Course Requirement Guide Book

(October 2024)

International Master's Degree Program



Diploma Policy

Diploma Policy for Master's Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Master (of Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering, as well as liberal arts education; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical and creative skills to understand and solve problems leveraging such knowledge in an integrated manner.

Mechanical Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Mechanical Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about mechanical engineering and related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about mechanical engineering and related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about mechanical engineering and related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high skills to mutually respect the values of individual team members; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Electrical and Electronic Information Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Electrical and Electronic Information Engineering; have the knowledge and abilities stated below; have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted the degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about electrical and electronic information engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about electrical and electronic information engineering as well as related fields; to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about electrical and electronic information engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team members; to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Computer Science and Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Computer Science and Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about computer science and engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about computer science and engineering as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about computer science and engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team members; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Applied Chemistry and Life Science

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Applied Chemistry and Life Science; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about applied chemistry and life science as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about applied chemistry and life science as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about applied chemistry and life science as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team member; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Architecture and Civil Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Architecture and Civil Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- (C) Practical and creative skills to utilize advanced knowledge in an integrated manner

 Have advanced knowledge about architecture and civil engineering as well as related fields; and have
 the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.

 (C1) Have the skills to voluntarily acquire theories and applied knowledge about architecture and civil
 engineering as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about architecture and civil engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team member; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

I Requirements for completion

1. Requirements for completion

To complete the master's course, a student must participate in the course for two or more years, and must acquire the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a master's thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

Classification	Required credits for completion	Remarks
General subjects	6	
Specialized subjects		
Mechanical Engineering	24	
Electrical and Electronic Information Engineering	24	6 credits in total can be substituted with a combination of the following options, with permission from the student's
Computer Science and Engineering	24	supervisor and the subject instructor.
Applied Chemistry and Life Science	24	 Specialized master's subjects from the other departments Specialized master's subjects held in Japanese
Architecture and Civil Engineering	24	(The same subject cannot be taken in both Japanese and English)
Grand total	30	

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the master's degree. Degree application and procedures for submission of a thesis for a master's degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisors.

The Course Schedule is provided at the beginning of each academic year.

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class Registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take specialized subjects given in other departments, or given in Japanese, students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department," before registering.
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject once credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that

grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reasons can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examinations include regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
 - a) Illness (doctor's medical certificate must be submitted)
 - b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Educational Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

- ① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.
 - S···90 to 100 points
 - A···80 to 89 points
 - $B \cdots 70$ to 79 points
 - $C\cdots 60$ to 69 points
 - D···59 points or less

② With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018.

The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 points	Good—Excellent performance	Pass	3.0
В	70 to 79 points	Satisfactory—Generally sound performance	rass	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	-	- Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)		0.0
K	-	Invalidated grade due to misconduct etc.	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs
- (5) Courses that are designated separately by each department (On-the-job Training

(internships), Supervised Research, Seminars, experimental courses, and practical training courses)

③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the master's course at the university for more than four years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid. The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting the approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx *Mobile tagging by camera phones	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled. All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.

- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure				
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly				
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly				
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.				

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes are divided into General Subjects and Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective Required subjects are the subjects that must be selected from among designated subject groups and taken at least a set number of subjects or credits.
- 3) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time	8:50 am- 10:30 am-		1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
TITLE	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A school term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

General subjects

2024.10

									2024.10
					C	lasses/Week			
					1st (grade	2nd		
Compulsory	Subject Name	Class	Excluded	Credits	Fall 1 Fall 2	Spring 1 Spring 2	grade	Instructor	note
Elective	Subject Name	format	from GPA	Credits	2024.10	2025.4	2025.10	Instructor	note
					2025.3	2025.9	2026.9		
Compulsory	Ethics for Researchers	Lecture		1	1		(0.5)		
	Culture and Communication I	Lecture		2	1		(1)	E. Ryan	
	Culture and Communication II	Lecture		2		1	(1)	E. Ryan	
Elective	Principles of Japanese Conversation	Lecture		2		1	(1)	Y. Muramatsu	
Liective	Principles of Japanese Grammar	Lecture		2	1		(1)	J. Ishige	
	Japanese Life Today	Lecture		2		1	(1)		w
	Japanese Industrial Technologies and Innovations	Lecture		2	1		(1)		※

 $\mbox{\@iffeldel{\times}JICA}$ Trainees have to register for the 2 subjects: "Japanese Life Today" and

- \spadesuit Those subjects whose numbers marked with "()" will be held every year.
- ♦ "0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

[&]quot;Japanese Industrial Technologies and Innovations" and are required to earn these academic credits.

									2024.10
						lasses/Week			
Compulsory					1st o	grade Spring 1 Spring 2	2nd grade		
/ Elective	Subject Name	Class format	Excluded from GPA	Credits	2024.10	2025.4	2025.10	Instructor	note
Liective					-	-	-		
					2025.3	2025.9	2026.9		
	Seminar on Mechanical Engineering I	Exercise	0	4		4		Supervisor	
Compulsory	Seminar on Mechanical Engineering II	Exercise	0	2			2	Supervisor	
	Thesis Research on Mechanical Engineering	Experiment	0	6		9		Supervisor	
	Applied Mechanics of Materials	Lecture		1		1		T. Adachi	
	Micromachining Engineering	Lecture		1			0.5	T. Shibata	
	Microsystems Engineering	Lecture		1			0.5	M. Nagai	
	Microstructural Control of Metallic	Lecture		1			0.5	H. Miura	
	Materials Microstructure and Properties of	Lecture		1		1		Y. Todaka	
	Structural Materials					'			
	Advanced Characterization in Materials	Lecture		1	1			M. Kobayashi	
	Modern Control Engineering	Lecture		1			0.5	K.Takagi	
	Precision Mechatronics	Lecture		1		1		K. Sato	
	Robot Kinematics	Lecture		1	1			N. Uchiyama	
	Advanced Agricultural Engineering	Lecture		1			0.5	K. Takayama	
	Advanced Aeroacoustics	Lecture		1	1			A. lida	
	Combustion Theory	Lecture		1			0.5	Y. Nakamura	
	Microscale Transport Phenomena	Lecture		1	1			K. Doi	
	Advanced Fluid and Energy	Lecture		1	1			H. Yokoyama	
	Engineering							T. Shibata	
	*Advanced Mechanical Systems	Lecture		2	1		(1)	M. Nagai S. Kawamura	
	Design I			_			(' '	T. Adachi Y. Takeichi	
						:		T. Shibata	
	Advanced Mechanical Systems Design II	Lecture		2		1	(1)	M. Nagai S. Kawamura	
Elective	200:gi							T. Adachi Y. Takeichi	
Liective								Y. Todaka H. Miura	
	*Advanced Materials and	Lecture		2	1		(1)	M. Kobayashi T. Yasui	
	Manufacturing Process I			_			(' '	Y. Abe N. Adachi	
					=			Y. Oba Y. Todaka	
								H. Miura	
	Advanced Materials and Manufacturing Process II	Lecture		2		1	(1)	M. Kobayashi T. Yasui	
	,							Y. Abe N. Adachi	
					<u> </u>			Y. Oba K. Sato	
	*Advanced System, Control and	Lecture		2	1		(1)	S. Sano K. Takayama	
	Robotics I	Lootaro		_			(1)	N. Uchiyama K. Takagi	
					8			J. Takahashi K. Sato	
	*Advanced System, Control and	Lastina		0		1	(4)	S. Sano K. Takayama	
	Robotics II	Lecture		2		ľ	(1)	N. Uchiyama K. Takagi	
								J. Takahashi Y. Nakamura	
								T. Matsuoka K. Doi	
	Advanced Energy and Environmental Engineering I	Lecture		2	1		(1)	T. Suzuki	
								A. Iida N. Sekishita	
								H. Yokoyama Y. Nakamura	
	Advanced Energy and Environmental							T. Matsuoka K. Doi	
	Engineering II	Lecture		2		1	(1)	T. Suzuki A. lida	
								N. Sekishita H. Yokovama	
	◆ Up to two subjects marked with ※ can	ha aansisa				Pamarili riarin armamilaa			•

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

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^{◆ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

Electrical and Electronic Information Engineering

2024.10

									2024.10
					C	lasses/Week			
					1st g	ırade	2nd		
Compulsory		Class	Excluded		Fall 1 Fall 2	Spring 1 Spring 2	grade		
/	Subject Name	format	from GPA	Credits	2024.10	2025.4	0005 10	Instructor	note
Elective		Torride			2024.10	2025.4	2025.10		
					2025.3	2025.9	2026.9		
	Seminar on Electrical and Electronic	Exercise	0	4		4		Supervisor	
	Information Engineering 1A		_						
Compulsory	Seminar on Electrical and Electronic	Exercise	0	2			2	Supervisor	
Compaisory	Information Engineering 1B			_			_	Cupo. 1.co.	
	Thesis Research on Electrical and	Experiment	0	6		9		Supervisor	
	Electronic Information Engineering	Ехроппоп		Ŭ				Capervicor	
								H. Uchida	
	Material Science for Electronics 1	Lecture		2	1			T. Yatsui	
								G. Kawamura	
								H. Uchida	
	Material Science for Electronics 2	Lecture		2			1	T. Yatsui	
								G. Kawamura	
	Discrise for Electronics 1	Lastina		2		1		A. Matsuda Y. Nakamura	
	Physics for Electronics 1	Lecture				'		R. Kato	
								Ti. Nato	
								A. Matsuda	
	Physics for Electronics 2	Lecture		2			1	Y. Nakamura	
	,							R. Kato	
								H. Takikawa	
	Electrical Energy Systems 1	Lecture		2	1			Y. Murakami	
								T. Tojo	
								H. Takikawa	
	Electrical Energy Systems 2	Lecture		2			1	Y. Murakami	
								T. Tojo	
	Electrical Technology and Materials	Lecture		2		1		R. Inada	
	1	Lootaro		_				T. Kawashima	
	Electrical Technology and Materials							D. Jacoba	
	2	Lecture		2			1	R. Inada T. Kawashima	
Elective	_							1. Nawasiiiiia	
Licotive								T. Kawano	
				_				K. Takahashi	
	Semiconductor Physics 1	Lecture		2	1			K. Yamane	
								Y. J. Choi	
								T. Kawano	
	Semiconductor Physics 2	Lecture		2			1	K. Takahashi	
				-				K. Yamane	
								Y. J. Choi	
								K. Sawada	
	LSI Process 1	Lecture		2		1		Y. Ishikawa H. Sekiguchi	
								T. Noda	
								K. Sawada	
	l ou p			_			l .	Y. Ishikawa	
	LSI Process 2	Lecture		2			1	H. Sekiguchi	
				<u> </u>			<u> </u>	T. Noda	
	Information and Communication							S. Ichikawa	
	Technology 1	Lecture		2		1		K. Takeuchi	
				-				N. Haga S. Ichikawa	
	Information and Communication	Lecture		2			1	K. Takeuchi	
1	Technology 2			_				N. Haga	
1	Advanced Electronic Information							H. Uehara	
]	System 1	Lecture		2	1			M. Tamura	
]	5,5,5,11							X. Shao	
]	Advanced Electronic Information	Lecture		2			1	H. Uehara M. Tamura	
	System 2	Lecture		_			'	X. Shao	1
]	Mathadalam, -f.D.O.D.f	1		_	4		/41		
]	Methodology of R & D 1	Lecture		2	1		(1)	Supervisor	<u></u>
	Methodology of R & D 2	Lecture		2		1	(1)	Supervisor	
	modified by of it & D 2	LUCIUIE		_		'	(1)	Capervisor	
	▲ Please ask your supervisor the av		· ·					· · · · · · · · · · · · · · · · · · ·	· ·

[◆] Please ask your supervisor the availability of the class before registration.

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

Computer Science and Engineering

2024.10

					Classes/Week					2024.10
							rade	2nd		
Compulsory			Excluded from GPA		Fall 1		Spring 1 Spring 2	grade		
/ Elective	Subject Name	Class format		Credits	2024.10 2025.4		2025.10	Instructor	note	
					202	25.3	2025.9	2026.9		
	Seminar on Computer Science and Engineering I	Exercise	0	4		4	4		Supervisor	
Compulsory	Seminar on Computer Science and Engineering II	Exercise	0	2				2	Supervisor	
	Thesis Research on Computer Science and Engineering	Experiment	0	6			9	Supervisor		
	Data Science and Analysis 1	Lecture		1	1			(0.5)	T. Akiba	
	Data Science and Analysis 2	Lecture		1		1		(0.5)	M. Dall'Arno	
	Robotic Perception and Human- Robot Interaction 1	Lecture		1	1			(0.5)	J. Miura	
	Robotic Perception and Human- Robot Interaction 2	Lecture		1		1		(0.5)	R. Ohmura	
	3D Vision Computation 1	Lecture		1	1			(0.5)	Y. Kanazawa	
	3D Vision Computation 2	Lecture		1		1		(0.5)	Y. Sugaya	
	Molecular Simulation 1	Lecture		1				0.5	N. Kurita	
Elective	Molecular Simulation 2	Lecture		1				0.5	H. Goto	
	Computational Intelligence in Brain System	Lecture		1			1	(0.5)	K. Murakoshi	
	Human Sensation and Perception 1	Lecture		1	1			(0.5)	S. Nakauchi	
	Human Sensation and Perception 2	Lecture		1		1		(0.5)	K. Koida	
	Information Security	Lecture		1	_		1		K. Suzuki	
	Statistical Machine Learning Theory	Lecture		1				0.5	K. Watanabe	
	X Reality and Psychology 1	Lecture		1	1			(0.5)	M. Kitazaki	
	X Reality and Psychology 2	Lecture		1		1		(0.5)	T. Minami K. Uehara	

^{♦ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

											2024.10
							lasses/We	ek			
Compulsory					Fall 1	1st g Fall 2	grade Spring 1	Spring 2	2nd grade		
./	Subject Name	Class format	Excluded from GPA	Credits		4.10		25.4	2025.10	Instructor	note
Elective						-		-	-		
					202	25.3	202	25.9	2026.9		
	Seminar on Applied Chemistry and Life Science 1	Exercise	0	3		;	3			Supervisor	
Compulsory	Seminar on Applied Chemistry and Life Science 2	Exercise	0	3					3	Supervisor	
	Thesis Research on Applied Chemistry and Life Science	Experiment	0	6		=	9	-		Supervisor	
	Advanced Separation Chemistry	Lecture		1	1					Y. Saito	
	X-ray Spectroscopy for Catalytic Engineering	Lecture		1					0.5	T. Mizushima	
	Applied Physical Chemistry	Lecture		1		1				A. Matsumoto	
	Advanced Polymer Chemistry	Lecture		1					0.5	N. Haraguchi	
	Advanced Polymer Engineering	Lecture		1					0.5	E. Yoshida	
	Special Topics in Applied Organic Chemistry	Lecture		1			1			K. Shibatomi	
	Developmental Neuroscience	Lecture		1					0.5	S. Yoshida	
	Advanced Molecular Life Science	Lecture		1	1					T. Tanaka	
	Advanced Genomics	Lecture		1		1				T. Eki	
	Advanced Reactive Plasma	Lecture		1				1		K. Takashima	
	Advanced Reaction Engineering	Lecture		1					0.5	T. Oguchi	
	Advanced Supercritical Fluid Engineering	Lecture		1				1		H. Daimon	
	Applied Environmental Biology	Lecture		1					0.5	A. Nakabachi	
Elective	Photobiology	Lecture		1					0.5	Y. Hirose	
	Advanced Surface and Interface Chemistry	Lecture		1				1		R. Tero	
	Advanced Molecular and Cellular Bioengineering	Lecture		1					0.5	H. Kurita	
	Advanced Supramolecular Chemistry	Lecture		1		1				Y. Arakawa	
	Advanced Molecular Design Chemistry 1	Lecture		2		1			(1)	A. Matsumoto Y. Saito	
	Advanced Molecular Design Chemistry 2	Lecture		2				1	(1)	E. Yoshida N.Haraguchi S. Ariyoshi	
	Advanced Molecular Functional Chemistry 1	Lecture		2		1			(1)	T. Mizushima T. Oguchi Y. Arakawa	
	※ Advanced Molecular Functional Chemistry 2	Lecture		2				1	(1)	K. Shibatomi H. Daimon	
	Advanced Molecular Biological Chemistry 1	Lecture		2		1			(1)	T. Eki K. Takashima R. Tero T. Tanaka H. Kurita	
	Advanced Molecular Biological Chemistry 2	Lecture		2				1	(1)	Y. Hirose S. Yoshida R. Numano J. Nakabachi	

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

 $^{\ \, \}begin{picture}(100,0) \put(0,0){\line(0,0){100}} \put(0,0){\line(0,$

^{• &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

Architecture and Civil Engineering

2024.10

-				1					2024.10
						lasses/Week			
Commiller						rade	2nd grade		
Compulsory /	Subject Name	Class	Excluded	Credits	Fall 1 Fall 2	Spring 1 Spring 2		Instructor	note
Elective		format	from GPA		2024.10	2025.4	2025.10		
					- 2025.3	2025.9	2026.9		
	Seminar on Architecture and Civil		_			<u> </u>			
	Engineering I	Exercise	0	3		3		Supervisor	
Compulsory	Seminar on Architecture and Civil Engineering II	Exercise	0	3			3	Supervisor	
	Thesis Research on Architecture and Civil Engineering	Experiment	0	6		9		Supervisor	
	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	(1)	T. Matsui	
	Seismic Design of Structures	Lecture		2	1		(1)	T. Saito	
	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 building	Lecture		2		1		M. Tajima Y. Shimazaki	
	Coastal Hydraulics	Lecture		2			1	S. Kato	
	Water Environment Engineering	Lecture		2		1		T. Inoue	
	Environmental Management	Lecture		2		1		T. Tokairin K. Yokota	
	Advanced Urban Planning	Lecture		2			1	J. Asano H. Ono	
	Advanced Architectural Design	Lecture		2			1	D. Fujita	
Elective	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	
	Computational Structural Design	Lecture		2		1		Y.Takiuchi	
	Advanced Structural System Planning and Design I	Lecture		2	1		(1)	T. Saito S. Nakazawa	
	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	
	Advanced Environmental System Planning and Design II	Lecture		2		1	(1)	S. Kato Y. Shimazaki K. Yokota T. Tokairin	
	Advanced Regional System Planning and Design I	Lecture		2	1		(1)	J. Asano H. Shibusawa D. Fujita	
	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.

Twinning Program Double Degree Program Imaging and Light in Extended Reality Program Course Requirement Guide Book

(October 2024)

International Master's Degree Program



Diploma Policy

Diploma Policy for Master's Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Master (of Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering, as well as liberal arts education; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical and creative skills to understand and solve problems leveraging such knowledge in an integrated manner.

Mechanical Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Mechanical Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about mechanical engineering and related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about mechanical engineering and related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about mechanical engineering and related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high skills to mutually respect the values of individual team members; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Electrical and Electronic Information Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Electrical and Electronic Information Engineering; have the knowledge and abilities stated below; have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted the degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about electrical and electronic information engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about electrical and electronic information engineering as well as related fields; to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about electrical and electronic information engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team members; to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Computer Science and Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Computer Science and Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about computer science and engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about computer science and engineering as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about computer science and engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team members; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Applied Chemistry and Life Science

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Applied Chemistry and Life Science; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about applied chemistry and life science as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about applied chemistry and life science as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about applied chemistry and life science as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team member; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Architecture and Civil Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Architecture and Civil Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

- **(B) Sound ethics and social awareness as advanced-level engineers and researchers**Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.
- **(C) Practical and creative skills to utilize advanced knowledge in an integrated manner** Have advanced knowledge about architecture and civil engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.
- (C1) Have the skills to voluntarily acquire theories and applied knowledge about architecture and civil engineering as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about architecture and civil engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team member; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

I Requirements for completion

1. Requirements for completion

To complete the master's course, a student must participate in the course for two or more years, and must acquire the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a master's thesis, and must pass a review and final examination.

Classification	Required credits for completion	Remarks
General subjects	6	
Specialized subjects		
Mechanical Engineering	24	
Electrical and Electronic Information Engineering	24	
Computer Science and Engineering	24	
Applied Chemistry and Life Science	24	
Architecture and Civil Engineering	24	
Grand total	30	

For students in the Twinning Program and also the Double Degree Program, up to 15 credits that the students had acquired at their home university before coming to TUT can be transferred to TUT Master's Program only if TUT admits after being examined. Those 15 credits shall be determined by TUT's criteria. However, credit transfer for compulsory courses will not be accepted.

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the master's degree. Degree application and procedures for submission of a thesis for a master's degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisors.

The Course Schedule is provided at the beginning of each academic year.

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a b

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 2) A student cannot re-register for a subject once credits are given.
- 3) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manuals instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reasons can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examinations include regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Reguest for a make-up examination".
 - a) Illness (doctor's medical certificate must be submitted)
 - b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Educational Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

- ① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.
 - S···90 to 100 points
 - $A \cdots 80$ to 89 points
 - $B \cdots 70$ to 79 points
 - C···60 to 69 points
 - D···59 points or less
- ② With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of

students, starting with students who entered TUT in academic year 2018.

The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 points	Good—Excellent performance		3.0
В	70 to 79 points	Satisfactory—Generally sound performance	rass	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	1	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	-	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)	Abandonment	0.0
K	-	Invalidated grade due to misconduct etc.	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs
- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)

③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the master's Twinning Program course, Double Degree Program course and Imaging and Light in Extended Reality Program course at the university for more than two years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid.

The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting the approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	information	
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx *Mobile tagging by camera phones	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled.

Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.

- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled. All cancelled classes and examinations will be rescheduled. Cancelled classes will be held
- on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.

- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from the TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes are divided into General Subjects and Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages.
See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective Required subjects are the subjects that must be selected from among designated subject groups and taken at least a set number of subjects or credits.
- 3) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time	8:50 am-	10:30 am-	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30 pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A school term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

General subjects (Twinning Program Double Degree Program)

Compulary					Cla	asses/Week		
Compulsory /	Subject Name	Class	Excluded	Credits	Fall	Spring	Instructor	note
Elective	,	format	from GPA		2024.10	2025.4		
					2025.3	2025.9		
Compulsory	Ethics for Researchers	Lecture		1	1			
	Culture and Communication I	Lecture		2	1		E. Ryan	
	Culture and Communication II	Lecture		2		1	E. Ryan	
Elective	Principles of Japanese Conversation	Lecture		2		1	Y. Muramatsu	
Liective	Principles of Japanese Grammar	Lecture		2	1		J. Ishige	
	Japanese Life Today	Lecture		2		1		
	Japanese Industrial Technologies and Innovations	Lecture		2	1			

							s/Week grade		1	
Compulsory		01			Fall 1		<u> </u>	Spring 2		
/ Elective	Subject Name	Class format	from GPA	Credits	2024	4.10	20	25.4	Instructor	note
					2025.3 2025.9					
	Seminar on Mechanical Engineering	Exercise	0	6			6		Supervisor	
Compulsory	Thesis Research on Mechanical Engineering	Experiment	0	6			9		Supervisor	
	Applied Mechanics of Materials	Lecture		1			1		T. Adachi	
	Micromachining Engineering	Lecture		1					T. Shibata	
	Microsystems Engineering	Lecture		1					M. Nagai	
	Microstructural Control of Metallic Materials	Lecture		1					H. Miura	
	Microstructure and Properties of Structural Materials	Lecture		1			1		Y. Todaka	
	Advanced Characterization in Materials	Lecture		1		1			M. Kobayashi	
	Modern Control Engineering	Lecture		1					K.Takagi	
	Precision Mechatronics	Lecture		1			1		K. Sato	
	Robot Kinematics	Lecture		1	1				N. Uchiyama	
	Advanced Agricultural Engineering	Lecture		1					K. Takayama	
	Advanced Aeroacoustics	Lecture		1	1				A. lida	
	Combustion Theory	Lecture		1	•				Y. Nakamura	
	Microscale Transport Phenomena	Lecture		1		1			K. Doi	
	Advanced Fluid and Energy					<u> </u>				
	Engineering	Lecture		1		1			H. Yokoyama T. Shibata	
	Advanced Mechanical Systems Design I	Lecture		2	1	1			M. Nagai S. Kawamura T. Adachi	
	**Advanced Mechanical Systems Design II	Lecture		2				1	Y. Takeichi T. Shibata M. Nagai S. Kawamura T. Adachi Y. Takeichi	
	Advanced Materials and Manufacturing Process I	Lecture		2	1	1			Y. Todaka H. Miura M. Kobayashi T. Yasui Y. Abe N. Adachi Y. Oba	
	Advanced Materials and Manufacturing Process II	Lecture		2				1	Y. Todaka H. Miura M. Kobayashi T. Yasui Y. Abe N. Adachi	
	**Advanced System, Control and Robotics I	Lecture		2	1	1			Y. Oba K. Sato S. Sano K. Takayama N. Uchiyama K. Takagi J. Takahashi K. Sato	
R(**Advanced System, Control and Robotics II	Lecture		2				1	K. Sato S. Sano K. Takayama N. Uchiyama K. Takagi J. Takahashi	
	%Advanced Energy and Environmental Engineering I	Lecture		2	1	1			Y. Nakamura T. Matsuoka K. Doi T. Suzuki A. lida N. Sekishita H. Yokoyama	
	%Advanced Energy and Environmental Engineering II	Lecture		2				1	Y. Nakamura T. Matsuoka K. Doi T. Suzuki A. Iida N. Sekishita	

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

Electrical and Electronic Information Engineering (Twinning Program)

				1	21	- AM1.	1	2024.10
						s/Week	-	
Compulsory						grade	-	
./	Subject Name	Class format	Excluded from GPA	Credits	Fall 1 Fall 2 2024.10	Spring 1 Spring 2 2025.4	Instructor	note
Elective					2025.3	2025.4		
					2025.3	2025.9		
Compulsory	Seminar on Electrical and Electronic Information Engineering	Exercise	0	6		6	Supervisor	
	Thesis Research on Electrical and Electronic Information Engineering	Experiment	0	6	9		Supervisor	
	Material Science for Electronics 1	Lecture		2	1		H. Uchida T. Yatsui G. Kawamura	
	Material Science for Electronics 2	Lecture		2			H. Uchida T. Yatsui G. Kawamura	
	Physics for Electronics 1	Lecture		2		1	A. Matsuda Y. Nakamura R. Kato	
	Physics for Electronics 2	Lecture		2			A. Matsuda Y. Nakamura R. Kato	
	Electrical Energy Systems 1	Lecture		2	1		H. Takikawa Y. Murakami T. Tojo	
	Electrical Energy Systems 2	Lecture		2			H. Takikawa Y. Murakami T. Tojo	
	Electrical Technology and Materials 1	Lecture		2		1	R. Inada T. Kawashima	
Elective	Electrical Technology and Materials 2	Lecture		2			R. Inada T. Kawashima	
Liective	Semiconductor Physics 1	Lecture		2	1		T. Kawano K. Takahashi K. Yamane Y. J. Choi	
	Semiconductor Physics 2	Lecture		2			T. Kawano K. Takahashi K. Yamane Y. J. Choi	
	LSI Process 1	Lecture		2		1	K. Sawada Y. Ishikawa H. Sekiguchi T. Noda	
	LSI Process 2	Lecture		2			K. Sawada Y. Ishikawa H. Sekiguchi T. Noda	
	Information and Communication Technology 1	Lecture		2		1	S. Ichikawa K. Takeuchi N. Haga	
	Information and Communication Technology 2	Lecture		2			S. Ichikawa K. Takeuchi N. Haga	
A S	Advanced Electronic Information System 1	Lecture		2	1		H. Uehara M. Tamura X. Shao	
	Advanced Electronic Information System 2	Lecture		2			H. Uehara M. Tamura X. Shao	
	Methodology of R & D 1	Lecture		2	1		Supervisor	
	Methodology of R & D 2	Lecture		2		1	Supervisor	

[♦] Please ask your supervisor the availability of the class before registration.

Computer Science and Engineering (Twinning Program)

	T		1						ı	2024.10
							s/Week			
							grade			
Compulsory		Class	Excluded	Credit	Fall 1	Fall 2	Spring 1 S	Spring 2		
/ Elective	Subject Name	format	from GPA	S	202	4.10 -	2025.	.4	Instructor	note
					2025.3 2025.9		.9			
Compulsory	Seminar on Computer Science and Engineering	Exercise	0	6		(6		Supervisor	
Compulsory	Thesis Research on Computer Science and Engineering	Experiment	0	6	9			Supervisor		
	Data Science and Analysis 1	Lecture		1	1				T. Akiba	
	Data Science and Analysis 2	Lecture		1		1			M. Dall'Arno	
	Robotic Perception and Human- Robot Interaction 1	Lecture		1	1				J. Miura	
	Robotic Perception and Human- Robot Interaction 2	Lecture		1		1			R. Ohmura	
	3D Vision Computation 1	Lecture		1	1				Y. Kanazawa	
	3D Vision Computation 2	Lecture		1		1			Y. Sugaya	
	Molecular Simulation 1	Lecture		1					N. Kurita	
Elective	Molecular Simulation 2	Lecture		1					H. Goto	
	Computational Intelligence in Brain System	Lecture		1			1		K. Murakoshi	
	Human Sensation and Perception 1	Lecture		1	1				S. Nakauchi	
	Human Sensation and Perception 2	Lecture		1		1			K. Koida	
	Information Security	Lecture		1				1	K. Suzuki	
	Statistical Machine Learning Theory	Lecture		1					K. Watanabe	
	X Reality and Psychology 1	Lecture		1	1				M. Kitazaki	
	X Reality and Psychology 2	Lecture		1		1			T. Minami K. Uehara	

	1			1		2:			T	2024.10
							s/Week			
Compulsory		01			Fall 1	Fall 2	grade Spring 1	Spring 2		
Elective	Subject Name	Class format	from GPA	Credits	202	<u> </u>	2025.4		Instructor	note
					202	25.3	2025	.9		
Compulsory	Seminar on Applied Chemistry and Life Science	Exercise	0	6			6		Supervisor	
Compulsory	Thesis Research on Applied Chemistry and Life Science	Experiment	0	6	9		Supervisor			
	Advanced Separation Chemistry	Lecture		1	1				Y. Saito	
	X-ray Spectroscopy for Catalytic Engineering	Lecture		1					T. Mizushima	
	Applied Physical Chemistry	Lecture		1		1			A. Matsumoto	
	Advanced Polymer Chemistry	Lecture		1					N. Haraguchi	
	Advanced Polymer Engineering	Lecture		1					E. Yoshida	
	Special Topics in Applied Organic Chemistry	Lecture		1			1		K. Shibatomi	
	Developmental Neuroscience	Lecture		1					S. Yoshida	
	Advanced Molecular Life Science	Lecture		1	1				T. Tanaka	
	Advanced Genomics	Lecture		1		1			T. Eki	
	Advanced Reactive Plasma	Lecture		1				1	K. Takashima	
	Advanced Reaction Engineering	Lecture		1					T. Oguchi	
	Advanced Supercritical Fluid Engineering	Lecture		1				1	H. Daimon	
Elective	Applied Environmental Biology	Lecture		1					A. Nakabachi	
	Photobiology	Lecture		1					Y. Hirose	
	Advanced Surface and Interface Chemistry	Lecture		1				1	R. Tero	
	Advanced Molecular and Cellular Bioengineering	Lecture		1					H. Kurita	
	Advanced Supramolecular Chemistry	Lecture		1		1			Y. Arakawa	
	Advanced Molecular Design Chemistry 1	Lecture		2	-	1			A. Matsumoto Y. Saito	
	※ Advanced Molecular Design Chemistry 2	Lecture		2			1		E. Yoshida N.Haraguchi S. Ariyoshi	
	Advanced Molecular Functional Chemistry 1	Lecture		2	-	1			T. Mizushima T. Oguchi	
	Advanced Molecular Functional Chemistry 2	Lecture		2			1		Y. Arakawa K. Shibatomi H. Daimon	
% C	Advanced Molecular Biological Chemistry 1	Lecture		2	-	1			T. Eki K. Takashima R. Tero T. Tanaka H. Kurita	
	Advanced Molecular Biological Chemistry 2	Lecture		2			1		Y. Hirose S. Yoshida R. Numano J. Nakabachi	

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

								2024.10
						s/Week		
						grade		
Compulsory		Class	Cueluded		Fall 1 Fall 2	Spring 1 Spring 2		
/ Elective	Subject Name	Class format	Excluded from GPA	Credits	2024.10	2025.4	Instructor	note
Elective					- 2025.3	- 2025.9		
	Seminar on Architecture and Civil	Exercise	0	6		6	Supervisor	
Compulsory	Engineering Thesis Research on Architecture and	Experiment		6			Supervisor	
	Civil Engineering	<u> </u>	0		,	,	·	
	Elasticity and Stability Finite Element Method for Continua	Lecture		2			Y. Matsumoto	
	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		T. Saito	
	Geohazards	Lecture		2			T. Matsuda	
	Building Science: Indoor Air Quality and Ventilation	Lecture		2			M. Tajima Y. Shimazaki	
	Building science: Thermal Environment and vernacular building	Lecture		2		1	M. Tajima Y. Shimazaki	
	Coastal Hydraulics	Lecture		2			S. Kato	
	Water Environment Engineering	Lecture		2		1	T. Inoue	
	Environmental Management	Lecture		2		1	T. Tokairin K. Yokota	
	Advanced Urban Planning	Lecture		2			J. AsanoH. Ono	
	Advanced Architectural Design	Lecture		2			D. Fujita	
Elective	Advanced Transportation and Urban Planning	Lecture		2			N. Sugiki	
	Advanced Computational Economics	Lecture		2			H. Shibusawa	
	Advanced Transportation Engineering	Lecture		2	1		K. Matsuo	
	Computational Structural Design	Lecture		2		1	Y.Takiuchi	
	Advanced Structural System Planning and Design I	Lecture		2	1		T. Saito S. Nakazawa	
	※ Advanced Structural System Planning and Design II	Lecture		2		1	T. Matsui Y. Matsumoto T. Matsuda	
	Advanced Environmental System Planning and Design I	Lecture		2	1		M. Tajima T. Inoue S. Kato	
	Advanced Environmental System Planning and Design II	Lecture		2		1	Y. Shimazaki K. Yokota T. Tokairin	
	% Advanced Regional System Planning and Design I	Lecture		2	1		J. Asano H. Shibusawa D. Fujita	
	※ Advanced Regional System Planning and Design II	Lecture		2			H. Ono N. Sugiki K. Matsuo	

[♦] Up to two subjects marked with ¾ can be acquired from courses taught by your supervisor. Consult your supervisor about details.

Mechanical Engineering (Double Degree Program)

										2024.10
						Classe	s/Week			
					2nd grade					
Compulsory /	Subject Name	Class	Excluded	Credits	Fall 1	Fall 2	Spring 1	Spring 2	Instructor	note
Elective		format	from GPA		2024.10 2025.4		25.4	mon dotor		
					2025	5.3	202	25.9		
	Seminar on Mechanical Engineering I	Exercise	0	4		-	1		Supervisor	
Compulsory	Seminar on Mechanical Engineering II	Exercise	0	2		2	2		Supervisor	-
Compulsory	Thesis Research on Mechanical Engineering	Experiment	0	6		9	9		Supervisor	
	Internship	Experiment	0	_	12			Supervisor		
	Advances in Mechanical Design	Lecture		2					T. Adachi	
	Advances in Material Science and Manufacturing	Lecture		2	***************************************		1		Y. Todaka M. Kobayashi	
Elective	Advances in Thermal and Fluid Mechanics	Lecture		2	1				A. lida K. Doi	
	Advances in Systems, Control and Robotics	Lecture		2			2		K. Sato N. Uchiyama	
	Robotics	Lecture		2	1				N. Uchiyama	

Computer Science and Engineering (Double Degree Program)

										2024.10
					<u> </u>		s/Week			
	l i	ļ į		ļ <u> </u>			grade		ļ	
Compulsory		Class	Excluded	Credit	Fall 1	Fall 2	Spring 1	Spring 2		
/ Elective	Subject Name	format	from GPA	S	202	4.10	2025	5.4	Instructor	note
					2025.3 2025.9		5.9			
Compulsory	Seminar on Computer Science and Engineering	Exercise	0	6			6		Supervisor	
Compuisory	Thesis Research on Computer Science and Engineering	Experiment	0	6			9		Supervisor	
	Data Science and Analysis 1	Lecture		1	1				T. Akiba	
	Data Science and Analysis 2	Lecture		1		1			M. Dall'Arno	
	Robotic Perception and Human- Robot Interaction 1	Lecture		1	1				J. Miura	
	Robotic Perception and Human- Robot Interaction 2	Lecture		1		1			R. Ohmura	
	3D Vision Computation 1	Lecture		1	1				Y. Kanazawa	
	3D Vision Computation 2	Lecture		1		1			Y. Sugaya	
	Molecular Simulation 1	Lecture		1					N. Kurita	
Elective	Molecular Simulation 2	Lecture		1					H. Goto	
	Computational Intelligence in Brain System	Lecture		1			1		K. Murakoshi	
	Human Sensation and Perception 1	Lecture		1	1				S. Nakauchi	
	Human Sensation and Perception 2	Lecture		1		1			K. Koida	
	Information Security	Lecture		1				1	K. Suzuki	
S	Statistical Machine Learning Theory	Lecture		1					K. Watanabe	
	X Reality and Psychology 1	Lecture		1	1				M. Kitazaki	
	X Reality and Psychology 2	Lecture		1		1			T. Minami K. Uehara	

General subjects (IMLEX Program)

Compulsory					Classe	s/Week		
/ /	Subject Name	Class format	Excluded from GPA	Credits	Fall	Spring	Instructor	note
Elective		ionnai	Irom GPA		2024.10	2025.4		
					2025.3	2025.9		
	Ethics for Researchers	Lecture		1	1			
Compulsory	Japanese Communication Theory	Lecture		2	1		C. Ishikawa	
	Culture and Communication I	Lecture		2	1		E. Ryan	
Elective	Culture and Communication II	Lecture		2		1	E. Ryan	
Elective	Japanese Life Today	Lecture		2		1		
	Japanese Industrial Technologies and Innovations	Lecture		2	1			

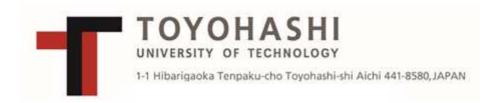
Computer Science and Engineering (IMLEX Program)

									2024.10
							s/Week		
						2nd	grade]	
Compulsory		Class	Excluded	Credit	Fall 1	Fall 2	Spring 1 Spring 2	Instructor	
/	Subject Name	format	from	S	202	4.10	2025.4		note
Elective		Torritat	GPA	Ü	-		-		
					202	25.3	2025.9		
	Case Study in Imaging and Light								IMLEX
	and XR	Exercise	0	4	4	4		Supervisor	Core Courses
			_	_					IMLEX
	Advanced Research Methods	Exercise	0	2	;	2		Supervisor	Core Courses
	Supervised Research in								
Compulsory	Computer Science and	Experiment	0	6			9	Supervisor	IMLEX Core Courses
	Engineering								Core Courses
	Data Science and Analysis 1	Lecture		1	1			T. Akiba	IMLEX
	Data Ocience and Analysis 1	Lecture		'	'			1. ANDA	Core Courses
	Data Science and Analysis 2	Lecture		1		1		M. Dall'Arno	IMLEX
	•	2001010				<u> </u>		IVII. Baily lillo	Core Courses
	Human Sensation and	Lecture		1	1			S. Nakauchi	Compulsory in
	Perception 1								Lighting Track
	Human Sensation and	Lecture		1		1		K. Koida	Compulsory in
	Perception 2							1	Lighting Track
	X Reality and Psychology 1	Lecture		1	1			M. Kitazaki	Compulsory in
									Lighting Track
	X Reality and Psychology 2	Lecture		1		1		T. Minami	Compulsory in
Elective	, , ,							K. Uehara	Lighting Track
Required	3D Vision Computation 1	Lecture		1	1			Y. Kanazawa	Compulsory in
	•								Computational IMLEX
	3D Vision Computation 2	Lecture		1		1		Y. Sugaya	Compulsory in
	Debatic Developing and U								Computational IMLEX
	Robotic Perception and Human- Robot Interaction 1	Lecture		1	1			J. Miura	Compulsory in
									Computational IMLEX
	Robotic Perception and Human- Robot Interaction 2	Lecture		1		1		R. Ohmura	Compulsory in
	nobol interaction 2								Computational

Course Requirement Guide Book

(October 2024)

International Doctoral Degree Program



Diploma Policy

Diploma Policy for Doctoral Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Doctor of Philosophy (Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider comprehensively the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment as a leader through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level leading engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical, creative and leading skills to understand and solve problems leveraging such knowledge in an integrated and progressive manner.

Mechanical Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Mechanical Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as highly advanced-level engineers and researchers; and have the ability to discover, set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about mechanical engineering and related fields, and have ability to create and practice original techniques for problem solving by acquiring the research and development methodology that combines such knowledge in an extensive and organic manner.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members, and the high ability to contribute to the goals of the team as a leader.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the skills to investigate the nature of change in society, environment and technology, and voluntarily make plans and learn throughout one's life.

Electrical and Electronic Information Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Electrical and Electronic Information Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

of enrollment and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about electrical and electronic information engineering as well as related fields; have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

(E) Inquisitive mind and continuous learning skill for changes in the state-of-the-art technology and in the social environment

Have the skills to voluntarily make plans and learn throughout one's life in response to changes in society, environment and technology.

Computer Science and Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Computer Science and Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

d be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about computer science and engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving, understanding the methodology of research, creating original technology, and integrating all knowledges organically.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members. Have sophisticated ability as a leader to contribute for the achievement the goal of team.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and in the social environment

Have the skills to research the essence of changes in society, environment, and technology. Have the skills to voluntarily make plans and learn throughout one's life in response to changes in society, environment and technology.

Applied Chemistry and Life Science

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Applied Chemistry and Life Science; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as highly advanced-level engineers and researchers; and have the ability to find, set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have the ability to create imaginative technology to solve problems and put them into practice through learning, by experience, methodologies for research and development on the basis of the integration of extensive knowledge about applied chemistry, life science and their related fields.

(D) Communication skills for global success

Have the communication skills to effectively express and disseminate one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members as well as leadership ability to contribute to the team's achievements.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the ability to explore the nature of changes in society, environment and technology and to voluntarily make plans and learn throughout one's life.

Architecture and Civil Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Architecture and Civil Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare with a wide view.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as leading -level engineers and researchers; and have the ability to discover, set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about architecture and civil engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving, understanding the methodology of research, creating original technology, and integrating all knowledges organically.

(D) Communication skills for global success

Have the communication skills to effectively express and transmit one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

Have sophisticated ability as a leader to contribute for the achievement the goal of team.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the skills to investigate the essence of changes in society, environment and technology. Have the skills to voluntarily make plans and learn throughout one's life.

I Requirements for completion

1. Requirements for completion

To complete the doctoral course, a student must participate in the course for three or more years, and must obtain the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a doctoral thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

Classification	Required credits for completion	Remarks
Mechanical Engineering	12	4 credits in total can be substituted with a combination of the following
Electrical and Electronic Information Engineering	12	options , with permission from the student's supervisor and the subject instructor. 1. Specialized subjects from
Computer Science and Engineering	12	International Master's Degree Program (except for Advanced subjects) 2. Subjects of the other departments from International
Applied Chemistry and Life Science	12	Doctoral Degree Program 3. Subjects from doctoral program of student's own department held in Japanese
Architecture and Civil Engineering	12	(The same subject cannot be taken in both Japanese and English)

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the doctoral degree. Degree application and procedures for submission of a thesis for a doctoral degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisor.

The Course Schedule is provided at the beginning of each academic year.

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take Specialized subjects from International Master's Degree Program (except for Advanced topics subjects), subjects from your own department held in Japanese, or other department's subjects from International Doctoral Degree Program, Students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department".
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject for which credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period.

Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reason can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
- a) Illness (doctor's medical certificate must be submitted)
- b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.

 $S \cdots 90$ to 100 points

 $A \cdots 80$ to 89 points

 $B \cdots 70$ to 79 points

C···60 to 69 points

D···59 points or less

② With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018.

The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 good—Excellent performance		Pass	3.0
В	70 to 79 points	Satisfactory—Generally sound performance	rass	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	-	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)	Abandonment	0.0
K	-	Invalidated grade due to misconduct	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to

graduate school programs

- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)
- ③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the doctoral course at the university for more than six years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid.

The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of the cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled.
- *All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.
- 6) If cancelled classes cannot be held on YOBIBI (optional extra day), and final exams,

on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.

7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes in Doctoral program are only Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages.
See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time	8:50 am-	10:30 am-	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
Time	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30 pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A School term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

Mechanical Engineering

(Doctoral Degree Program) 2024.10

	<u> </u>									
					Instructor	1st g	rade	2nd	3rd	
Compulsory		Class	Excluded from GPA	Credits		Fall Spring		grade	grade	
/ Elective	Subject Name	format				2024.10	2025.4	2025.10	2026.10	note
						- 2025.3	- 2025.9	2026.9	- 2027.9	
	Advanced Seminar on Mechanical Engineering 1	Exercise	0	4	Supervisor	4	1			
Compulsory	Advanced Seminar on Mechanical Engineering 2	Exercise	0	1	Supervisor			1		
	Seminar on Interdisciplinary Research	Exercise		1				1		
Elective Required	Ethics for Researchers	Lecture		1		1				※ 1
	Advanced Mechanical Systems	Lecture		2	S. Kawamura T. Adachi Y. Takeichi		1			
	Advanced Production Processes	Lecture		2	T. Shibata M. Nagai Y. Abe	1				
	Advanced Manufacturing Processes	Lecture		2	M. Kobayashi T. Yasui		1			
-i .:	Advanced Materials Science	Lecture		2	H. Miura Y. Todaka N. Adachi Y. Oba	1				
Elective	Advanced Mechatronics	Lecture		2	K. Sato K. Takagi S. Sano		1			
	Advanced Systems and Instrumentation Engineering	Lecture		2	N. Uchiyama K. Takayama J. Takahashi	1				
	Advanced Energy Engineering	Lecture		2	Y. Nakamura K. Doi T. Suzuki T. Matsuoka		1			
	Advanced Environmental Engineering	Lecture		2	A. lida N. Sekishita H. Yokoyama	1				

^{♦ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

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

Electrical and Electronic Information Engineering

(Doctoral Degree Program) 2024.10

<u> </u>	i Bogioo i Togianii,									202 1110
Compulsory	Subject Name				Instructor	1st grade		2nd grade	3rd grade	
/ Elective		Class format	Excluded from GPA	Credits		Fall 2024.10	Spring 2025.4	2025.10	2026.10	note
						2025.3	2025.9	2026.9	2027.9	
	Seminar on Electrical and Electronic Information Engineering 2	Exercise	0	4	Supervisor	4	ļ			
Compulsory	Seminar on Electrical and Electronic Information Engineering 3	Exercise	0	1	Supervisor			1		
	Seminar on Interdisciplinary Research	Exercise		1				1		
Elective Required	Ethics for Researchers	Lecture		1		1				% 1
	Advanced Electronic Materials 1	Lecture		2	H. Uchida T. Yatsui G. Kawamura		1			
	Advanced Electronic Materials 2	Lecture		2	A. Matsuda Y. Nakamura R. Kato	1				
	Advanced Electrical Systems 1	Lecture		2	H. Takikawa R. Inada Y. Murakami	1				
	Advanced Electrical Systems 2	Lecture		2	T. Tojo T. Kawashima		1			
Elective	Advanced Microelectronics 1	Lecture		2	K. Sawada Y. Ishikawa H. Sekiguchi T. Noda		1			
	Advanced Microelectronics 2	Lecture		2	T. Kawano K. Takahashi K. Yamane Y. J. Choi	1				
	Advanced Information and Communication Systems 1	Lecture		2	S. Ichikawa K. Takeuchi N. Haga		1			
	Advanced Information and Communication Systems 2	Lecture		2	H. Uehara M. Tamura X. Shao	1				
	Methodology of R & D	Lecture		2	Supervisor	1				

[◆] Please ask your supervisor the availability of the class before registration.

^{◆ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

X1 Students who have obtained the credit of this subject during Master's program must take another subject among subject in the doctoral program

Computer Science and Engineering (Doctoral Degree Program)

(Bootone	ai Degree Program)											2024.10
	Subject Name				Instructor		1st g	ırade	2nd	3rd		
0						F	all	Spi	ring	grade	grade	
Compulsory / Elective		Class format	Exclude d from GPA	Credits		2024.10 - 2025.3		2025.4 - 2025.9		2025.10	2026.10 - 2027.9	note
	Seminar on Computer Science and Engineering 1	Exercise	0	4	Supervisor		4	4				
Compulsory	Seminar on Computer Science and Engineering 2	Exercise	0	1	Supervisor					1		
	Seminar on Interdisciplinary Research	Exercise		1						1		
Elective Required	Ethics for Researchers	Lecture		1		1						※ 1
	Advanced Data Science and Analysis 1	Lecture		1	T. Akiba	1				(0.5)		
	Advanced Data Science and Analysis 2	Lecture		1	M. Dall'Arno		1			(0.5)		
	Advanced Robotic Perception and Human-Robot Interaction 1	Lecture		1	J. Miura	1				(0.5)		
	Advanced Robotic Perception and Human-Robot Interaction 2	Lecture		1	R. Ohmura		1			(0.5)		
	Advanced 3D Vision Computation 1	Lecture		1	Y. Kanazawa	1				(0.5)		
	Advanced 3D Vision Computation 2	Lecture		1	Y. Sugaya		1			(0.5)		
	Advanced Molecular Simulation 1	Lecture		1	N. Kurita					0.5		
Elective	Advanced Molecular Simulation 2	Lecture		1	H. Goto					0.5		
	Advanced Computational Intelligence in Brain System	Lecture		1	K. Murakoshi			1		(0.5)		
	Advanced Human Sensation and Perception 1	Lecture		1	S. Nakauchi	1				(0.5)		
	Advanced Human Sensation and Perception 2	Lecture		1	K. Koida		1			(0.5)		
	Information Security, Advanced	Lecture		1	K. Suzuki				1			
	Advanced Statistical Machine Learning Theory	Lecture		1	K. Watanabe					0.5		
	Advanced X Reality and Psychology	Lecture		1	M. Kitazaki	1				(0.5)		
	Advanced X Reality and Psychology 2	Lecture		1	T. Minami K. Uehara		1			(0.5)		

 $^{\ \, \ \, \ \, \ \, \ \, \ \, \ \,}$ Those subjects whose numbers marked with "()" will be held every year.

^{• &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

X1 Students who have obtained the credit of this subject during Master's program must take another subject among subject in the doctoral program

Applied Chemistry and Life Science (Doctoral Degree Program)

(Doctoral Degree Program) 2024.10

(Bootorar i	Degree Frogram)									2024.10
Campulaani						1st grade		2nd grade	3rd grade	
Compulsory / Elective	Subject Name	Subject Name Class format Fxcluded from GPA Credits Instructor	Instructor	2024.10	Spring 2025.4	2025.10	2026.10			
						2025.3	2025.9	2026.9	2027.9	
	Seminar on Applied Chemistry and Life Science 1	Exercise	0	4	Supervisor	4	4			
Compulsory	Seminar on Applied Chemistry and Life Science 2	Exercise	0	1	Supervisor			1		
	Seminar on Interdisciplinary Research	Exercise		1				1		
Elective Required	Ethics for Researchers	Lecture		1		1				※ 1
	Advanced Chemical Technology	Lecture		2	A. Matsumoto T. Mizushima T. Oguchi K. Takashima	1				
	Advanced Ecological Engineering	Lecture		2	H. Daimon		1			
Elective	Advanced Biotechnology 1	Lecture		2	T. Eki T. Tanaka A. Nakabachi H. Kurita		1			
Elective	Advanced Biotechnology 2	Lecture		2	E. Yoshida Y. Hirose S. Yoshida	1				
	Advanced Molecular Function Chemistry 1	Lecture		2	K. Shibatomi N. Haraguchi		1			
	Advanced Molecular Function Chemistry 2	Lecture		2	Y. Saito R. Tero Y. Arakawa	1				
	j				ı	L	L		L	

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

Architecture and Civil Engineering (Doctoral Degree Program)

Doctoral Degree Program) 2024.10

(200to:u: .	Degree Program)									2024.10
	Subject Name					1st grade		2nd grade	3rd grade	
Compulsory		Class	Excluded			Fall Spring		grade	grade	
/ Elective		format	from GPA	Credits	Instructor	2024.10	2025.4	2025.10	2026.10	note
						2025.3	2025.9	2026.9	2027.9	
	Seminar on Architecture and Civil Engineering 1	Exercise	0	4	Supervisor	2	1			
Compulsory	Seminar on Architecture and Civil Engineering 2	Exercise	0	1	Supervisor			1		
	Seminar on Interdisciplinary Research	Exercise		1				1		
Elective Required	Ethics for Researchers	Lecture		1		1				<u></u> *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	D. Fujita	1				
Elective	Sustainable Urban Planning	Lecture		2	J. Asano H. Ono	1				
	Advanced Geologic Hazard Mitigation Planning	Lecture		2	T. Matsuda	1				
	Advanced Water Environmental Engineering	Lecture		2	T. Inoue S. Kato	1				
	Advanced Environmental Management	Lecture		2	K. Yokota T. Tokairin		1			
	Advanced Transportation Systems and Economics	Lecture		2	H. Shibusawa N. Sugiki K. Matsuo H.Miyamoto		1			

 $[\]begin{tabular}{ll} $\% 1$ Students who have obtained the credit of this subject during Master's program must take another subject among subject in the doctoral program and the credit of this subject during Master's program must take another subject among subject in the doctoral program and the credit of this subject during Master's program must take another subject among subject in the doctoral program and the credit of this subject during Master's program must take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject in the doctoral program and take another subject among subject and take another subject among subject among subject and take another subject among subject am$

Double Degree Program Course Requirement Guide Book

(October 2024)

International Doctoral Degree Program



Diploma Policy

Diploma Policy for Doctoral Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Doctor of Philosophy (Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider comprehensively the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment as a leader through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level leading engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical, creative and leading skills to understand and solve problems leveraging such knowledge in an integrated and progressive manner.

Computer Science and Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Computer Science and Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

d be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about computer science and engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving, understanding the methodology of research, creating original technology, and integrating all knowledges organically.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members. Have sophisticated ability as a leader to contribute for the achievement the goal of team.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and in the social environment

Have the skills to research the essence of changes in society, environment, and technology. Have the skills to voluntarily make plans and learn throughout one's life in response to changes in society, environment and technology.

I Requirements for completion

1. Requirements for completion

To complete the doctoral course, a student must participate in the course for three or more years, and must obtain the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a doctoral thesis, and must pass a review and final examination.

Classification	Required credits for completion	Remarks
Computer Science and Engineering	12	

For students in the Double Degree Program, up to 15 credits that the students had acquired at their home university before coming to TUT can be transferred to TUT Doctoral degree program only if TUT admits after being examined. Those 15 credits shall be determined by TUT's criteria. However, credit transfer for compulsory courses will not be accepted.

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the doctoral degree. Degree application and procedures for submission of a thesis for a doctoral degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisor.

The Course Schedule is provided at the beginning of each academic year. Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 2) A student cannot re-register for a subject for which credits are given.
- 3) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reason can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
- a) Illness (doctor's medical certificate must be submitted)
- b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

- ① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.
 - $S \cdots 90$ to 100 points
 - $A \cdots 80$ to 89 points
 - $B \cdots 70$ to 79 points
 - C···60 to 69 points
 - D···59 points or less

With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018. The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 points	Good—Excellent performance	Dage	3.0
В	70 to 79 points	Satisfactory—Generally sound performance	Pass	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)		Abandonment	0.0
K	-	Invalidated grade due to misconduct	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1)Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2)Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3)Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4)Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs

(5)Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)

③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the doctoral course at TUT for more than six years, counting from the enrollment at the home university.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid.

The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of the cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period *Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled.
- *All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of

suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.

- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure			
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly			
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly			
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.			

^{*}TUT may require suspension in order to prevent the spread of infection.

Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes in Doctoral program are only Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
T:	8:50 am-	10:30 am-	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
Time	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30 pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A School term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

Computer Science and Engineering (Double Doctoral Degree Program)

2024.10

							2nd	grade		3rd grade	
Compulsory	Subject Name	Class	Excluded from GPA	Credits	Instructor	Fall 1 Fall 2		Spring1 Spring2		grade	
/ Elective		format				202	4.10	202	25.4	2025.10	note
						202	- 25.3	202	- 25.9	2026.9	
0	Seminar on Computer Science and Engineering for DDDP	Exercise	0	5	Supervisor			<u>1</u> 5			
Compulsory	Seminar on Interdisciplinary Research	Exercise		1			1				
Elective Required	Ethics for Researchers	Lecture		1		1					※ 1
	Advanced Data Science and Analysis 1	Lecture		1	T. Akiba	1				(0.5)	
	Advanced Data Science and Analysis 2	Lecture		1	M. Dall'Arno		1			(0.5)	
	Advanced Robotic Perception and Human-Robot Interaction 1	Lecture		1	J. Miura	1				(0.5)	
	Advanced Robotic Perception and Human-Robot Interaction 2	Lecture		1	R. Ohmura		1			(0.5)	
	Advanced 3D Vision Computation 1	Lecture		1	Y. Kanazawa	1				(0.5)	
	Advanced 3D Vision Computation 2	Lecture		1	Y. Sugaya		1			(0.5)	
	Advanced Molecular Simulation 1	Lecture		1	N. Kurita					0.5	
Elective	Advanced Molecular Simulation 2	Lecture		1	H. Goto					0.5	
	Advanced Computational Intelligence in Brain System	Lecture		1	K. Murakoshi			1		(0.5)	
	Advanced Human Sensation and Perception 1	Lecture		1	S. Nakauchi	1				(0.5)	
	Advanced Human Sensation and Perception 2	Lecture		1	K. Koida		1			(0.5)	
	Information Security, Advanced	Lecture		1	K. Suzuki				1		
	Advanced Statistical Machine Learning Theory	Lecture		1	K. Watanabe					0.5	
	Advanced X Reality and Psychology 1	Lecture		1	M. Kitazaki	1				(0.5)	
	Advanced X Reality and Psychology 2	Lecture		1	T. Minami K. Uehara		1			(0.5)	

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

lack"0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

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

Course Requirement Guide Book (October 2024)

1. Global Rotation Program for Architecture and Civil Engineering Education Bridging ASEAN and African Countries

2. Program on Training University Teachers and Leaders for Architecture and Civil Engineering through Multi-Institutional Collaboration

International Master's Degree Program
International Doctoral Degree Program



International Master's Degree Program

Diploma Policy

Diploma Policy for Master's Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Master (of Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering, as well as liberal arts education; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical and creative skills to understand and solve problems leveraging such knowledge in an integrated manner.

Architecture and Civil Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Architecture and Civil Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as advanced-level engineers and researchersBe conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated manner

Have advanced knowledge about architecture and civil engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.

- (C1) Have the skills to voluntarily acquire theories and applied knowledge about architecture and civil engineering as well as related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about architecture and civil engineering as well as related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high-level skills to mutually respect the values of individual team member; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the skills to voluntarily make plans and learn throughout one's life in response to changes in society, environment and technology.

I Requirements for completion

1. Requirements for completion

To complete the master's course, a student must participate in the course for two or more years, and must acquire the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a master's thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

	Classification	Required credits for completion	Remarks
0	General subjects	6	
S	Specialized subjects		
	Architecture and Civil Engineering	24	6 credits in total can be substituted with a combination of the following options, with permission from the student's supervisor and the subject instructor. 1. Specialized master's subjects from the other departments 2. Specialized master's subjects held in Japanese (The same subject cannot be
G	Grand total	30	taken in both Japanese and English)

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the master's degree. Degree application and procedures for submission of a thesis for a master's degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisors.

The Course Schedule is provided at the beginning of each academic year.

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class Registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take specialized subjects given in other departments, or given in Japanese, students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department," before registering.
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject once credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware

that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reasons can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examinations include regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
 - a) Illness (doctor's medical certificate must be submitted)
- b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Educational Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.

S \cdots 90 to 100 points

A···80 to 89 points

 $B \cdots 70$ to 79 points

 $C \cdot \cdot \cdot \cdot 60$ to 69 points

D···59 points or less

With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018. The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point		
S	90 to 100 points	Excellent—Outstanding performance		4.0		
Α	80 to 89 points	Good—Excellent performance				
В	70 to 79 points	Satisfactory—Generally sound performance	Pass	2.0		
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0		
D	59 points or less	Failure	Failure	0.0		
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A		
Н	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)		Abandonment	0.0		
K	-	Invalidated grade due to misconduct etc.	Invalid	0.0		

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs

- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)
- ③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the master's course at the university for more than four years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid. The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting the approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or
		make-up classes
TUT		Emergency
website	0017794 ab 	information
	□ 10000000E2	(STORM
		WARNING etc.)
	https://kyomu.office.tut.ac.jp/mobile/Main.aspx	Canceled or
TUT	回旋線回	make-up classes
website for		Emergency
mobile		information
phones	国部分 数	(STORM
	*Mobile tagging by camera phones	WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled. All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.

- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure			
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly			
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly			
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.			

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes are divided into General Subjects and Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective Required subjects are the subjects that must be selected from among designated subject groups and taken at least a set number of subjects or credits.
- 3) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1 2 3		3	4	5	6
Time	8:50 am-	10:30 am-	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
Time	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A school term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

General subjects

2024.10

					C	lasses/Week			2021110
	Subject Name					grade	01	-	
Compulation							2nd		
Compulsory		Class	Excluded from GPA	Crodite	Fall 1 Fall 2	Spring 1 Spring 2	grade	Instructor	note
Elective	Subject Name	format	from GPA	Oreans	2024.10	2025.4	2025.10	mstructor	note
					2025.3	2025.9	2026.9		
Compulsory	Ethics for Researchers	Lecture		1	1		(0.5)		
	Culture and Communication I	Lecture		2	1		(1)	E. Ryan	
	Culture and Communication II	Lecture		2		1	(1)	E. Ryan	
Elective	Principles of Japanese Conversation	Lecture		2		1	(1)	Y. Muramatsu	
Liective	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)		X

[%]JICA Trainees have to register for the 2 subjects: "Japanese Life Today" and

[&]quot;Japanese Industrial Technologies and Innovations" and are required to earn these academic credits.

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

^{♦ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

Architecture and Civil Engineering (Master Degree Program)

Global Rotation Program for Architecture and Civil Engineering Education Bridging ASEAN and African Countries

2024.10

					iasses/vveek		j	l
l l				Classes/Week 1st grade		2nd grade		1
				Fall 1 Fall 2				
Subject Name	Class format	Excluded from GPA	Credits	•		2025 10	Instructor	note
			-	-				
Seminar on Architecture and Civil						2026.9		
Engineering I	Exercise	0	3	3	3		Supervisor	
Seminar on Architecture and Civil Engineering II	Exercise	0	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	0	6		9		Supervisor	
Elasticity and Stability	Lecture		2			1	Y. Matsumoto	
and Bar Structures	Lecture		2	1			S. Nakazawa	
Seismic Evaluation of Existing Buildings	Lecture		2		1	(1)	T. Matsui	
Seismic Design of Structures	Lecture		2	1		(1)	T. Saito	
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 building	Lecture		2		1		M. Tajima Y. Shimazaki	
Coastal Hydraulics	Lecture		2			1	S. Kato	
Water Environment Engineering	Lecture		2		1		T. Inoue	
Environmental Management	Lecture		2		1		T. Tokairin K. Yokota	
Advanced Urban Planning	Lecture		2			1	J. AsanoH. Ono	
Advanced Architectural Design	Lecture		2			1	D. Fujita	
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	
Computational Structural Design	Lecture		2		1		Y.Takiuchi	
Advanced Structural System Planning and Design I	Lecture		2	1		(1)	T. Saito S. Nakazawa	
Advanced Structural System Planning and Design II	Lecture		2		1	(1)	Y. Matsun Y. Matsumoto T. Matsuda	
Advanced Environmental System Planning and Design I	Lecture		2	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)	J. Asano H. Shibusawa D. Fujita	
Advanced Regional System Planning and Design II	Lecture		2		1		H. Ono N. Sugiki K. Matsuo	
	Seminar on Architecture and Civil Engineering I Seminar on Architecture and Civil Engineering II Problem-Based Learning Program A Theory and Practice of Architectural and Civil Engineer A Thesis Research on Architecture and Civil Engineering Elasticity and Stability Finite Element Method for Continua and Bar Structures Seismic Evaluation of Existing Buildings Seismic Design of Structures Geohazards Building Science: Indoor Air Quality and Ventilation Building science: Thermal Environment and vernacular building Coastal Hydraulics Water Environment Engineering Environmental Management Advanced Urban Planning Advanced Architectural Design Advanced Transportation and Urban Planning Advanced Transportation Engineering Computational Structural Design Wight Advanced Transportation Engineering Computational Structural Design Advanced Transportation Engineering Wadvanced Structural System Planning and Design II Wadvanced Environmental System Planning and Design II Wadvanced Environmental System Planning and Design II Wadvanced Regional System Planning and Design II Wadvanced Regional System Planning and Design II	Seminar on Architecture and Civil Engineering I Seminar on Architecture and Civil Engineering II Problem-Based Learning Program A Exercise Theory and Practice of Architectural and Civil Engineer A Lecture Thesis Research on Architecture and Civil Engineering Experiment Experiment Elasticity and Stability Lecture Finite Element Method for Continua and Bar Structures Seismic Evaluation of Existing Buildings Lecture Geohazards Lecture Geohazards Lecture Building Science: Indoor Air Quality and Ventilation Building science: Thermal Environment and vernacular building Science: Thermal Environment and vernacular building Coastal Hydraulics Lecture Environment Engineering Lecture Advanced Urban Planning Lecture Advanced Architectural Design Lecture Advanced Transportation and Urban Planning Advanced Transportation Engineering Lecture Engineering Lecture Advanced Transportation Engineering Lecture Example Engineering Enginee	Seminar on Architecture and Civil Engineering I Exercise O Seminar on Architecture and Civil Engineering II Exercise Interpretation of Architectural Engineering II Exercise Interpretation of I	Seminar on Architecture and Civil Engineering I Seminar on Architecture and Civil Engineering II Exercise O 3 Seminar on Architecture and Civil Engineering II Exercise I 1 Theory and Practice of Architectural and Civil Engineer A Lecture I 1 Thesis Research on Architecture and Civil Engineer A Lecture I 1 Thesis Research on Architecture and Civil Engineering Experiment O 6 Experiment O 6 Experiment Method for Continua and Bar Structures Lecture I 2 Seismic Evaluation of Existing Eliasticity and Stability Lecture I 2 Experiment Evaluation of Existing Eliasticity Evaluation Evalu	Seminar on Architecture and Civil Engineering I Exercise O 3 Exercise D 1 D 1 D 1 D 1 D 1 D 1 D 1 D 1 D 1 D	Seminar on Architecture and Civil Engineering I Problem-Based Learning Program A Theory and Practice of Architectural and Civil Engineer A Theory and Practice of Architectural and Civil Engineer A Thesis Research on Architecture Experiment Civil Engineering Elasticity and Stability Lecture Experiment Elasticity and Stability Experiment Elasticity and Stability Experiment Elasticity and Experiment Experiment Elasticity and Experiment Elasticity and Experiment Experiment Elasticity and Experiment Experiment Elasticity and Experiment Elasticity and Experiment Experiment Experiment Elasticity and Experiment Experiment Experiment Experiment Experiment Experiment Experiment Experiment Experim	Seminar on Architecture and Civil Exercise O 3 3 3 3 3 3 3 3 3	Seminar on Architecture and Civil Engineering Exercise O 3 3 3 5 5 5 5 5 5 5

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

 $[\]ensuremath{\blacklozenge}$ Those subjects whose numbers marked with "()" will be held every year.

Architecture and Civil Engineering (Master Degree Program)

Program on Training University Teachers and Leaders for Architecture and Civil Engineering through Multi-Institutional Collaboration

2024.10 Classes/Week 1st grade 2nd grade Compulsory Spring 1 Spring 2 Fall 1 Fall 2 Class Excluded Subject Name Credits Instructor note format from GPA 2024.10 2025.4 2025.10 Elective 2025.3 2025.9 2026.9 Seminar on Architecture and Civil 3 Exercise 0 3 Supervisor Engineering I Seminar on Architecture and Civil Exercise 3 3 0 Supervisor Engineering II Compulsory Problem-Based Learning Program A Exercise 1 1 Supervisor Theory and Practice of Architectural Lecture H. Ono 1 1 and Civil Engineer A Thesis Research on Architecture 9 Experimen 6 Supervisor and Civil Engineering Elasticity and Stability Lecture 2 1 Y. Matsumoto Finite Element Method for Continua 2 S. Nakazawa Lecture 1 and Bar Structures Seismic Evaluation of Existing 2 1 T. Matsui Lecture (1) Buildings Seismic Design of Structures Lecture 2 1 (1) T. Saito 2 T Matsuda Geohazards Lecture 1 Building Science: Indoor Air Quality M. Tajima 2 Lecture 1 and Ventilation Y. Shimazaki Building science: Thermal M. Tajima Environment and vernacular 2 1 Lecture Y Shimazaki building Coastal Hydraulics Lecture 2 1 S. Kato 2 T. Inoue Water Environment Engineering Lecture 1 T. Tokairin **Environmental Management** Lecture 2 1 K. Yokota Advanced Urban Planning Lecture 2 1 J. AsanoH. Ono Advanced Architectural Design 2 D. Fujita Lecture 1 Advanced Transportation and Urban Lecture 2 1 N. Sugiki Planning Advanced Computational Elective Lecture 2 1 H. Shibusawa **Economics** Advanced Transportation 2 1 K. Matsuo Lecture Engineering Computational Structural Design Lecture 2 1 Y.Takiuchi Practical intensive Institutional Collaboration Program 1 Supervisor training lecture Advanced Structural System T. Saito Lecture 1 (1) Planning and Design I S. Nakazawa T. Matsui Y. Matsumoto Advanced Structural System Lecture 2 (1) T. Matsuda Planning and Design II M. Tajima ※ Advanced Environmental System 2 Lecture 1 (1)T. Inoue Planning and Design I S. Kato Y. Shimazaki X Advanced Environmental System K. Yokota 2 Lecture 1 (1)Planning and Design II T. Tokairin J. Asano * Advanced Regional System Lecture 2 1 (1) H. Shibusawa Planning and Design I D. Fujita H. Ono * Advanced Regional System N. Sugiki Lecture 2 Planning and Design II 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.

International Doctoral Degree Program

Diploma Policy

Diploma Policy for Doctoral Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Doctor of Philosophy (Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider comprehensively the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment as a leader through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level leading engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical, creative and leading skills to understand and solve problems leveraging such knowledge in an integrated and progressive manner.

Architecture and Civil Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Architecture and Civil Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare with a wide view.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as leading -level engineers and researchers; and have the ability to discover, set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about architecture and civil engineering as well as related fields; and have the practical and creative skills to utilize such knowledge for problem solving, understanding the methodology of research, creating original technology, and integrating all knowledges organically.

(D) Communication skills for global success

Have the communication skills to effectively express and transmit one's own ideas and results while working on the issues faced by a globally changing society in cooperation with other team members.

Have sophisticated ability as a leader to contribute for the achievement the goal of team.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the skills to investigate the essence of changes in society, environment and technology. Have the skills to voluntarily make plans and learn throughout one's life.

I Requirements for completion

1. Requirements for completion

To complete the doctoral course, a student must participate in the course for three or more years, and must obtain the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a doctoral thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

Classification		Required credits for completion	Remarks				
	Architecture and Civil Engineering	12	4 credits in total can be substituted with a combination of the following options, with permission from the student's supervisor and the subject instructor.				
			Specialized subjects from International Master's Degree Program (except for Advanced subjects)				
			Subjects of the other departments from International Doctoral Degree Program				
			Subjects from doctoral program of student's own department held in Japanese				
			(The same subject cannot be taken in both Japanese and English)				

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the doctoral degree. Degree application and procedures for submission of a thesis for a doctoral degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisor.

The Course Schedule is provided at the beginning of each academic year. Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take Specialized subjects from International Master's Degree Program (except for Advanced topics subjects), subjects from your own department held in Japanese, or other department's subjects from International Doctoral Degree Program, Students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department".
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject for which credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application

period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reason can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
- a) Illness (doctor's medical certificate must be submitted)
- b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.

S···90 to 100 points

 $A \cdot \cdot \cdot 80$ to 89 points

B···70 to 79 points

C···60 to 69 points

D···59 points or less

With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018. The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 points	Good—Excellent performance	Pass	3.0
В	70 to 79 points	Satisfactory—Generally sound performance	PdSS	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	-	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)	Abandonment	0.0
K	-	Invalidated grade due to misconduct	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer,

readmission, or studying abroad, and were subsequently recognized

- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs
- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)
- ③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the doctoral course at the university for more than six years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid.

The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of the cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the

university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	information	
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled.
- *All cancelled classes and examinations will be rescheduled. Cancelled classes will be

held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.

- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.
- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure			
Illness/Injury	Medical certificate or medical expense receipts	Students inform lecturers directly			
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly			
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly			

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

• The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes in Doctoral program are only Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time	8:50 am-	10:30 am- 12:00	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
Time	10:20 am	(noon)	2:30 pm	4:10 pm	5:50 pm	7:30 pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A School term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

Architecture and Civil Engineering (Doctoral Degree Program)

Advanced Transportation Systems and

Global Rotation Program for Architecture and Civil Engineering Education Bridging ASEAN and African Countries 2024.10 1st grade 2nd 3rd grade grade Compulsory Fall Spring Class Excluded Subject Name Credits Instructor note format from GPA 2024.10 2025.4 2025.10 2026.10 Elective 2025.3 2025.9 2026.9 2027.9 Seminar on Architecture and Civil Exercise 0 4 Supervisor 4 Engineering 1 Seminar on Architecture and Civil Exercise 0 Supervisor 1 Engineering 2 Problem-Based Learning Program B Exercise 1 Supervisor Compulsory Theory and Practice of Architectural and H. Ono 1 Lecture 1 Civil Éngineer B Teaching Practice on Global Education Exercise 0 1 Supervisor Intensive lecture Practical Intensive 0 Supervisor Japanese Industrial Internship Program 1 training lecture Elective Ethics for Researchers Lecture Required Seminar on Interdisciplinary Research Exercise 1 1 Advanced Mechanics and Design of S. Nakazawa Lecture 2 1 Y. Matsumoto Spatial Structure Systems T. Saito Advanced Structural Design 2 1 Lecture T. Matsui Advanced Building Environmental M. Tajima 2 Lecture 1 Y Shimazaki Engineering and Building Services Advanced Theory in Architectural Design Lecture 2 D. Fujita Elective J. Asano 1 Sustainable Urban Planning Lecture 2 H. Ono Advanced Geologic Hazard Mitigation Lecture 2 T. Matsuda 1 Planning Advanced Water Environmental T. Inoue Lecture 2 Engineering S. Kato K. Yokota Advanced Environmental Management Lecture 2 1 T. Tokairin

2

Lecture

H. Shibusawa

1

N. Sugiki

K. Matsuo H.Mivamoto

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

Architecture and Civil Engineering (Doctoral Degree Program)
Program on Training University Teachers and Leaders for Architecture and Civil Engineering through Multi-Institutional Collaboration 2024.10

g - x	Training Oniversity reachers and Le				 					2024.10
Compulsory	Subject Name	Class format	Excluded from GPA		Instructor	1st grade		2nd grade	3rd grade	
						Fall	Spring	3	3	note
Elective						2024.10	2025.4	2025.10	2026.10	
						2025.3	2025.9	2026.9	2027.9	
	Seminar on Architecture and Civil Engineering 1	Exercise	0	4	Supervisor	4				
	Seminar on Architecture and Civil Engineering 2	Exercise	0	1	Supervisor			1		
Compulsory	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	0	1	Supervisor	Intensive lecture				
Elective Required	Ethics for Researchers	Lecture		1		1				<u></u> *1
	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	D. Fujita	1				
Elective	Sustainable Urban Planning	Lecture		2	J. Asano H. Ono	1				
	Advanced Geologic Hazard Mitigation Planning	Lecture		2	T. Matsuda	1				
	Advanced Water Environmental Engineering	Lecture		2	T. Inoue S. Kato	1				
	Advanced Environmental Management	Lecture		2	K. Yokota T. Tokairin		1			
	Advanced Transportation Systems and Economics	Lecture		2	H. Shibusawa N. Sugiki K. Matsuo H.Miyamoto		1			
	Advanced Institutional Collaboration Program	Practical training	0	1	Supervisor			Intensive lecture		
	-									

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

Course Requirement Guide Book

(October 2024)

Educational Program for Digital-Mechanical Engineers Promoting Industry DX (M-DX)

International Master's Degree Program
International Doctoral Degree Program



International Master's Degree Program

Diploma Policy

Diploma Policy for Master's Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Master (of Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering, as well as liberal arts education; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical and creative skills to understand and solve problems leveraging such knowledge in an integrated manner.

Mechanical Engineering

In accordance with the diploma policy for Master's Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Master (of Engineering)" to the students who have received specialized education from the Department of Mechanical Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a master's degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as advanced-level engineers and researchersBe conscious of specialized and ethical responsibilities as advanced-level engineers and researchers; and have the ability to set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated manner

Have advanced knowledge about mechanical engineering and related fields; and have the practical and creative skills to utilize such knowledge for problem solving in an integrated manner.

- (C1) Have the skills to voluntarily acquire theories and applied knowledge about mechanical engineering and related fields; and to utilize such knowledge in an integrated manner.
- (C2) Have the skills to learn, by experience, methodologies for research and development through integrating extensive knowledge about mechanical engineering and related fields; to make plans for research and development and put them into practice; and to create new technologies to solve problems.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members.

- (D1) Have the skills to effectively express and communicate one's own ideas as well as points in question at home and abroad through papers, oral reports or information media.
- (D2) Have high skills to mutually respect the values of individual team members; and to contribute to the team's achievements through working cooperatively with other team members.

(E) Inquisitive outlook and skills for continuous learning in response to state-of-the-art technology and changes in the social environment

Have the skills to voluntarily make plans and learn throughout one's life in response to changes in society, environment and technology.

I Requirements for completion

1. Requirements for completion

To complete the master's course, a student must participate in the course for two or more years, and must acquire the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a master's thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

Classification		Required credits for completion	Remarks			
General subjects		6				
S	Specialized subjects					
	Mechanical Engineering	24	6 credits in total can be substituted with a combination of the following options, with permission from the student's supervisor and the subject instructor. 1. Specialized master's subjects from the other departments 2. Specialized master's subjects held in Japanese (The same subject cannot be			
Grand total		30	taken in both Japanese and English)			

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the master's degree. Degree application and procedures for submission of a thesis for a master's degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisors.

The Course Schedule is provided at the beginning of each academic year.

Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class Registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take specialized subjects given in other departments, or given in Japanese, students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department," before registering.
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject once credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware

that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reasons can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examinations include regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
 - a) Illness (doctor's medical certificate must be submitted)
 - b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Educational Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

- ① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.
 - S \cdots 90 to 100 points
 - $A \cdots 80$ to 89 points
 - B···70 to 79 points
 - C···60 to 69 points
 - D···59 points or less

With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018. The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

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Α	80 to 89 points	Good—Excellent performance	Pass	3.0
В	70 to 79 points	Satisfactory—Generally sound performance	Pass	2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	Failure	Failure	0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	- Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)		Abandonment	0.0
K	-	Invalidated grade due to misconduct etc.	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized
- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs

- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)
- ③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the master's course at the university for more than four years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid. The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting the approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or
	回機器補回	make-up classes
TUT		Emergency
website		information
		(STORM
		WARNING etc.)
	https://kyomu.office.tut.ac.jp/mobile/Main.aspx	Canceled or
TUT	回旋線回	make-up classes
website for		Emergency
mobile		information
phones	⊞3e412%	(STORM
	*Mobile tagging by camera phones	WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled. All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.
- 6) If cancelled classes cannot be held on YOBIBI (optional extra day), and final exams,

on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.

7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure
Illness/Injury Medical certificate or medi expense receipts		Students inform lecturers directly
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes are divided into General Subjects and Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective Required subjects are the subjects that must be selected from among designated subject groups and taken at least a set number of subjects or credits.
- 3) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time	8:50 am-	10:30 am-	1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-
Tille	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A school term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

General subjects

2024.10

					C	lasses/Week			2021110
						grade	01	-	
Compulation							2nd	Instructor	
Compulsory	Subject Name	Class	Excluded from GPA	Crodite	Fall 1 Fall 2	Spring 1 Spring 2	grade		note
Elective	Subject Name	format	from GPA	Oreans	2024.10	2025.4	2025.10	mstructor	note
					2025.3	2025.9	2026.9		
Compulsory	Ethics for Researchers	Lecture		1	1		(0.5)		
	Culture and Communication I	Lecture		2	1		(1)	E. Ryan	
	Culture and Communication II	Lecture		2		1	(1)	E. Ryan	
Elective	Principles of Japanese Conversation	Lecture		2		1	(1)	Y. Muramatsu	
Liective	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)		X

[%]JICA Trainees have to register for the 2 subjects: "Japanese Life Today" and

- ◆ Those subjects whose numbers marked with "()" will be held every year.
- ♦ "0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

[&]quot;Japanese Industrial Technologies and Innovations" and are required to earn these academic credits.

Education	al Program for Digital-Mechanica	I Enginee	rs Promo	ting Ind				T	2024.
						Classes/Week		+	
Compulsory		CI -	E		Fall 1 Fall 2	grade Spring 1 Spring 2	2nd grade	,	
/ Elective	Subject Name	Class format	Excluded from GPA	Credits	·		0005 10	Instructor	note
Elective					2024.10	2025.4	2025.10		
					2025.3	2025.9	2026.9		
	Seminar on Mechanical Engineering I	Exercise	0	4		4		Supervisor	
	Seminar on Mechanical Engineering II	Exercise	0	2				Supervisor	
	Thesis Research on Mechanical Engineering	Experiment	0	6		9		Supervisor	
Compulsory	Japanese Industrial Internship Program	Practical	0	1			Intensive	Supervisor	
	Data Science Exercise	training Exercise	0	1	1		lecture	M. Nagai	
			0	1	1			Y. Nakamura M. Nagai	
	Advanced Data Science Exercise	Exercise	U		1			Y. Nakamura	
	Applied Mechanics of Materials	Lecture		1		1		T. Adachi	
	Micromachining Engineering	Lecture		1			0.5	T. Shibata	
	Microsystems Engineering	Lecture		1			0.5	M. Nagai	
	Microstructural Control of Metallic Materials	Lecture		1			0.5	H. Miura	
	Microstructure and Properties of Structural Materials	Lecture		1		1		Y. Todaka	
	Advanced Characterization in Materials	Lecture		1	1			M. Kobayashi	
	Modern Control Engineering	Lecture		1			0.5	K.Takagi	
							0.5		
	Precision Mechatronics	Lecture		1		1		K. Sato	
	Robot Kinematics	Lecture		1	1			N. Uchiyama	
	Advanced Agricultural Engineering	Lecture		1			0.5	K. Takayama	
	Advanced Aeroacoustics	Lecture		1	1			A. lida	
	Combustion Theory	Lecture		1			0.5	Y. Nakamura	
	Microscale Transport Phenomena	Lecture		1	1			K. Doi	
	Advanced Fluid and Energy			1	1				
	Engineering	Lecture						H. Yokoyama T. Shibata	
	*Advanced Mechanical Systems	Lecture		2	1		(1)	M. Nagai S. Kawamura	
	Design I	2001010		_			()	T. Adachi Y. Takeichi	
						<u> </u>		T. Shibata	
	Advanced Mechanical Systems Design II	Lecture		2		1	(1)	M. Nagai S. Kawamura	
Elective	Design II							T. Adachi Y. Takeichi	
Licotive								Y. Todaka H. Miura	
	*Advanced Materials and	Lecture		2	1		(1)	M. Kobayashi T. Yasui	
	Manufacturing Process I	2001010		_			(.,	Y. Abe N. Adachi	
								Y. Oba Y. Todaka	
								H. Miura	
	Advanced Materials and Manufacturing Process II	Lecture		2		1	(1)	M. Kobayashi T. Yasui	
	3							Y. Abe N. Adachi	
								Y. Oba K. Sato	
	*Advanced System, Control and	Lecture		2	1		(4)	S. Sano K. Takayama	
	Robotics I	Lecture		2	'		(1)	N. Uchiyama K. Takagi	
					<u> </u>			J. Takahashi K. Sato	
	*Advanced System, Control and							S. Sano K. Takayama	
	Robotics II	Lecture		2		1	(1)	N. Uchiyama	
								K. Takagi J. Takahashi	
								Y. Nakamura T. Matsuoka	
	*Advanced Energy and Environmental	Lecture		2	1		(1)	K. Doi T. Suzuki	
	Engineering I							A. lida N. Sekishita	
					:			H. Yokoyama Y. Nakamura	
								T. Matsuoka K. Doi	
	Advanced Energy and Environmental Engineering II	Lecture		2		1	(1)	T. Suzuki	
								A. lida N. Sekishita	
	◆ Up to two subjects marked with ※ car	<u> </u>				0	<u> </u>	H. Yokoyama	

[◆] 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.

^{♦ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).

International Doctoral Degree Program

Diploma Policy

Diploma Policy for Doctoral Degree Program in Graduate School of Engineering

With a view to develop talented people in accordance with the basic philosophy and educational objectives, Toyohashi University of Technology (TUT) grants a degree of "Doctor of Philosophy (Engineering)" to students who have received specialized education in the engineering field, including Mechanical Engineering, Electrical and Electronic Information Engineering, Computer Science and Engineering, Applied Chemistry and Life Science and Architecture and Civil Engineering; acquired the knowledge and abilities stated in 1 to 4 below; and fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

- 1. Keep an international mindset to see things from various angles with a global perspective and have a wide range of knowledge to consider comprehensively the symbiosis between humans and nature as well as linkage with society.
- 2. Have a high ability to contribute to team's goal attainment as a leader through effectively expressing and sending out one's own ideas, points in question and research results; deeply understanding others' values; and working together with various people.
- 3. Have social and ethical responsibilities as advanced-level leading engineers or researchers; and have the ability to voluntarily learn new things continuously in response to changes in society, environment, technology, etc.
- 4. Acquire advanced knowledge on an expertise in the fields of natural science and technological science; and have the practical, creative and leading skills to understand and solve problems leveraging such knowledge in an integrated and progressive manner.

Mechanical Engineering

In accordance with the diploma policy for Doctoral Degree Program in Graduate School of Engineering at Toyohashi University of Technology (TUT), Toyohashi University of Technology grants a degree of "Doctor of Philosophy (Engineering)" to the students who have received specialized education from the Department of Mechanical Engineering; have the knowledge and abilities stated below; and have fulfilled the requirements for graduation and degree granting set forth in TUT's regulations, etc. Those who achieved outstanding academic performance may be authorized to shorten the period of enrollment and be granted a Doctoral degree.

(A) Personality and outlook with a broad perspective

Have an international mindset to see human society from various angles with a global perspective; and the ability to consider the symbiosis between humans and nature as well as public welfare.

(B) Sound ethics and social awareness as highly advanced-level engineers and researchers

Be conscious of specialized and ethical responsibilities as highly advanced-level engineers and researchers; and have the ability to discover, set, solve and evaluate technical issues in society.

(C) Practical and creative skills to utilize advanced knowledge in an integrated and constructive manner

Have advanced knowledge about mechanical engineering and related fields, and have ability to create and practice original techniques for problem solving by acquiring the research and development methodology that combines such knowledge in an extensive and organic manner.

(D) Communication skills for global success

Have the communication skills to effectively express one's own ideas and results while working on issues faced by a globally changing society in cooperation with other team members, and the high ability to contribute to the goals of the team as a leader.

(E) Inquisitive outlook and skills for continuous learning in response to

state-of-the-art technology and changes in the social environment Have the skills to investigate the nature of change in society, environment and technology, and voluntarily make plans and learn throughout one's life.

I Requirements for completion

1. Requirements for completion

To complete the doctoral course, a student must participate in the course for three or more years, and must obtain the minimum credits required as follows. A student must carry out a research program under proper guidance by faculty members. In addition, a student must submit a doctoral thesis, and must pass a review and final examination.

Note that students showing excellent achievement may finish in a shorter study period.

Classification	Required credits for completion	Remarks
Mechanical Engineering	12	4 credits in total can be substituted with a combination of the following options, with permission from the student's supervisor and the subject instructor. 1. Specialized subjects from International Master's Degree Program (except for Advanced subjects) 2. Subjects of the other departments from International Doctoral Degree Program 3. Subjects from doctoral program of student's own department held in Japanese (The same subject cannot be
		taken in both Japanese and English)

2. Application for degree

Only a student who has earned the credits required for completion, or who is expected to earn the required credits can apply for the doctoral degree. Degree application and procedures for submission of a thesis for a doctoral degree shall be posted at "KYOMU JOHO SYSTEM" and on a bulletin board before the submission period.

II Class registration, examination, and attendance period

1. Class registration method

Classes shall be registered according to the program schedule of the student's respective major.

(1) Making study plans

To make study plans, students should read this Guide Book thoroughly, and follow the instructions and advice given during the orientation and by the supervisor.

The Course Schedule is provided at the beginning of each academic year. Schedules for intensive classes will be posted at "KYOMU JOHO SYSTEM" and on a bulletin board when the details are fixed.

(2) Class registration

Students must register for classes using "KYOMU JOHO SYSTEM" at the TUT website https://kyomu.office.tut.ac.jp/portal/

or by the form "Application for Subjects" during the designated period.

*Classes cannot be registered for after the designated registration period. Classes with no registration will not be accredited in any case.

NOTES

- 1) To take Specialized subjects from International Master's Degree Program (except for Advanced topics subjects), subjects from your own department held in Japanese, or other department's subjects from International Doctoral Degree Program, Students must obtain approval from their supervisor and the subject instructor with the form "Application for Registration of Subjects in Other Department".
- 2) If a student does not attend the classes nor take the examinations, credits will not be given even if the registration is made.
- 3) A student cannot re-register for a subject for which credits are given.
- 4) Only one subject can be registered for in a given time schedule. Note that this does not apply to intensive subjects.

(3) Confirming and amending the registration

To confirm or amend class registration, students should access "KYOMU JOHO SYSTEM", and follow the manual's instructions.

(4) Class Cancellation

After the end of the course registration period for each semester, students can cancel classes if students find it difficult to earn credits as it is. If students wish to cancel classes, apply for cancellation using "KYOMU JOHO SYSTEM" during the class cancellation application period of each semester.

Only electives and required electives classes can be canceled. However, intensive classes are excluded. Only class cancellation is possible during the class cancellation application

period. Registration of additional courses is not accepted.

If students continue to miss the class or do not take an examination without cancelling the registration, the class will be considered grade "H"(Abandoned course). Please be aware that grade "H" course will have a large impact on your GPA.

(5) Repeating classes

In principle, a student who has failed a subject with regular examinations or has not gained credits for some other reason can take the same subject again in the next academic year. To repeat a subject, the student must register again.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

In principle regular examinations shall be held during the set period at the end of each term.

All students are to check the examination schedule in the academic calendar at "KYOMU JOHO SYSTEM" or on the bulletin boards. Note that examinations may be held at any time found necessary by the subject instructor.

(2) Make-up examination

- 1) Make-up examinations shall be held only when a student cannot take the regular examination for one of the following reasons. The student must gain the approval of the subject instructor using the form "Request for a make-up examination".
- a) Illness (doctor's medical certificate must be submitted)
- b) Accidents, disaster (certificate must be submitted), or other special reason (a letter explaining the reason must be submitted)
- 2) When a student cannot take the regular examination, the student has to contact the Educational Affairs Division and the course instructor by the day of the examination.
- 3) "Request for a make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of the regular examination. In case of Spring semester, if one week from the final examination date is Saturday, Sunday, or holiday, a student must submit the document by the following day.
- 4) If a student fails to take the make-up examination, further examinations will not be allowed.

(3) Recognition of Credits and Grading System

Course instructors recognize credits for courses based on the results of examinations, etc.

① Student performance is graded based on the following standards. S, A, B and C are passing grades while D is a failing grade. Credits are awarded to grade C and above.

S···90 to 100 points

A···80 to 89 points

B···70 to 79 points

C···60 to 69 points

D···59 points or less

With the aim of making course grades internationally compatible, TUT has launched a Grade Point Average (GPA) system, providing a barometer to judge the overall performance of students, starting with students who entered TUT in academic year 2018. The objectives of the GPA system are to fairly grade performance and to enhance students' desire for study by calculating the point average as a barometer to indicate the state and results of students' academic performance.

Grade	Points	Description of Grade	Judgement	Grade Point
S	90 to 100 points	Excellent—Outstanding performance		4.0
Α	80 to 89 points	Good—Excellent performance	Pass	3.0
В	70 to 79 points	Satisfactory—Generally sound performance		2.0
С	60 to 69 points	Sufficient—Performance meeting the minimum passing criteria		1.0
D	59 points or less	· I Fallife		0.0
N	-	Course for credit recognition (not included in GPA)	Pass (Recognition)	N/A
Н	Abandoned course (Course the student abandoned by continuing to miss the class or no taking an examination without cancelling the registration)		Abandonment	0.0
K	-	Invalidated grade due to misconduct	Invalid	0.0

GPA is an average calculated by converting above letter grades to grade points (GP) ranging from 0.0 to 4.0, multiplying these grade points by the number of credits for each course, and then dividing the total grade points by the total amount of registered credits.

Note, however, that grades from the following courses cannot be used to calculate GPA. Such courses are marked with a hyphen in the GP column of the grade report.

- (1) Courses for which credits were earned on the basis of the credit exchange system conducted with other universities, graduate schools, etc.; courses that were registered at other universities or junior colleges while enrolled in TUT; and courses that were registered at universities, junior colleges or graduate schools in foreign countries
- (2) Courses for which credits were earned before entering TUT and were recognized after entering TUT; courses that were registered at TUT, other universities or junior colleges before entering TUT; and courses registered at universities, junior colleges or graduate schools in foreign countries (including courses registered for as a credited auditor student)
- (3) Courses for which credits were earned through mid-course entry, interschool transfer, readmission, or studying abroad, and were subsequently recognized

- (4) Courses for which credits cannot be counted toward graduation requirements; and courses for which credits were earned through the system for advance registration to graduate school programs
- (5) Courses that are designated separately by each department (On-the-job Training (internships), Supervised Research, Seminars, experimental courses, and practical training courses)
- ③ Each student can check grades and GPA for recognized credits in the "KYOMU JOHO SYSTEM".

(4) System for appealing grades

Students who have concerns about their grades for a particular semester can inquire to the class instructor during the confirmation period. If students have complaints regarding the instructor's response, they can submit an appeal. Students, however, cannot appeal the reason or basis for the grade.

Students should contact the Educational Affairs Division for details.

3. Maximum years of attendance and related matters

(1) Maximum years of attendance

A student may not be in the doctoral course at the university for more than six years.

(2) Leave of absence

If a student cannot attend classes for two or more months consecutively due to illness or other special reasons, the student may submit the form "Request for leave of absence" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and their department head. Upon approval by the President, the student can take a leave of absence (maximum two years in total).

In order to submit the form "Request for leave of absence", the tuition fees up to the term must have been paid.

The period of this absence will not be counted in the "Maximum years of attendance" mentioned in paragraph (1) above.

To return to school after the approved period ends, the student must submit the form "Notice of return to university".

To return to school before the approved period following the removal of the cause of absence, the student must submit the form "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, the student must submit the form "Application for withdrawal from university" to the Educational Affairs Division after getting approval from the supervisor, a member of the academic affairs committee, and the department head. Upon approval by the President, the student can withdraw from the university.

In order to submit the form "Application for withdrawal from university", the tuition fees up to the term must have been paid.

Note that the tuition fee has to be paid in full even if the student withdraws in the middle of a term.

(4) Removal from the University

A student will be removed from the university for the following reason.

- 1) A student exceeds the period mentioned above in paragraph (1) "Maximum years of attendance".
- 2) A student cannot return to school after the period of absence mentioned above in paragraph (2) "Leave of absence".
- 3) A student dies, or disappears.
- 4) A student who has been approved for half exemption or postponement of admission fee payment does not pay the admission fee by the designated date.
- 5) A student fails to pay the tuition and does not pay even after a warning.

4. Other matters

(1) Information about canceled or make-up classes

All students should double-check their class schedules and other information using the following means:

	Location	information
TUT website	https://kyomu.office.tut.ac.jp/portal/Public/Board/BoardList.aspx	Canceled or make-up classes Emergency information (STORM WARNING etc.)
TUT website for mobile phones	https://kyomu.office.tut.ac.jp/mobile/Main.aspx *Mobile tagging by camera phones	Canceled or make-up classes Emergency information (STORM WARNING etc.)

(2) Classes/exams when a STORM WARNING is announced.

If a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or the South-east area of the Mikawa region, TUT will deal with classes or examinations as follows:

- 1) To prevent any accident, all classes will be canceled during the Storm Warning.
- 2) If the Storm Warning is cleared before 7:00 am, all classes will be on schedule.
- 3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes will start from the 3rd period. Classes in the 1st and 2nd period will be canceled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final exam term.
- 4) If the Storm Warning continues after 11:00 am, all classes will be canceled.
- *All cancelled classes and examinations will be rescheduled. Cancelled classes will be held on *YOBIBI* (optional extra day) and final exams will be held on *YOBIBI* for final

exam term.

- 5) Whether or not a storm warning is announced, classes may be canceled because of suspension of public transportation service or some similar occurrence, at the discretion of the Vice President for Educational Affairs.
- 6) If cancelled classes cannot be held on *YOBIBI* (optional extra day), and final exams, on the alternate exam day, a Saturday may be used as an alternate day for classes or exams.
- 7) The above shall not apply to remote classes.

(3) University's e-mail account

TUT strongly recommends all students to set up the e-mail forwarding service in order to receive important information of class-scheduling, grading and other communications from the university.

(4) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform these reasons to your subject instructor yourself.

Absences will be dealt with at the discretion of subject instructors.

Reasons for Absence	Documents you should submit	Procedure				
Illness/Injury Medical certificate or medical expense receipts		Students inform lecturers directly				
Bereavement leave	Letter or notice of funeral	Students inform lecturers directly				
Infectious diseases*	Medical certificate or medical expense receipts	Students inform the TUT Health Care Center (0532-44-6632) in addition to informing lecturers directly.				

^{*}TUT may require suspension in order to prevent the spread of infection. Suspension orders will be notified by email from TUT or KYOMU JOHO SYSTEM.

[•] The TUT Health Care Center (TEL: 0532-44-6632 E-mail: kenkou@office.tut.ac.jp)

III Curriculum

1. Classes and credits

(1) Classes

Classes in Doctoral program are only Specialized Subjects. Numbers of credits are set for each subject.

For the subjects to be offered, see the following pages. See the web syllabus for the details of each subject.

(2) Compulsory subjects and elective subjects

- 1) Compulsory subjects are the subjects that must be completed as a requirement of the major.
- 2) Elective subjects can be selected and taken from those subjects being offered for the designated numbers of credits.

(3) Calculating credits

Teaching types of classes are lectures, exercises, experiments, practical or hands-on training, and they are offered individually or in combinations, and the standard is that it takes 45 hours of study to earn one credit. This is calculated in the following ways.

- (a) For lectures, 15 hours of class time and 30 hours of preparation and review for one credit.
- (b) For exercises, 30 hours of class time and 15 hours of preparation and review for one credit.
- (c) For experiments, practical or hands-on training, 45 hours of class time for one credit.

(4) Class times and class schedule.

The following are the class times.

Period	1	2	3	4	5	6
Time 8:50 am 10:30 am		1:00 pm-	2:40 pm	4:20 pm-	6:00 pm-	
Time	10:20 am	12:00 (noon)	2:30 pm	4:10 pm	5:50 pm	7:30 pm

The class schedule is posted on "KYOMU JOHO SYSTEM" at the beginning of each semester. Notification of changes to the class schedule is also posted.

Courses listed in the "Intensive" section of the class schedule are ones that are taught intensively at irregular times. Once the dates of intensive courses are decided, the information is posted.

(5) School term

A School term is determined according to the academic year calendar, and consists of two terms; Spring term (from April 1 to September 30) and Fall term (from October 1 to March 31)

Mechanical Engineering (Doctoral Degree Program)

Educational Program for Digital-Mechanical Engineers Promoting Industry DX

2024.10

	nai Program for Digital-Mech	uou	l	3 1 10111		y D	<u>'</u>				2024.10
			Excluded			1st grade			2nd	3rd	
Compulsory		Class			la stanceto a	Fall		Spring	grade	grade	
Elective	Subject Name	format	from GPA		Instructor	202	4.10	2025.4	2025.10	2026.10	note
						202	- 25.3	2025.9	2026.9	2027.9	
	Advanced Seminar on Mechanical Engineering 1	Exercise	0	4	Supervisor	4					
	Advanced Seminar on Mechanical Engineering 2	Exercise	0	1	Supervisor				1		
	Seminar on Interdisciplinary Research	Exercise		1					1		
Compulsory	Japanese Industrial Internship Program	Practical training	0	1	Supervisor				Intensive lecture		
	Data Science Exercise	Exercise	0	1	M. Nagai Y. Nakamura	1					
	Advanced Data Science Exercise	Exercise	0	1	M. Nagai Y. Nakamura	1					
Elective Required	Ethics for Researchers	Lecture		1		1					
	Advanced Mechanical Systems	Lecture		2	S. Kawamura T. Adachi Y. Takeichi			1			
	Advanced Production Processes	Lecture		2	T. Shibata M. Nagai Y. Abe		1				
	Advanced Manufacturing Processes	Lecture		2	M. Kobayashi T. Yasui			1			
	Advanced Materials Science	Lecture		2	H. Miura Y. Todaka N. Adachi Y. Oba		1				
Elective	Advanced Mechatronics	Lecture		2	K. Sato K. Takagi S. Sano			1			
	Advanced Systems and Instrumentation Engineering	Lecture		2	N. Uchiyama K. Takayama J. Takahashi		1				
	Advanced Energy Engineering	Lecture		2	Y. Nakamura K. Doi T. Suzuki T. Matsuoka	K. Doi Γ. Suzuki		1			
	Advanced Environmental Engineering	Lecture		2	A. lida N. Sekishita H. Yokoyama		1				

^{♦ &}quot;0.5" signifies that this subject will be held in any one of a quarter term (Spring 1, Spring 2, Fall 1 or Fall 2).