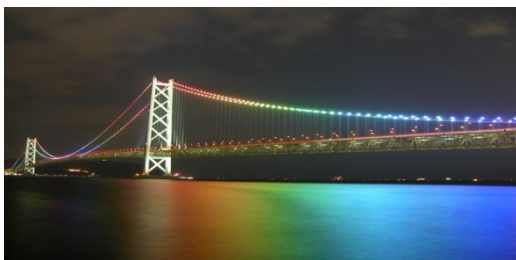
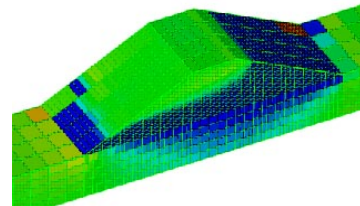


## English Supplemental Handout

### ***Guidelines for International Applicants to the 2014 Master's Program February Examination***

International Course in Management of Civil Infrastructure  
in the Department of Civil and Earth Resources Engineering,

International Course in Urban and Regional Development  
in the Department of Urban Management



Graduate School of Engineering

Kyoto University



## I. The International Courses of K. U. PROFILE

K. U. PROFILE, Kyoto University Programs for Future International Leaders, is Kyoto University's educational initiative under the Japanese government's Global 30 (G30) Program. It aims to contribute to the development of a stable global society by gathering together talented students from around the globe and providing them with the education, research experience and global perspective needed to help them become international leaders in their fields.

K.U. PROFILE presents a selection of twelve new courses for international students which take full advantage of Kyoto University's distinctive strengths and state-of-the-art facilities. **International Course in Management of Civil Infrastructure** in the Department of Civil and Earth Resources Engineering, and **International Course in Urban and Regional Development** in the Department of Urban Management started in April 2011. **All classes are provided in English.** With a new international course in the Undergraduate School of Global Engineering, the above-mentioned two-year courses aim to cultivate human resources capable of designing and managing civil infrastructures while considering global environmental issues around urban and regional areas, particularly in order to solve the problems in Asian and African countries.



## II. Study Areas

The two departments hold a joint entrance examination for the two international courses. **Applicants should choose an area for special study during their master's research and indicate one choice in the space provided in the application form. Applicants should have contacted the preferred supervisor from whom they wish to receive supervision prior to submitting their application documents, and the form must be signed by the supervisor.** The study areas available for examination in February 2014 are listed in the following tables.

**Inquiries regarding the contact information for faculty members should be addressed to the Administrative Office for International Courses, Graduate School of Engineering.**

### Administrative Office of the International Courses

Department of Civil and Earth Resources Engineering  
Department of Urban Management  
Graduate School of Engineering, Kyoto University

**E-mail: [icp\\_master@t.kyoto-u.ac.jp](mailto:icp_master@t.kyoto-u.ac.jp)**

(1) International Course in Management of Civil Infrastructure in the Department of Civil and Earth Resources Engineering

Area No.	Research topic (Faculty) (As of October 2013)
1	<b>Applied Mechanics:</b> Particle-based computational fluid dynamics, fluid-structure interaction, turbulence modeling, mechanical stabilization of undersea tunnels, development and application of the rigid plastic finite element method ( <b>Assoc. Prof. Abbas Khayyer, Assoc. Prof. Jun Saito</b> )
2	<b>Structural Materials Engineering:</b> Properties of structural materials including concrete, characteristics and design techniques of concrete structures, performance and maintenance techniques of concrete structures, scenario design for concrete structures ( <b>Prof. Toyooki Miyagawa, Assoc. Prof. Takashi Yamamoto</b> )
3	<b>Structural Mechanics:</b> Structural behavior of steel/composite structures and their rational design, Nondestructive evaluation of residual performance and maintenance of structures, dynamic analysis of offshore structures ( <b>Prof. Kunitomo Sugiura, Assoc. Prof. Tomoaki Utsunomiya</b> )
4	<b>Bridge Engineering:</b> Aerodynamics of bridges and structures, mechanisms of flow-induced phenomena, countermeasures, wind loading, risk assessment, mitigation of wind-induced disasters, corrosion degradation of structures ( <b>Prof. Hiromichi Shirato</b> )
5	<b>Structural Dynamics:</b> Dynamic response and vibration of structures, wind-induced vibration, seismic and wind resistant design, seismic and aerodynamic performance of structural systems, dynamic response control ( <b>Prof. Tomomi Yagi</b> )
6	<b>Environmental Hydrodynamics:</b> Air-water interfacial dynamics, coherent structure, mass transfer in vegetated flows, floodplain hydraulics, interaction between fluid and sediment, computation of turbulent flows, water related disasters ( <b>Prof. Keiichi Toda, Assoc. Prof. Michio Sanjou</b> )
7	<b>Hydrology and Water Resources Research:</b> The hydrologic cycle, hydrologic prediction, real-time hydrologic forecasting, hydrologic design, water resources management ( <b>Prof. Yasuto Tachikawa</b> )
8	<b>Geomechanics:</b> Large deformation and failure of ground: experiment and simulation, advanced liquefaction analysis method, hazard map for liquefaction, methane containing ground, reclamation and reinforcement of river and road embankments ( <b>Assoc. Prof. Sayuri Kimoto</b> )

Area No.	Research topic (Faculty) (As of October 2013)
9	<b>Infrastructure Innovation Engineering:</b> Mechanical behavior of foundations(pile, caisson and steel pipe sheet piles), Mechanical behavior of shallow tunnels, Mechanical behavior of retaining wall, Development of infrastructure innovative technology, improvement of rural infrastructure in developing countries (Prof. Makoto Kimura)
10	<b>Geoinformatics:</b> Remote sensing, geographic information systems, digital photogrammetry, three-dimensional urban modeling (Prof. Masayuki Tamura, Assoc. Prof. Junichi Susaki)
11	<b>Urban and Landscape Design:</b> Landscape design, urban design, architecture of infrastructure and environment, cultural climate and environment, regional planning, urban history, etc. (Prof. Masashi Kawasaki, Assoc. Prof. Yoshiaki Kubota)
12	<b>Urban Coast Design:</b> Design and planning of urban coastal structures, particle method, computational wave dynamics, computational fluid dynamics, computational mechanics of sediment transport, computational mechanics for multiphase flow, crowd and multi-agent simulation in urban areas (Prof. Hitoshi Gotoh, Assoc. Prof. Eiji Harada)
13	<b>Geophysics:</b> Geophysical exploration of shallow to deep crustal structures, geophysical modeling of geological phenomena that influence human activities, visualization of subsurface geophysical properties (Prof. Hitoshi Mikada, Assoc. Prof. Tada-nori Goto)
14	<b>Earth Crust Engineering:</b> Improved methods to evaluate the mechanical properties of rock, evaluation of fluid flow behavior in oil and gas reservoirs, underground storage of natural gas and carbon dioxide, effective utilization of underground space (Prof. Tsuyoshi Ishida, Assoc. Prof. Sumihiko Murata)
15	<b>Measurement and Evaluation Technology:</b> Design, construction and maintenance of underground structures, Nondestructive testing using magnetics, lasers and ultrasonics, Measurement and instrumentation for structures and underground structures (Prof. Toshihiro Asakura, Assoc. Prof. Kazuhiko Tsukada)
16	<b>Sediment Control Engineering:</b> Controlling sediment in mountain-river-coast systems, prediction and monitoring of sediment dynamic states in mountainous areas, developing methods to decrease damage from sedimentation disasters, evaluating the impact of sediment transport on the ecosystem (Prof. Masaharu Fujita, Assoc. Prof. Hiroshi Takebayashi, Assoc. Prof. Daizo Tsutsumi)

Area No.	Research topic (Faculty) (As of October 2013)
17	<b>Hydroscience and Hydraulic Engineering:</b> Three dimensional structure of flood flow and bed form, hydraulics of inundating flow and design flooding, observations and experiments on sediment transport phenomena, observation and simulation of the flow mechanism in coastal regions, interdisciplinary hydraulics - ecology and hydrodynamics (Prof. Hajime Nakagawa, Assoc. Prof. Kenji Kawaike)
18	<b>Geotechnics for Hazard Mitigation:</b> Damage estimation of geotechnical structures after large earthquakes, dynamic behavior of group pile foundations under strong ground motions, behavior of geotechnical structures made of composite materials (Prof. Susumu Iai, Assoc. Prof. Tetsuo Tobita)
19	<b>Hydrometeorological Disasters Engineering:</b> Global climate change impact assessment on precipitation field, precipitation forecasting, radar hydrology, remote sensing by spaceborne precipitation radar, water budget, energy and material balance in urban areas, conservation of water environment, stormwater and pollutant runoff analysis, formation process of river basin (Prof. Eiichi Nakakita, Assoc. Prof. Yoshinobu Kido)
20	<b>Coastal Disaster Engineering:</b> Impact assessment and adaptation of coastal environmental change due to global warming, Countermeasures of tsunami disaster, Modeling of storm surge, ocean wave and tsunami (Prof. Hajime Mase, Assoc. Prof. Nobuhito Mori)
21	<b>Innovative Disaster Prevention Technology and Policy Research:</b> Climate change impact on catchment at both the global and regional scale, including lakes and reservoirs, flood mitigation modeling, development of strategic approaches to prevent water-related disasters, continental-oceanic mutual interaction (Prof. Kaoru Takara)
22	<b>Waterfront and Marine Geohazards:</b> Coastal-erosion processes and integrated sediment management, estuarine and coastal geo-hydrodynamics, remote sensing of estuarine and coastal environments (Prof. Tetsuya Hiraishi, Assoc. Prof. Yasuyuki Baba)
23	<b>Computational Engineering:</b> Computational mechanics for fluids and solids, high-performance computation for hydraulics and structural engineering, computational methods (FDM, FVM, FEM), parallel computation, numerical visualization (Prof. Satoru Ushijima)
24	<b>Disaster Risk Management Engineering (JR West):</b> Risk management of infrastructures such as railway structures against natural disaster, Crisis management including evacuation management in disaster and infrastructure management for disaster prevention (Prof. Toshihiro Asakura, Prof. Toyoaki Miyagawa)
25	<b>International Management of Civil Infrastructure:</b> Environmental vibrations caused by bridge vibrations, short- & long-term bridge health monitoring (BHM), developing a smart sensing system for BHM, seismic performance of viaduct under traffic (Prof. Chul-Woo Kim)

(2) International Course in Urban and Regional Development in the Department of Urban Management

Area No.	Research topic (Faculty) (As of October 2013)
26	<b>Structures Management Engineering:</b> Durable structures, monitoring of structures, maintenance of structures, life-span management of structures, environmentally friendly materials and structures (Prof. Hirotaka Kawano, Assoc. Prof. Atsushi Hattori)
27	<b>Earthquake and Lifeline Engineering:</b> Earthquake engineering, Disaster prevention engineering, seismic risk management (Prof. Junji Kiyono, Assoc. Prof. Aiko Furukawa)
28	<b>River System Engineering and Management:</b> River basin management engineering, urban geo-water engineering, groundwater hydraulics, economic evaluation of environmental improvement projects (Prof. Takashi Hosoda, Assoc. Prof. Kiyoshi Kishida)
29	<b>Construction Engineering Systems:</b> Geoconstruction engineering, international construction projects, project risk management, environmental preservation of urban groundwater, asset management (Prof. Hiroyasu Ohtsu, Assoc. Prof. Tomoki Shiotani)
30	<b>Geofront-System Engineering:</b> Numerical assessment of time development behavior of clay foundations, Conservation procedures for historical geo-relics, Geo-informatic database, Rock mechanics and engineering, utilization of underground space and environmental protection, geo-risk management, high-tech measurement, environmental evaluation of groundwater (Prof. Mamoru Mimura, Assoc. Prof. Yosuke Higo)
31	<b>Environment and Resource System Engineering:</b> Geological sequestration of carbon dioxide, fluid flow analysis and enhanced oil recovery, geological structural analysis using InSAR and model experiments/numerical simulations, subsurface visualization by exploration geophysics (Prof. Toshifumi Matsuoka, Assoc. Prof. Yasuhiro Yamada)
32	<b>Infrastructure Planning and Management Theory:</b> Public investment policy, transportation and communication behavior, asset and risk management for infrastructures (Prof. Kiyoshi Kobayashi, Assoc. Prof. Kakuya Matsushima)
33	<b>Urban and Regional Planning:</b> Urban planning , urban policy , public transportation policy (Prof. Dai Nakagawa, Assoc. Prof. Ryoji Matsunaka)
34	<b>Logistics Management Systems:</b> City logistics, urban infrastructure planning using ICT and ITS, supply chain management (Prof. Eiichi Taniguchi, Assoc. Prof. Tadashi Yamada)

Area No.	Research topic (Faculty) (As of October 2013)
35	<b>Intelligent Transport Systems:</b> Traffic management by ITS, reliability analysis of transportation network, traffic flow analysis, experimental approach to traffic engineering (Assoc. Prof. Jan-Dirk Schmöcker, Assoc. Prof. Nobuhiro Uno)
36	<b>Travel Behavior Analysis:</b> Public psychology, social dilemmas, behavioral decision making, practical social science research on community development, behavioral analysis of transportation demand (Prof. Satoshi Fujii, Assoc. Prof. Yusuke Kanda)
37	<b>Environmental Geosphere Engineering:</b> Development and utilization of the earth's crust (geosphere) at great depths – including countermeasures to the backend of the nuclear fuel cycle and the evaluation and protection of the underground environment, particularly concerning groundwater behavior (Prof. Katsuaki Koike, Assoc. Prof. Yoshitada Mito)
38	<b>Dynamics of Foundation Structures:</b> Earthquake engineering, engineering seismology, seismic design, soil-structure interaction, seismic performance of structures, innovative structure to resist seismic vibrations (Prof. Sumio Sawada, Assoc. Prof. Yoshikazu Takahashi)
39	<b>Regional Water Environment System:</b> Comprehensive environmental dynamics model, integrated water resources management, assessing the impact of climate change on flood and drought (Prof. Shigenobu Tanaka, Assoc. Prof. Kenji Tanaka)
40	<b>Water Resources Engineering:</b> Water resources systems management, global water dynamics, modeling of human response to water hazards, prevention and mitigation of water-related disasters (Prof. Tomoharu Hori)
41	<b>Disaster Risk Management:</b> Methodology of disaster risk analysis and assessment, sociological and economic evaluation of disasters, proactive and retroactive disaster management countermeasures, social consensus-building process (Assoc. Prof. Muneta Yokomatsu)
42	<b>Environmental Disaster Mitigation Management:</b> Risk management of water resources, integrated management of sediment routing systems, biodiversity conservation, ecosystem management in river basins (Prof. Tetsuya Sumi, Assoc. Prof. Yasuhiro Takemon)
43	<b>Urban Flood Control:</b> Control of urban water-related disaster, dynamics of water-structure coupled systems, structural design for extreme events, dynamic response control, assessment and maintenance of deteriorating urban facilities, urban flood disaster, hydraulics of water-related disasters, water disaster prevention for underground space, tsunami disaster prevention (Prof. Akira Igarashi, Assoc. Prof. Nozomu Yoneyama)



Area No.	Research topic (Faculty) (As of October 2013)
44	<b>Sustainable Geoenvironmental Engineering:</b> Environmental infrastructure engineering, Soil and groundwater contamination, Geotechnics for waste management, Environmental risk assessment, Environmental geotechnics (Prof. Takeshi Katsumi, Assoc. Prof. Toru Inui)
45	<b>International Urban and Regional Development:</b> International projects, official development assistance, capacity development, environment accounting, Remediation of geoenvironmental problems (Assoc. Prof. Giancarlo Augusto Flores Barron)

### III. Application procedures and documents

#### i) Application procedures

**Applicants should refer to the Guidelines for International Applicants to the 2014 Master's Program written in Japanese (平成 26 年度修士課程外国人留学生学生募集要項) and follow the application procedures, upon instructions from their prospective supervisor.**

#### ii) Application Documents

- Application form, photograph, examination voucher
- Graduation certificate (including expecting)
- Academic performance
- Certificate of Items Stated in Resident Register
- Mounting card with receipt of entrance exam fee
- Return envelope for examination voucher to applicant
- Envelope for the result of entrance exam
- Application documents notice card
- Address label
- Letter of recommendation
- Certificate of bachelor degree (Only if applicable)
  
- Checklist of necessary documents
- Statement of Research Activity and Study Plan in English (Five copies)
- Examinee's Score Record for TOEFL, or Official Score Report of TOEIC or IELTS (Valid only after 2012 February 1st)  
(Instead of this document, "Letter of English Proficiency Statement" is acceptable for applicants whose first language is English.)
- Documents detailing the candidate's source of tuition and living expenses while in Japan. International students who will be supported by scholarships from the government of Japan or other countries (e.g. the candidate's home country), need not submit this document.
- Statement of Course Selection

### IV. Eligibility and its screening

#### i) Eligibility

Applicants must have a foreign nationality and hold the residence status of "college student" (this includes students who are expected to acquire this status at the time of admission)

**IMPORTANT NOTE: it is highly recommended to be staying in Japan as a research**

**student as of February 2014.**

- (1) A Person who has graduated from a Japanese university and or is expected to graduate by 31 March 2014
- (2) A person who has received, or is expected to receive a bachelor degree from a Japanese university by 31 March 2014 according to the provisions of Article 104, Paragraph 4 of the School Education Law
- (3) A person who has completed, or is expected to complete a 16-years of overseas education by 31 March 2014\*
- (4) A person living in Japan who has completed, or is expected to complete a 16-years of education in correspondence courses from a foreign-affiliated educational institution by 31 March 2014\*
- (5) A person who has completed, or is expected to complete the education by 31 March 2014 in a foreign-affiliated university (limited to a person who has completed a 16-year course in a foreign educational institution within a school educational system of a foreign country and designated by the Minister of Education, Culture, Sports, Science and Technology)\*
- (6) A person who has completed the required course of study in a higher professional school designated by the Minister of Education, Culture, Sports, Science and Technology after a date specified by the Minister, or by 31 March 2014
- (7) A person designated by the Minister of Education, Culture, Sports, Science and Technology (under Minister of Education, Culture, Sports, Science and Technology Public Notice No.5, 1953) and a person expected to meet its standards for designation by 31 March 2014
- (8) A person having attended a Japanese university (or universities) for at least 3 years by 31 March 2014(including a person designated by the Minister of Education, Culture, Sports, Science and Technology as satisfying Article 102 Paragraph 2 of the School Education Act) and having been recognized by the Graduate School of Engineering as having achieved excellent grades in certain determined classes
- (9) A person who will be at least 22 years of age by 31 March 2014, and has been recognized by individual screening in the Graduate School of Engineering as having academic abilities equivalent or superior to those of university graduates

**\*Note:** A person who has graduated or expects to graduate from a foreign university, including who has received or expect to receive bachelor degree from a foreign university, must contact admissions office prior to submission of the graduation certificate (including expecting) and a photocopy of the completed application form (both front and back). These documents must be submitted to the Graduate Student Section of the Student Affairs Division of the Graduate School of Engineering by 11 December 2013, in order to allow enough time for the credential confirmation.

ii) Eligibility screening

Those who intended to apply under requirement (8) or (9) above are subject to screening prior to acceptance of their applications. The documents below must be submitted to **the Graduate Student Section of the Student Affairs Division** by 5:00 pm, 17 December 2013.

When mailing, use registered mail and mark “For eligibility screening for application to Master Program in Graduate School of Engineering” in red on the envelope. The required documents must be received by 5:00 pm, 17 December 2013.

[Documents necessary for eligibility screening]

- Eligibility statement
- Recommendations

- Academic performance record
- Curriculum

## V. Enrollment Capacity

Limited

## VI. Enrollment Date

April 1st, 2014

## VII. Examination Schedules and Details of Entrance Examination

Applicants shall be selected on the basis of the submitted documents and their results of the academic examination.

### i) Examination Schedules

Examination Site: Room 171 and other rooms, C-Cluster Building No.1, Katsura Campus

Date	Time and Subject
February 18, 2014 (Tue)	9:00~ Interview Examination I, Interview Examination II

\* A projector is provided in the interview room while you bring a portable PC with a presentation file installed. Also please prepare five copies of your presentation material in case of equipment trouble. You cannot use any electric devices in the room other than what you need for presentation.

### ii) Subjects

(1) English (200points/1000 points): evaluated by candidates' TOEFL, TOEIC or IELTS scores. Applicants who have submitted a "Letter of English Proficiency Statement" will be evaluated through interview examinations.

#### ■ Assessment of English Ability

- English ability will be evaluated by the score on the TOEFL Examinee's Score Record, TOEIC Official Score Certificate or IELTS Test Report Form. (These scores are valid only if attained after February 1<sup>st</sup>, 2012.)
- For TOEFL, only the TOEFL-iBT and TOEFL-PBT are acceptable. For TOEIC, only the official TOEIC tests held in Japan or Korea are acceptable. Score certificates of group tests such as TOEFL-ITP or TOEIC-IP are invalid.
- Original score certificates must be submitted; copies are not acceptable. Successful applicants will be disqualified if submitted documents are later found to be fraudulent.

- For further details on the TOEFL, TOEIC or IELTS, please contact the relevant office as detailed below.

**TOEFL: Council on International Educational Exchange (CIEE),  
TOEFL Division**

Tel: 03-5467-5489 <http://www.cieej.or.jp/toefl/>

**TOEIC: The Institute for International Business Communication,  
TOEIC Steering Committee**

Tel: 06-6258-0224 <http://www.toeic.or.jp/>

**IELTS: Society for Testing English Proficiency IELTS Office**

Tel: 03-3266-6852 <http://www.eiken.or.jp/ielts/>

(2) Interview Examination I (400points/1000 points)

The Interview Examination will last approximately 15 minutes and will mainly focus on the applicant's basic and specialized mathematical knowledge of one of the following six fields. The fields correspond to the research that applicants intend to pursue if their application is successful.

Subject	Range of Questions
(1) Structural Mechanics	Force equilibrium, Sectional forces, Influence lines, Stress and strain, Mechanical properties of materials, Sectional properties, Stability of structures and static determinate/indeterminate, Statically determinate structures, Deformation of structures, Elastic buckling of columns, Statically indeterminate structures, Equations of elasticity, Work and energy, Virtual work, Energy principle
(2) Hydraulics	Fundamentals of fluid motion, Hydrostatics, Dynamics of perfect fluids, Water waves, Viscous flows and turbulence, Dimensional analysis and similarity law, Steady pipe flows, and Steady open-channel flows
(3) Soil Mechanics	Physical properties and classification of soils, Permeability and seepage, Consolidation, Shear strength, Compaction, Earth pressure, Bearing capacity, Stress distribution, Slope stability, Ground improvement, Liquefaction, Seismic behavior
(4) Systems Analysis for Planning and Management	Linear Programming, Nonlinear programming, Dynamic Programming, Game theory, Network analysis, Cost-benefit analysis, Regression analysis
(5) Engineering Geology, Rock Engineering, and Theory of Elasticity	Physical and mechanical properties of rocks; Laboratory and in-situ testing of rock; Methods of geological survey; Hydraulic properties of rock mass; Rock mass improvement; Evaluation of slope stability; Stress, strain and displacement; Basic equations of linear elasticity; Stress function; Solution of two-dimensional elastic problem
(6) Exploration Geophysics, Instrumentation Engineering, and Wave Engineering	Theory of exploration geophysics; Theory of seismic surveys (with reflection and refraction methods) and electric/electromagnetic surveys; Data analysis of seismic exploration; Basics of instrumental measurements (force and displacement, movement and vibration, fluid, and temperature); Response function of sensors; Electrical circuits for instruments; Statistical analysis of measured data; Vibration and wave phenomena; Basic theory of elastic and electromagnetic waves; Reflection, refraction and diffraction

(3) Interview Examination II (400points/1000 points)

Applicants should prepare a presentation (approximately 10 minutes in length) on their graduation research or their current main research. The presentation may be given in English. The interview will be conducted after presentation (Total time: approximately 15 minutes,

including the presentation).

iii) Examination Criteria

Applicants who earn 500 points or more out of the total score (1,000 points) will be judged as eligible. Successful candidates will be selected from among the eligible applicants.

**VIII. Announcement Date of Entrance Examination results**

10:00 am, 28<sup>th</sup> February, 2014

**IX. Admission fee and tuition**

Admission fee: ¥282,000 (tentative )

Tuition: ¥267,900 for Spring Semester (annually ¥535,800) (tentative )

**[Both are exempt for Japanese government(MEXT) scholarship students]**

\* The amounts quoted above are tentative and may be revised.

\* If the amounts are amended at the time of admission or while the individual is registered as a student, the new amounts shall apply from the time of the amendment.

**X. Admission Policy - Graduate School of Engineering**

i) Philosophy and objectives

The pursuit of the truth is the essence of learning. Engineering is an academic field that impacts peoples' lives, and bears a great responsibility towards the sustainability of social development and the formation of culture. Based on this premise, the Graduate School of Engineering at Kyoto University is committed to the development of science and technology with an emphasis on the fundamentals, and in harmony with the natural environment. We also aim to assist students in their pursuit of a rich education with specialized knowledge, and the ability to apply it creatively while maintaining high ethical standards.

The graduate school aims to educate technicians and researchers at the master's course level who will acquire a broad range of knowledge and an international perspective. The school aims to instill a highly tuned ability to seek out and solve problems. At the doctoral course level, research skills are nurtured through basic and applied research and practical teachings to enable students to become leaders at the international level, who are able to organize research teams in innovative fields. To this end, the Graduate School of Engineering offers a joint master's and doctoral education program, in addition to the conventional master's program.

ii) Student profile

The Graduate School of Engineering welcomes the following applicants:

Individuals who identify with the principles and objectives of the Graduate School of Engineering and possess the basic expertise and enthusiasm to pursue them.

Individuals who have the basic education required to pursue the truth on their own, and have the understanding and judgment to think beyond established norms.

Individuals who have the strong desire and initiative to pioneer new fields of knowledge.

## **XI. Outline of International Courses and Degree Requirements**

### **i) Outline of international courses**

#### **(1) International Course in Management of Civil Infrastructure**

This master's course in the Department of Civil and Earth Resources Engineering started in April 2011. All classes and research guidance are provided in English.

The Department of Civil and Earth Resources Engineering endeavors to achieve the following:

- 1) Contribute to the sustainable development of the human race from a standpoint of engineering science and technology. This includes issues such as achieving a stable supply of natural resources and harmonizing with the global environment.
- 2) The development of fundamental key technologies that support public infrastructure and energy development.
- 3) The creation and development of new versatile technologies and design methods concerning the construction, improvement, operation, and maintenance of public infrastructure and disaster mitigation measures, as well as technologies related to the exploration, development, and utilization of the natural environment, natural resources and energy.
- 4) The experimental and theoretical integration and deployment of those technologies in the framework of computational mechanics and applied mechanics.

The fundamental policy of the Department of Civil and Earth Resources Engineering is to provide a thorough basic education and cultivate real-world skills. We also aim to provide an education which nurtures the ability to discover new technologies and develop flexible thinking skills. Ultimately, we aim to cultivate experts who can utilize intellectual, information and communication technologies in new ways. Our approach to education prioritizes information analysis, with a focus on computational dynamics. We ensure that our students master the basic and rational technologies that will enable them to become leading engineers who can contribute to the public infrastructure.

In light of the major shift in the locus of public infrastructure development and resource development from Japan to other countries, we are well aware of the need to nurture highly-qualified engineers from other countries to produce engineers who can make broad contributions at the cutting-edge of conventional civil engineering, resource engineering, and environmental engineering. It is our policy to actively invite highly-accomplished researchers and corporate researchers from Japan and other countries to participate in seminar courses that are held by the Department of Civil and Earth Resources Engineering to discuss the latest developments and societal needs.

#### **(2) International Course in Urban and Regional Development**

A new master's course program in the Department of Urban Management started in April 2011. All classes and research guidance are provided in English. As this is an international course, we require that students have English language competence.

The Department of Urban Management is striving to integrate advanced information communication technology with social infrastructure technology in order to realize sustainable, safe, and internationally competitive urban systems that can ensure a high quality of life. To achieve this goal, the department aims to make advances in social analysis technology utilizing urban engineering, traffic engineering, and environmental system engineering to analyze human activities in cities. We also seek to make advances in planning technology methods such as urban planning and traffic planning to realize safe and sustainable urban systems, as well as advances in urban infrastructure relating to constructing foundations and rivers. Building upon the foundation of these engineering technologies, the department is working to establish methodologies and engineering techniques for the comprehensive management of urban systems, incorporating assessments of the sustainability of cities based on a cutting-edge research and an interdisciplinary perspective that embraces the social sciences and humanities. To realize these goals, the department is ambitiously striving to construct state-of-the-art urban systems for advanced information societies, and to cultivate the human resources needed to support them.

In addition to lecture-based subjects, the department also offers seminar-based subjects. In the seminar-based subjects, students independently plan and implement project surveys and company seminars. They then summarize the results and make presentations on their findings. These exercises greatly enhance students' skills of preparing reports, giving presentations and conducting discussions. The exercises also improve the students' ability to work independently and boost their self-confidence.

## ii) Degree requirements

A master degree will be awarded to students who have been enrolled in the Master Course Program for at least 2 years, have received research guidance, have completed at least 30 credits designated by their major field, successfully defended their master thesis, and passed the final examination.

## XII. General Notes

All inquiries regarding the International Courses are to be addressed to the following office.

Administrative Office of the International Courses  
Department of Civil and Earth Resources Engineering and Department of Urban Management  
Graduate School of Engineering, Kyoto University  
**E-mail: [icp\\_master@t.kyoto-u.ac.jp](mailto:icp_master@t.kyoto-u.ac.jp)**

Please also refer to the following web sites:

Department of Civil and Earth Resources Engineering:  
<http://www.ce.t.kyoto-u.ac.jp/mci/en>

Department of Urban Management:  
<http://www.um.t.kyoto-u.ac.jp/urd/en>

K.U. Profile:  
<http://www.opir.kyoto-u.ac.jp/kuprofile/e/>



International Course in Management of Civil Infrastructure  
in the Department of Civil and Earth Resources Engineering,

<http://www.ce.t.kyoto-u.ac.jp/mci/en>

and

International Course in Urban and Regional Development  
in the Department of Urban Management

<http://www.um.t.kyoto-u.ac.jp/urd/en>

**Graduate School of Engineering  
Kyoto University**

E-mail: [icp\\_master@t.kyoto-u.ac.jp](mailto:icp_master@t.kyoto-u.ac.jp)



**K. U. PROFILE**  
Kyoto University Programs for Future International Leaders