Postgraduate Program for Environmental Designers Contributing to Resilient Cities

1. IGP (A) Outline

The Postgraduate Program for Environmental Designers Contributing to Resilient Cities offers courses and research opportunities leading to Master's and doctoral degrees either in Civil and Environmental Engineering or Architecture and Building Engineering. This program aims to nurture young, exceptional talents who can contribute to creating a disaster-resilient built environment, considering the well-being of people, society, and the earth, as highly skilled engineers, architects, governmental officers, or researchers. We call such professionals Environmental Designers.

This Program is either for a Master's degree only or both Master's and doctoral degrees. The latter is a combined Master's and Doctoral Program, considered a single, continuous course of study. For instance, even if an applicant has already earned a Master's degree from another institution, the study must begin at the Master's level at our institute. This combined Master's and Doctoral program can be completed within three to five years.

1-1. Graduate Major(s) available to IGP (A) Students

Graduate Major in Architecture and Building Engineering

Graduate Major in Civil Engineering

Graduate Major in Urban Design and Built Environment

2. Competencies Developed

In this program, students are trained to develop cutting-edge design, planning, and engineering skills in a diverse and international environment, equipping them with the tools to become tomorrow's global leaders as Environmental Designers. To achieve this goal, the Program seeks to confer the following skills to students:

- Theoretical understanding of the fundamentals of design, planning or engineering necessary for professional practice and research.

- Skills and knowledge required for cutting-edge research, and the ability to apply the theory to practice.

- Creativity required for producing, communicating, and applying new ideas and knowledge.

- Understanding and appreciation of cultural diversity, which are necessary for professional practice.

- Communication and leadership skills needed as an Environmental Designer.

3. Learning Goals

Students engage in the following program of study:

(A) Fundamental courses which cover the breadth of science and engineering

Broad and fundamental courses are offered to convey the foundation for building professional skills in environmental design.

(B) In-depth courses focused on specific fields

Students may take in-depth courses in specific fields within architecture and building engineering or civil and environmental engineering to acquire a deep understanding of the profession.

(C) Practical internships and seminars

Students enrol in internships and seminars to acquire an in-depth understanding of how theory is applied to practice.

(D) Problem-solving, communication and leadership training

By engaging in original research focused on a specific issue and completing the thesis work, students learn to work independently and proactively, communicate their results convincingly, and how be a leader in their field and solve problems ethically.

4. IGP (A) Completion Requirements and Courses

【For Master's degree】

【1.】 IGP (A) Completion Requirements

(1) The required course listed in Table M1 (Environment Design in Japan) must be acquired.

(2) Two of the restricted elective courses listed in Table M1 must be acquired.

(3) Attendance at all meetings/workshops for this program is required.

Under this program, in addition to the above-mentioned requirements, students must also fulfil 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	CVE.N421 ARC.D448 UDE.P441	◎	Environment Design in Japan	1-0-0	1,2,5	A, B, D	
		ARC.D441	○	Passive Solar Design	2-0-0	1,2,3	A, B	
		ARC.P441 UDE.D461	○	Theories in Urban Analysis and Planning I	2-0-0	1,2,3,4,5	A, B	
		CVE.A434	○	Reliability, Risk and Resilience Assessment of Infrastructures	2-0-0	1,3,4,5	A, B	
		CVE.P432	○	International Collaboration	0-1-0	2,3,4,5	D	
		CVE.P433	○	International Internship	0-1-0	1,2,3,4,5	D	
		UDE.P404 CVE.D443	○	City/Transport Planning and the Environment	1-0-0	1,5	A, B	

Note :
• ◎ : Required course, ○ : Restricted elective
· Competencies: 1 = Specialist skills, 2 = Liberal arts skills, 3 = Communication skills, 4 = Applied skills (inquisitive thinking and/or problem-finding skills), 5 = Applied skills (practical and/or problem-solving skills)

【For Doctoral degree】

【1.】 IGP (A) Completion Requirements

(1) Off-Campus Project (one of the restricted elective courses listed in Table D1) must be acquired.

(2) Attendance at all meetings/workshops for this program is required.

Under this program, in addition to the above-mentioned requirements, students must also fulfil 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	ARC.A622	○		Architectural Design Practice S3B	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Architecture and Building Engineering only
		ARC.A624	○		Architectural Design Practice F3B	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Architecture and Building Engineering only
		ARC.A625	○		Cooperative Education through Research Internships of Architecture and Building Engineering	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Architecture and Building Engineering only
		CVE.P621	○		Off Campus Project in Civil Engineering I	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Civil Engineering only
		CVE.P622	○		Off Campus Project in Civil Engineering II	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Civil Engineering only
		CVE.Q631	○		Cooperative Education through Research Internships of Civil Engineering	0-0-4	1,3,4,5	C,D	For the student whose Graduate Major is Civil Engineering only
		UDE.A601	○		Off Campus Project in Urban Design and Built Environment	0-0-4	1,3,5	C,D	For the student whose Graduate Major is Urban Design and Built Environment only
		UDE.A605	○		Cooperative Education through Research Internships of Urban Design and Built Environment	0-0-4	1,3,5	C,D	For the student whose Graduate Major is Urban Design and Built Environment only
		CVE.N635			Disaster Investigation and Restoration Practice A	0-0-1	1,3,4,5	C,D	
		CVE.N636			Disaster Investigation and	0-0-1	1,3,4,5	C,D	

			Restoration Practice B				
	CVE.N637		Disaster Investigation and Restoration Practice C	0-0-1	1,3,4,5	C,D	
	CVE.N638		Disaster Investigation and Restoration Practice D	0-0-1	1,3,4,5	C,D	

Note :
• ○ : Restricted elective
· Competencies: 1 = Specialist skills, 2 = Liberal arts skills, 3 = Communication skills, 4 = Applied skills (inquisitive thinking and/or problem-finding skills), 5 = Applied skills (practical and/or problem-solving skills)