

**GLOBAL ROTATION PROGRAM
FOR ARCHITECTURE AND
CIVIL ENGINEERING EDUCATION
BRIDGING
ASEAN AND AFRICAN COUNTRIES
(GRACE PROGRAM)**

JAPANESE GOVERNMENT (MEXT)
SCHOLARSHIP PROGRAM:
UNIVERSITY RECOMMENDATION 2022

**MASTER'S / DOCTORAL
DEGREE PROGRAM
FOR
STUDENTS FROM ASEAN AND AFRICA**

* Program Summary

- **This program is designed to foster students' ability to solve developmental problems in the field of Architecture and Civil Engineering in students' native countries.**
- **Students are expected to acquire professional skills and knowledge as global experts through courses exclusively designed for this program.**
- **Internship opportunities will prepare students for their careers and professional practice in Architecture and Civil Engineering.**

* Program Aims

< Three Types of Knowledge Circulation >

- ① **Circulation of knowledge in Japan-ASEAN-Africa**
by multi-directional exchange of students and professionals
- ② **Circulation of Architecture and Civil Engineering knowledge beyond borders**
by developing professional experts with leadership skills and a comprehensive perspective
- ③ **Circulation of knowledge in industry-government-academia partnerships**
by establishing new partnerships and collaborations with graduates of this program

< New Platform for Knowledge Circulation >

- **Human Library:** knowledge management platform that locally and globally circulates professional expertise
- registration of graduates as professionals who can contribute to the circulation of knowledge

Global Rotation Program for Architecture and Civil Engineering Education Bridging ASEAN and Africa

University faculty, and administrators in ministries/core local governments in ASEAN and Africa

Obtaining Master's/Doctoral Degree in Engineering

Curriculum

Problem-Based Learning
(Fundamentals/Advanced)

Architecture and Civil
Engineering Technology (A/B)

Japanese Industrial/Public
Internships

On-Campus
Teaching Practice

Circulation of Knowledge

in Japan-ASEAN-Africa

"Multi-directional circulation of global
human resource" through the exchange of
knowledge/experience and mutual learning

of Architecture and Civil Engineering

"Development of human resource with
professional expertise and a broad
perspective" for ASEAN and Africa

in Industry-Government-Academia

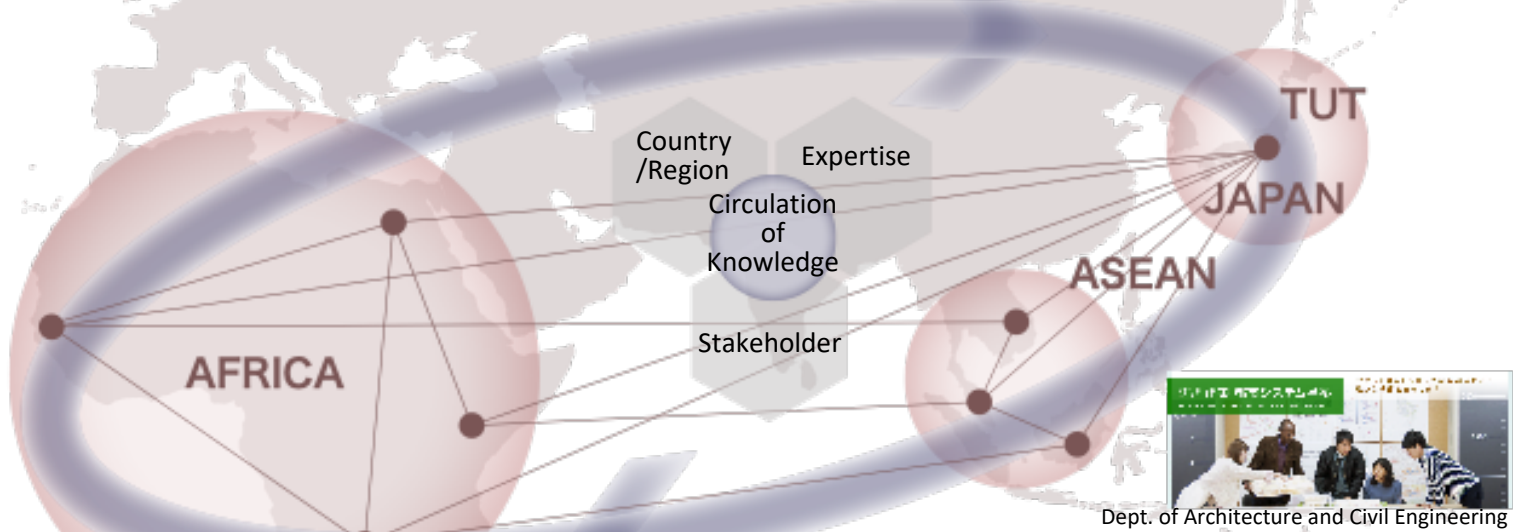
"Human-resource development to advance"
native country-Japan collaborations
and the science & society initiative

Platform

Platform for the Circulation of Knowledge

"Sustainable knowledge management systems for the local-global circulation of knowledge," by generating a human library of graduates to facilitate joint research, knowledge exchange, and increased mobility of professional personnel

Development of professionals with global leadership skills, who will play a pivotal role in the circulation of knowledge and the advancement of sustainable architectural and urban systems in their home countries



Interdisciplinary studies and learning opportunities



Water and Sewage System



Structural Engineering



Aquatic Environment



Urban Planning



Affordable Housing



Transportation
Infrastructure



Coastal and Geotechnical
Engineering



Disaster Prevention
and Recovery



Environmental
Engineering

★ Courses exclusively designed for the program

<Master`s Degree>

- Problem-Based Learning-Fundamentals
- Architecture and Civil Engineering Technology A/B

<Doctoral Degree>

- Problem-Based Learning-Advanced
- Architecture and Civil Engineering Technology A/B
- On-Campus Teaching Practice
- Japanese Industrial/Public Internship

★ Career Planning

• Registration to the Human Library platform for joint research, international exchange, and workshop instructor opportunities

Multi Plaza



<Master's Degree>

General subjects

2021.8

Compulsory/ Elective	Subject Name	Credits	Classes/Week			Instructor	note
			1st year		2nd year		
			Fall	Spring			
			2022.10 - 2023.3	2023.4 - 2023.9	2023.10 - 2024.9		
Compulsory	Ethics for Researchers	1	1		(0.5)		
Elective	Culture and Communication I	2			1	R. Asai	
	Culture and Communication II	2	1			Leung	
	Principles of Japanese Conversation	2		1	(1)	Y. Muramatsu	
	Principles of Japanese Grammar	2	1		1	Y. Yoshimura	
	Japanese Life Today	2		1	(1)		
	Japanese Industrial Technologies and Innovations	2	1		(1)		

Architecture and Civil Engineering

Compulsory/ Elective	Subject Name	Credits	Classes/Week			Instructor	note
			1st year		2nd year		
			Fall	Spring			
			2022.10 - 2023.3	2023.4 - 2023.9	2023.10 - 2024.9		
Compulsory	Seminar on Architecture and Civil Engineering I	3	3			Supervisor	
	Seminar on Architecture and Civil Engineering II	3			3	Supervisor	
	Thesis Research on Architecture and Civil Engineering	6	1			Supervisor	
	Problem-Based Learning-Fundamentals	2		1			
	Architecture and Civil Engineering Technology A	2	1				A and B alternate every two years.
	Architecture and Civil Engineering Technology B	2					

* courses specific to the Grace Program

Elective	Elasticity and Stability	2			1	Y. Matsumoto	
	Finite Element Method for Continua and Bar Structures	2	1			S. Nakazawa	
	Seismic Evaluation of Existing Buildings	2			1	T. Matsui	
	Seismic Design of Structures	2	1		(1)	T. Saito	
	Geotechnical Analysis	2	1			K. Miura	
	Geohazards	2			1	T. Matsuda	
	Building Science: Indoor Air Quality and Ventilation	2			1	Y. Shimazaki	
	Coastal Hydraulics	2			1	S. Kato	
	Water Environment Engineering	2		1	(1)	T. Inoue K. Yokota	
	Environmental Control in Biology	2	1			K. Takayama T. Tokairin	
	Advanced Study on Housing System and Housing Policy	2		1		S. Matsushima	
	Advanced Urban Planning	2			1	J. Asano H. Ono	
	Advanced Architectural Design	2			1	A. Mizutani	
	Advanced Transportation and Urban Planning	2			1	N. Sugiki	
	Advanced Computational and Environmental Economics	2			1	H. Shibusawa	
	Advanced Transportation Engineering	2	1			K. Matsuo	
	※ Advanced Structural System Planning and Design I	2	1		(1)	Supervisor	
	※ Advanced Structural System Planning and Design II	2		1	(1)	Supervisor	
	※ Advanced Environmental System Planning and Design I	2	1		(1)	Supervisor	
	※ Advanced Environmental System Planning and Design II	2		1	(1)	Supervisor	
※ Advanced Regional System Planning and Design I	2	1		(1)	Supervisor		
※ Advanced Regional System Planning and Design II	2		1	(1)	Supervisor		

<Doctoral Degree>

Architecture and Civil Engineering (TENTATIVE)

2021.8

Compulsory / Elective	Subject Name	Credits	Instructor	1st year		2nd year	3rd year	Note
				Fall	Spring			
				2022.10 - 2023.3	2023.4 - 2023.9	2023.10 - 2024.9	2024.10 - 2025.9	
Compulsory	Seminar on Architecture and Civil Engineering 1	4	Supervisor	4				
	Seminar on Architecture and Civil Engineering 2	1	Supervisor			1		
	Japanese Industria/Public Internship	1				Intensive Lecture		
	On-Campus Teaching Practice	1			Intensive Lecture			
	Problem-Based Learning-Advanced	2			1			
	Architecture and Civil Engineering Technology A	2		1				A and B alternate every two years.
	Architecture and Civil Engineering Technology B	2		1			1	
Elective Required	Ethics for Researchers	1		1				*1

* courses specific to the Grace Program

<Doctoral Degree>

	Seminar on Interdisciplinary Research	1				1		
	Advanced Mechanics and Design of Spatial Structure Systems	2	S. Nakazawa Y. Matsumoto	1				
	Advanced Structural Design	2	T. Saito T. Matsui	1				
	Advanced Building Environmental Engineering and Building Services	2	Y. Shimazaki		1			
	Advanced Theory in Architectural Design	2	S. Matsushima A. Mizutani	1				
Elective	Sustainable Urban Planning	2	J. Asano H. Ono	1				
	Advanced Geologic Hazard Mitigation Planning	2	K. Miura T. Matsuda	1				
	Advanced Water Environmental Engineering	2	T. Inoue S. Kato K. Yokota	1				
	Advanced Environmental Control in Biology	2	K. Takayama T. Tokairin		1			
	Advanced Transportation Systems and Economics	2	H. Shibusawa N. Sugiki K. Matsuo		1			
	Advanced Western Culture	2	K. Aikyo		1			
	Japanese Language	-	Japanese Language Instructor(s)	0.5				

< for the GRACE program and MEXT scholarship >

- * Non-Japanese nationality
- * A bachelor's degree or Master's degree from an accredited institution
- * A satisfactory scholastic average, a minimum grade-point average (GPA) of 2.3 on a 3.0 scale
- * Sufficient undergraduate/Master's training to do graduate work in the specified field
- * Language Proficiency in English (CEFR B2) if English is/was not the official language of instruction
- * Admission to the graduate school at Toyohashi University of Technology

