Course Groups of the Department of Urban Management

April 4, 2012

[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, Advanced Geoinformatics, Theory & Practice of Environmental Design Research, Advanced Transport Logistics, Governance for Regional and Transportation Planning, 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, Governance for Regional and Transportation Planning, 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 Engineering, 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: Exercise on Project Planning, Practice in Urban Management, Environmental issues for disaster recovery (offered by Graduate School of Global Environmental Studies), Disaster Recovery (offered by Graduate School of Management), Policy Evaluation (offered by Graduate School of Management)

: 10 credits in total

Elective compulsory subjects (3 or more from subjects offered in English are required.)

: 6 or more credits in total

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