

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

**JAPANESE GOVERNMENT (MEXT)  
SCHOLARSHIP PROGRAM:  
UNIVERSITY RECOMMENDATION 2023**

**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

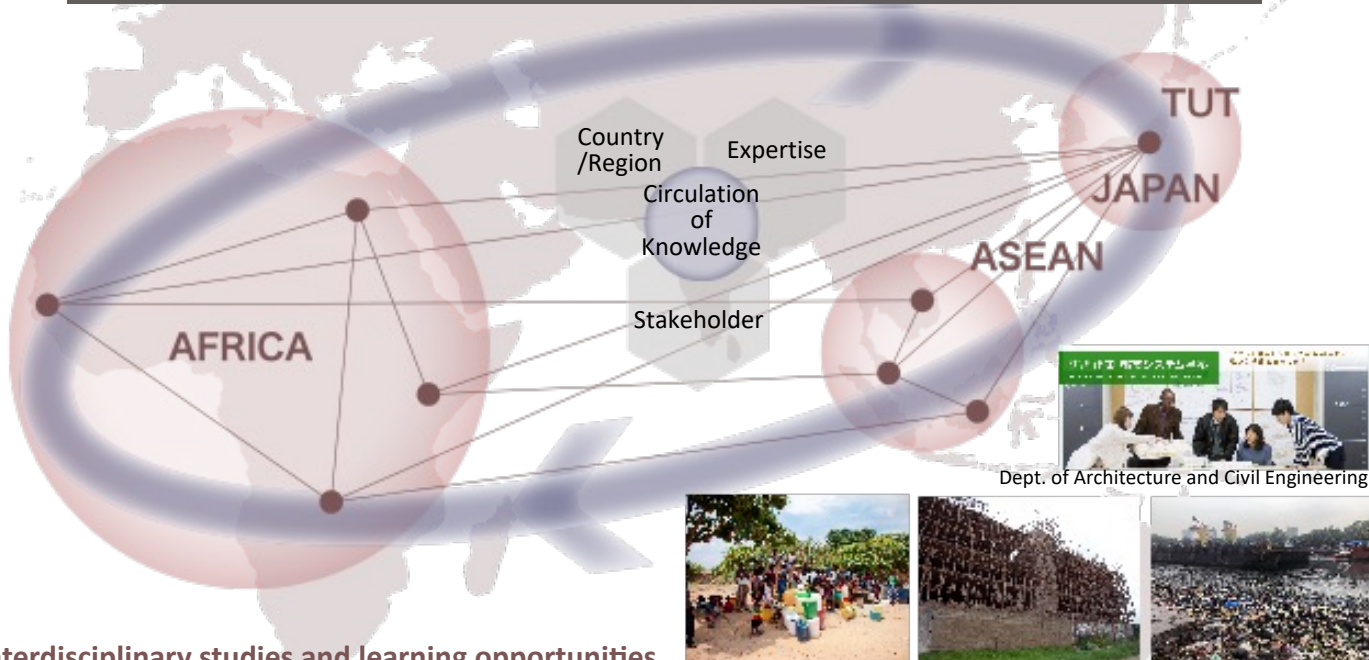
"Human-resource development to advance" native country-Japan collaborations and the science & society initiative

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





## \* 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

2022.10

Compulsory / Elective	Subject Name	Class format	Excluded from GPA	Credits	Classes/Week				Instructor	note	
					1st grade						2nd grade
					Fall 1	Fall 2	Spring 1	Spring 2			
					2022.10 - 2023.3	2023.4 - 2023.9	2023.10 - 2024.9				
Compulsory	Ethics for Researchers	Lecture		1	1			(0.5)			
Elective	Culture and Communication I	Lecture		2							
	Culture and Communication II	Lecture		2	1				S. Iwauchi		
	Principles of Japanese Conversation	Lecture		2			1	(1)	Y. Muramatsu		
	Principles of Japanese Grammar	Lecture		2	1			(1)	J. Ishige		
	Japanese Life Today	Lecture		2			1	(1)			
	Japanese Industrial Technologies and Innovations	Lecture		2	1			(1)			

Compulsory / Elective	Subject Name	Class format	Excluded from GPA	Credits	Classes/Week				Instructor	note	
					1st grade						2nd grade
					Fall 1	Fall 2	Spring 1	Spring 2			
					2022.10 - 2023.3	2023.4 - 2023.9	2023.10 - 2024.9				
Compulsory	Seminar on Architecture and Civil Engineering I	Exercise	○	3	3				Supervisor		
	Seminar on Architecture and Civil Engineering II	Exercise	○	3				3	Supervisor		
	Problem-Based Learning Program A	Exercise		1	1				Supervisor		
	Theory and Practice of Architectural and Civil Engineer A	Lecture		1			1		H. Ono		
	Thesis Research on Architecture and Civil Engineering	Experiment	○	6				9	Supervisor		

\* courses specific to the Grace Program

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

◆ Up to two subjects marked with ※ can be acquired from courses taught by your supervisor. Consult your supervisor about details.

◆ Those subjects whose numbers marked with "( )" will be held every year.

## <Doctoral Degree>

### Architecture and Civil Engineering

2022.10

Compulsory / Elective	Subject Name	Class format	Excluded from GPA	Credits	Instructor	1st grade		2nd grade	3rd grade	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	Exercise	○	4	Supervisor	4				
	Seminar on Architecture and Civil Engineering 2	Exercise	○	1	Supervisor			1		
	Problem-Based Learning Program B	Exercise		1	Supervisor	1				
	Theory and Practice of Architectural and Civil Engineer B	Lecture		1	H. Ono		1			
	Teaching Practice on Global Education	Exercise	○	1	Supervisor	Intensive lecture				
	Japanese Industrial Internship Program	Practical training	○	1	Supervisor			Intensive lecture		
Elective Required	Ethics for Researchers	Lecture		1		1				※1

※1 Students who have obtained the credit of this subject during Master's program must take another subject among subject in the doctoral program

**\* courses specific to the Grace Program**

Elective	Seminar on Interdisciplinary Research	Exercise		1				1		
	Advanced Mechanics and Design of Spatial Structure Systems	Lecture		2	S. Nakazawa Y. Matsumoto	1				
	Advanced Structural Design	Lecture		2	T. Saito T. Matsui	1				
	Advanced Building Environmental Engineering and Building Services	Lecture		2	M. Tajima Y. Shimazaki		1			
	Advanced Theory in Architectural Design	Lecture		2	S. Matsushima A. Mizutani	1				
	Sustainable Urban Planning	Lecture		2	J. Asano H. Ono	1				
	Advanced Geologic Hazard Mitigation Planning	Lecture		2	K. Miura T. Matsuda	1				
	Advanced Water Environmental Engineering	Lecture		2	T. Inoue S. Kato K. Yokota	1				
	Advanced Environmental Control in Biology	Lecture		2	T. Tokairin		1			
	Advanced Transportation Systems and Economics	Lecture		2	H. Shibusawa N. Sugiki K. Matsuo		1			



## < 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

