Global Leader Program for Transdisciplinary Research

1. IGP (A) Outline

Global Leader Program for Transdisciplinary Research aims to train individuals as broadly-educated, global engineers with the ability to communicate with engineers in other fields with a global perspective and co-create; and to manage complex and large-scale projects and organizations to achieve an inclusive society and sustainable environment for emerging and developing countries. This program consists of four graduate majors: Global Engineering for Development, Environment and Society, Nuclear Engineering, Engineering Sciences and Design and Energy Science and Engineering. Students enrolled in each graduate major learn specialized subjects and the others, in addition to liberal arts including Japanese language and culture. Furthermore, students take internship program primarily in domestic or oversea companies/research institutes/organizations. The students will be enrolled in one of the Graduate Major and educated under the Integrated Doctoral Education Program, in which they are expected to study from Master to Doctoral programs continuously to obtain both degrees. Outlines of each Graduate Major are given below.

Graduate Major(s) available to IGP (A) Students

Graduate Major in Global Engineering for Development, Environment and Society

Graduate Major in Nuclear Engineering

Graduate Major in Engineering Sciences and Design

Graduate Major in Energy Science and Engineering

2. Competencies Developed

In this program, students will acquire the following skills:

-Ability to resolve problems using broad engineering knowledge and skills

-Ability to develop a diverse view of things with well-rounded education and engineering ethics

-Ability to see the social trends, and find and solve current problems

-Ability to perform a project with understating of future trends from a global view by collaborating with others

-Ability to have communication and presentation with logical explanation

3. Learning Goals

The goals of student learning as follows:

A) Fundamental knowledge in the field of global engineering, nuclear engineering, energy engineering and engineering sciences and design

B) Specialized and advanced subjects in the field of global engineering, nuclear engineering, energy engineering and engineering sciences and design

C) Transdisciplinary view of science and engineering in international perspective for a sustainable society and environment

D) Creative and practical research ability

E) Logical communication skills

4. IGP (A) Completion Requirements and Courses

【For Master's degree】

【1.】 IGP (A) Completion Requirements

(1) Transdisciplinary Research Design for Sustainable Society and Environment must be acquired.

(2) The seminar must be acquired in each semester.

(3) The student must complete a special research, submit a thesis for the degree and take the final examination given after the submission of her/his thesis for the qualification. The students qualified by the examination committee can go onto the Doctoral program with some formalities.

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For core courses of your Graduate Major, please refer to the relevant Graduate Major pages in "Guide to Graduate Majors (for IGP)".

【2.】 IGP (A) Courses

Table M1. Courses of IGP (A)

Course category		Course number			Course title	Credits	Competencies	Learning goals	Comments
Major courses	400 level	TBD	◎		Transdisciplinary Research Design for Sustainable Society and Environment	0-1-0	2,3,4,5	A,B,C,D,E	
Breadth courses	400 level	LAW.X414			Technical Management for Sustainable Engineering	2-0-0	1,2,5	A,C,D	C0M
		LAW.X418, LAW.X419			Communication Skills in Japanese Industries I, II	0-1-0	2,3,5	A,C,D,E	C0M C1M

Note：

• ◎：Required course

• Competencies:　1 = Specialist skills,　2 = Intercultural skills,　3 = Communication skills,; 4 = Critical thinking skills;

　5 = Practical and/or problem-solving skills

• The character preceding the three digits in the course number denotes the course's subdiscipline (i.e., "D" represents the subdiscipline code in the course number LAW.D400.R): X (Global awareness and other breadth courses)

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For core courses of your Graduate Major, please refer to the relevant Graduate Major pages in "Guide to Graduate Majors (for IGP)".

【For Doctoral degree】

【1.】 IGP (A) Completion Requirements

(1) 4 credits (0-0-4) of Transdisciplinary Science and Engineering Off-Campus Project of the Graduate Major must be acquired.

(2) The seminar must be acquired in each semester.

(3) The candidate must complete and upload a thesis for the degree, and take and pass the final examination and evaluation of his/her thesis.

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For completion requirements of your Graduate Major, please refer to the relevant Graduate Major pages in "Guide to Graduate Majors (for IGP)".

【2.】 IGP (A) Courses

Table D1. Courses of IGP (A)

Course category		Course number	Course title		Credits	Competencies	Learning goals	Comments
Major courses	600 level	TBD	○	Transdisciplinary Science and Engineering Off-Campus Project S	0-0-4	1,2,3,4,5	C,D,E	
		TBD	○	Transdisciplinary Science and Engineering Off-Campus Project F	0-0-4	1,2,3,4,5	C,D,E	

Note：

• ○：Restricted elective

• Competencies:　1 = Specialist skills,　2 = Intercultural skills,　3 = Communication skills,; 4 = Critical thinking skills;

　5 = Practical and/or problem-solving skills

• The character preceding the three digits in the course number denotes the course's subdiscipline (i.e., "D" represents the subdiscipline code in the course number GEG.D600.R): P (Project)

• The character preceding the three digits in the course number denotes the course's subdiscipline (i.e., "D" represents the subdiscipline code in the course number CVE.D600.R): P (Project-based learning)

• The character preceding the three digits in the course number denotes the course's subdiscipline (i.e., "D" represents the subdiscipline code in the course number UDE.D600.R): A (Common)

Under this program, in addition to the above-mentioned requirements, students must also fulfill the Graduate Major completion requirements of their departments (degree completion requirements). For core courses of your Graduate Major, please refer to the relevant Graduate Major pages in "Guide to Graduate Majors (for IGP)".