

Graduate Major in Architecture and Building Engineering

【Master's degree program】

1. Outline

Our Department of Architecture and Building Engineering at Tokyo Tech originated in 1907 as part of the curriculum at Tokyo Tech's parent institution Tokyo Technical High School (i.e., Technische Hochschule) founded in 1881. The department is therefore one of the oldest university-level architectural schools in Japan. With its one-hundred-year history it enjoys a high reputation both within and outside Japan, a number of its graduates having become renowned architects, structural engineers or academics. This **International Graduate Program** is solely for master's and doctoral students and is administered chiefly by the **Architectural Design Course** of the department. (NB: all Japanese architectural degrees are conferred in the form of an engineering qualification.)

2. Competencies Developed

The major concentration in this course is within architectural design (studio courses) and history and theory, with fieldwork broaching new architectural themes in an urban context.

3. Learning Goals

Requisite instruction to better understand Japanese megacities and the built environment throughout Japan will be offered in seminars that also include architectural tours. Instructors will assist and encourage students seeking to master these themes, and each student will be required to obtain 34 credits over two years of study and complete either a design diploma— or a written thesis in English— at the end of the second year.

4. IGP Completion Requirements

【Master's degree】

- 34 credits or more from the Graduate school courses (400- and 500-level courses).
- Meet the completion requirements indicated in Table M1. below.
- It passes master's-thesis examination and the final examination.

Table M1. Graduate Major in Architecture and Building Engineering Completion Requirements

Course category		<Required courses> Required credits	<Electives> Minimum credits required	Minimum credits required	Associated learning goals	Comments
Liberal arts and basic science courses	Humanities and social science courses		•2 credits from 400-level •1 credit from 500-level	5 credits	C	
	Career development courses		2 credits		C, E	
	Other courses					
Core courses	Research seminars	Research Seminar in Architecture and Building Engineering S1 Research Seminar in Architecture and Building Engineering F1 Research Seminar in Architecture and Building Engineering S2 Research Seminar in Architecture and Building Engineering F2 A total of 8 credits, 2 credits each from the above courses.		20 credits	C	
	Research-related courses				D	
	Major courses		12 credits		A, B, C, E	
	Major courses and Research-related courses <u>outside</u> the Graduate Major in Architecture and Building Engineering standard curriculum			2 credits	C	
Total required credits		A minimum of 34 credits in addition to meeting the above conditions				

Note	• Japanese Language and Culture Courses offered to International Students can be recognized as Humanities and Social Science Courses of the corresponding course level. • As for Liberal Arts and Basic Science Courses, please refer to the relevant pages.
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The minimum period of study is two years in total. Note that the above requirements are minimal and some additional requirements may be conditioned depending on the special course. All students are strongly advised to consult with their own supervisors about the study plan.

5. IGP Courses

Table M2. Core Courses of the Graduate Major in Architecture and Building Engineering

Course category		Course Number	Course		Credits	Competencies	Learning goals	Comments	
Research seminars	400 level	ARC.Z491.R	◎		Seminar in Architecture and Building Engineering S1	0-2-0	2,3,5	C	
		ARC.Z492.R	◎		Seminar in Architecture and Building Engineering F1	0-2-0	2,3,5	C	
	500 level	ARC.Z591.R	◎		Seminar in Architecture and Building Engineering S2	0-2-0	2,3,5	C	
		ARC.Z592.R	◎		Seminar in Architecture and Building Engineering F2	0-2-0	2,3,5	C	
Major courses	400 level	ARC.S441.L	O		Dynamics of Structures	2-0-0	3,4,5	A,B	【Urban Design and Built Environment (UDE.S401)】
		ARC.S442.L			Nonlinear Behavior of Concrete and Concrete Members	2-0-0	1,3,5	A,B	【Urban Design and Built Environment (UDE.S402)】
		ARC.S443.L			Earthquake Resistant Limit State Design for Building Structures	2-0-0	3	A,B	【Urban Design and Built Environment (UDE.S403)】
		ARC.S444.L			Damper-installed Structures and Base-isolated Structures against Earthquakes	2-0-0	3,4,5	A,B	【Urban Design and Built Environment (UDE.S404)】
		ARC.S445.L			Post-earthquake Damage Evaluation and Rehabilitation of Steel Structures	2-0-0	3,5	A,B	【Urban Design and Built Environment (UDE.S405)】
		ARC.D401.L			History of Architecture	2-0-0	1,2,4,5	A,B	

		ARC.D402.L			Architectural Preservation and Renovation	2-0-0	1,3,4,5	A,B	
		ARC.D403.L			Architectural Workshop 1	1-1-0	1,3	A,B	
		ARC.D404.L			Architectural Tour	0-0-1	1,3	A,B	
		ARC.D421.L			Architectural Design Studio I	0-2-0	1,2,3,5	A,B	
		ARC.D422.L			Architectural Design Studio II	0-2-0	1,2,3,5	A,B	
		ARC.D423.L			Architectural Design Studio III	0-2-0	1,2,3,4,5	A,B	
		ARC.D424.L			Theory of Architectural Space and Planning	1-1-0	2,3	A,B	
		ARC.D441.L			Passive Solar Design	2-0-0	1,2,3	A,B	
		ARC.D443.L			Structural Planning in Architecture	1-0-0	2,3,5	A,B	
		ARC.D446.L			Theory of Architectural Design II	2-0-0	1,2,3,4,5	A,B	
		ARC.D447.L			Architectural Theory for Urban Space	2-0-0	2,3	A,B	
		ARC.E424.L	O		Design Theory of Architectural Visual Environment	1-0-0	3,4	A,B	
		ARC.E425.L	O		Evaluation and Design of Thermal Environment	1-0-0	3,4,5	A,B	
		ARC.P442.L	O		Theories in Urban Analysis and Planning II	2-0-0	1,3,5	A,B	
		ARC.S403.L	O		Advanced Course on Design of Prestressed Concrete Structure	2-0-0	3,5	A,B	
		ARC.S421.L	E		Applied Building Structural Design	2-0-0	1,2,3,4,5	A,B	
	500 level	ARC.S541.L			Disaster Mitigation for Building Structures	2-0-0	1,3,5	A,B	【Urban Design and Built Environment (UDE.S501)】
		ARC.S542.L			Mathematical Design of Structures	2-0-0	4	A,B	【Urban Design and Built Environment (UDE.S502)】
		ARC.D521.L			Architectural Workshop 2	0-0-2	1,2,3,5	E	
		ARC.P501.L	O		Theories in Architectural Planning II	2-0-0	1,2,3,4,5	A,B	

Note :

- © : Required course, ○ : Restricted elective, O : odd academic years, E : even academic years
- Competencies: 1 = Intercultural skills; 2 = Communication skills; 3 = Specialist skills; 4 = Critical thinking skills; 5 = Practical and/or problem-solving skills• 【 】 Course offered under another graduate major
- 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 ABC.D400.R): A (General), D (History and Design), P (Planning), S (Structure and Material), E (Environment and Equipment).

6. IGP Courses That Can be Recognized as Humanities and Social Science Courses

TBA

7. IGP Courses That Can be Recognized as Career Development Courses

TBA

8. Research Related to the Completion of Master Theses

Each student will be required to complete either a design diploma— or a written thesis in English— at the end of the second year.

【Doctoral degree program】

1. Outline

Our Department of Architecture and Building Engineering at Tokyo Tech originated in 1907 as part of the curriculum at Tokyo Tech's parent institution Tokyo Technical High School (i.e., Technische Hochschule) founded in 1881. The department is therefore one of the oldest university-level architectural schools in Japan. With its one-hundred-year history it enjoys a high reputation both within and outside Japan, a number of its graduates having become renowned architects, structural engineers or academics. This **International Graduate Program** is solely for master's and doctoral students and is administered chiefly by the **Architectural Design Course** of the department. (NB: all Japanese architectural degrees are conferred in the form of an engineering qualification.)

2. Competencies Developed

The major concentration in this course is within architectural design (studio courses) and history and theory, with fieldwork broaching new architectural themes in an urban context.

3. Learning Goals

Requisite instruction to better understand Japanese megacities and the built environment throughout Japan will be offered in seminars. Instructors will assist and encourage students seeking to master these themes, and each student will be required to obtain 24 credits over three years of study and complete a written thesis in English at the end of the third year.

4. IGP Completion Requirements

【Doctoral degree】

- A total of 24 credits or more acquired from 600-level courses.
- Meet the completion requirements indicated in Table D1. below.
- It passes doctoral-thesis examination and the final examination.

Table D1. Graduate Major in Architecture and Building Engineering Completion Requirements

Course category		<Required courses> Required credits	<Electives> Minimum credits required	Minimum credits required	Associated learning goals	Comments
Liberal arts and basic science courses	Humanities and social science courses		2 credits	6 credits	C	
	Career development courses		4 credits		C	
	Other courses					
Core courses	Research seminars	Research Seminar in Architecture and Building Engineering S3 Research Seminar in Architecture and Building Engineering F3 Research Seminar in Architecture and Building Engineering S4 Research Seminar in Architecture and Building Engineering F4 Research Seminar in Architecture and Building Engineering S5 Research Seminar in Architecture and Building Engineering F5 A total of 12 credits, 2 credits each from the above courses.		12 credits	B	
	Research-related courses				C	
	Major courses				A	
	Major courses and Research-related courses <u>outside</u> the Graduate Major in Architecture and Building Engineering standard curriculum					

Total required credits	A minimum of 24 credits in addition to meeting the above conditions
Note	• Japanese Language and Culture Courses offered to International Students can be recognized as Humanities and Social Science Courses of the corresponding course level. • As for Liberal Arts and Basic Science Courses, please refer to the relevant pages.

The minimum period of study is three years in total. Note that the above requirements are minimal and some additional requirements may be conditioned depending on the special course. All students are strongly advised to consult with their own supervisors about the study plan.

5. IGP Courses

Table D2. Core Courses of the Graduate Major in Architecture and Building Engineering

Course category		Course Number	Course			Credits	Competencies	Learning goals	Comments
Research seminars	600 level	ARC.Z691.R	◎		Seminar in Architecture and Building Engineering S3	0-2-0	1,2,3,4,5	B	
		ARC.Z692.R	◎		Seminar in Architecture and Building Engineering F3	0-2-0	1,2,3,4,5	B	
		ARC.Z693.R	◎		Seminar in Architecture and Building Engineering S4	0-2-0	1,2,3,4,5	B	
		ARC.Z694.R	◎		Seminar in Architecture and Building Engineering F4	0-2-0	1,2,3,4,5	B	
		ARC.Z695.R	◎		Seminar in Architecture and Building Engineering S5	0-2-0	1,2,3,4,5	B	
		ARC.Z696.R	◎		Seminar in Architecture and Building Engineering F5	0-2-0	1,2,3,4,5	B	
Note : • ◎ : Required course, ○ : Restricted elective, O : odd academic years, E : even academic years • Competencies: 1 = Intercultural skills; 2 = Communication skills; 3 = Specialist 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 ABC.D400.R): Z (Research seminars).									

6. IGP Courses That Can be Recognized as Humanities and Social Science Courses

TBA

7. IGP Courses That Can be Recognized as Career Development Courses

TBA

8. Research Related to the Completion of Doctoral Theses

Each student will be required to complete a written thesis in English at the end of the third year.