptable, but make sure the materials relate to your report.
   ③ If you have quoted a reference, cite the source at the end of the report.
   ④ If you have used someone else's words or ideas and did not cite them, the report will be accepted as plagiarism (Laws of Engineering Examination Article 16).