Course Requirement Guide Book

（October 2014）

International Master's Degree Program

TOYOHASHI
UNIVERSITY OF TECHNOLOGY
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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 under a proper guidance by faculty members. Also a student must submit a master's thesis, and must pass the review and final examination.

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

<table>
<tr><th>Classification</th><th>Required credits for completion</th><th>Remarks</th></tr>
<tr><td>General subjects</td><td>6</td><td></td></tr>
<tr><td colspan="3">Specialized subjects</td></tr>
<tr><td>Mechanical Engineering</td><td>24</td><td rowspan="6">6 credits in total can be substituted with combination of following options, with permission from your supervisor.

1. Master's specialized subjects from other department
2. Master's specialized subjects held in Japanese
(You cannot choose a subject in Japanese if you already took the same subject held in English and vice versa)</td></tr>
<tr><td>Electrical and Electronic Information Engineering</td><td>24</td></tr>
<tr><td>Computer Science and Engineering</td><td>24</td></tr>
<tr><td>Environmental and Life Science</td><td>24</td></tr>
<tr><td>Architecture and Civil Engineering</td><td>24</td></tr>
<tr><td>Grand total</td><td>30</td></tr>
</table>

2. Application for degree

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

II Class registration, examination, attendance period

1. Class registration method

Classes shall be registered according to the program schedule of your respective major.

(1) Making your study plan

To make your study plan, you should read this Guide Book thoroughly, and follow the instructions and advices given during the orientation and from your supervisor.

Course Schedule is provided at the beginning of each academic year.
Schedule for intensive classes will be posted on a bulletin board when the details are fixed.

(2) Class Registration

The student must register the classes by Dream Campus through TUT website
https://www.ead.tut.ac.jp/portal/
or by "Application for Subjects" during the designated period.
*Classes cannot be registered nor withdrawn after the designated registration period. Those classes without registration will not be accredited in any case.

NOTES

1) To take specialized subjects given in other department, or given in Japanese, the student must obtain approval from his/her supervisor and the subject instructor with “Application for Registration of Subjects in Other Department,” before registering.
2) If the student does not attend the class nor take the examinations, credits will not be given even if the registration is made.
3) A student cannot re-register the subject once credits are given.
4) Subjects held at the same time schedule cannot be registered. Note that this does not apply for subjects being taken again for examinations only, or intensive subjects.

(3) Confirming and amending the registration

To confirm your class registration or to amend, you should access Dream Campus, and follow the manuals for how to use.

(4) Repeating classes

Basically, a student who has failed in a subject with regular examinations or some other reasons can take the same subject again in the next academic year. To repeat a subject, he/she must make registration again.

(5) Repeating classes by examination

When a subject instructor approves your credits by passing the examination without re-attending the classes, the student can register the subject with a sheet of “Application for Registration for Repeating Subjects (by Examination)".
*Only the subjects failed with “D” grade are eligible for this.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

Regular examination shall be held during the set period at the end of each term, as a principle.

All students are to check the examination schedule on the academic calendar through Dream Campus or bulletin board. Note that examination may be held at any time when found necessary by the subject instructor.

(2) Make-up examination

1) Make-up examination shall be held only when the student could not take the regular examination due to the following reasons. The student must gain the approval of the subject instructor with "Request for 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) "Request for make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of regular examination.

3) If a student fails to take the make-up examination, further examination will not be held.

(3) Approval of credits and evaluation

Credits are approved from the subject instructor.

1) Your grades are calculated according to the following basis.

Grade	Scores	Approval
A	Over 80	Units certified
B	65-79	Units certified
C	55-64	Units certified
D	Under 55	Units **NOT** certified

2) Results will be available on Dream Campus after the certain days of the examination.

3. Maximum years of attendance, etc.

(1) Maximum years of attendance

It is not allowed for a student to be in the master's course at the university exceeding four years.

(2) Leave of absence

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

The period of this absent will not be counted as the above "(1) Maximum years of attendance".

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

To return to school before the approved period ends due to the elimination of the reason, the student must submit "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, he/she must submit "Application for withdrawal from university" to Academic Affairs Division after getting the approval from his/her supervisor, member of academic affairs committee, and their department head. Upon approval from the President, the student can withdraw from the university.

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

(4) Elimination from University

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

1) When a student exceed the period mentioned in above "(1) Maximum years of attendance".

2) When a student cannot return to school after the period mentioned in above "(2) Leave of absence".

3) When a student dies, or is disappeared.

4) Those who have been approved for half exemption or postponement of admission fee payment and did not pay for the admission fee by the designated date.

5) Those who failed to pay for the tuition and did not pay for even after the warning.

4. Others

(1) Information about canceled or make-up classes

All students are requested to double-check their class schedules and other information with following tools:

Location		information
Lecture hall at 1st floor, A-bldg.	Central Bulletin Board (panel board)	Class schedule change
	Electronic Bulletin Board (LCD)	Canceled or make-up classes, rescheduled notices
	Glass-covered Bulletin Board	Others
TUT website	https://www.ead.tut.ac.jp/board/main.aspx	Canceled or make-up classes
TUT website for mobile phones	https://www.ead.tut.ac.jp/ Mobileboard/main.aspx *Mobile tagging by camera phones	Canceled or make-up classes

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

In case a Storm Warning (*Bo-fu Keiho*) is announced for Toyohashi city or South-east area of Mikawa region, TUT will conduct 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 are on schedule.
3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes start from 3rd period (*Classes of 1st and 2nd period will be canceled).
4) If the Storm Warning is still announced after 11:00 am, all classes will be canceled.

*All cancelled classes and examinations will be rescheduled.

(3) Information about RESCHEDULED CLASSES/EXAMS

Classes/exams canceled by natural disasters will be rescheduled on "YOBIBI"(an optional extra day). YOBIBI may also be used for makeup classes. Students may check the YOBIBI schedules two weeks before the dates on bulletin board at lecture hall, A-Bldg.

*YOBIBI will be used for rescheduling classes/exams cancelled by the storm warning etc., as a priority.
You must double check the information from TUT especially on unusual cases.

(4) University's e-mail account

TUT strongly recommend 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.

(5) Absence from classes

When you have to be absent from classes due to illness, bereavement or other reasons, you need to inform reasons to your subject instructor by yourself.
The way how your absence will be dealt with is depends on subject instructor.

Reasons of Absence	Certificate you should submit	Procedure
Illness/Injury	Medical certificate or medical expense receipts	Students inform directly to lecturers
Bereavement leave	Letter or notice of funeral	Students inform directly to lecturers
Infection diseases*	Medical certificate or Medical expense receipts	Students inform Student Affairs Division (0532-44-6553), TUT office staff will report to lecturers.

*TUT may admonish suspension in order to prevent spread infection. Suspension order will be posted on bulletin board at A-building.

III Curriculum

1. Classes and credits

(1) Classes

Your 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 detail of each subject.

(2) Compulsory subjects and elective subjects

1) Compulsory subjects are the subjects that must be completed as the 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 lecture, exercise, experiment, practical or hands-on training, and they are offered individually or in combination among them. The class time for one credit is calculated under the following standards.

*Typical class in university is counted as 2 hours.

1) For lectures, one credit requires 15 hours of classes.
2) For exercises, one credit requires 30 hours of classes.
3) For experiments, practical or hands-on training, one credit requires 45 hours of classes.

(4) School term

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

General subjects

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week			Instructor	note
			1st grade		2nd grade		
			Fall	Spring			
			2014.10 - 2015. 3	2015. 4 - 2015. 9	2015.10 - 2016. 9		
Elective	Management Science	2		1	(1)	Y. Miyata T. Fujiwara	
	Industrial Policies	2		1		H. Shibusawa	
	Culture and Communication I	2		1		Undecided	
	Culture and Communication II	2			1		
	Japanese Life Today	2		1	(1)	Undecided	
	Intercultural Communication	2		1	(1)	Y. Muramatsu	

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

Mechanical Engineering

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week					Instructor	note
			1st grade				2nd grade		
			Fall 1	Fall 2	Spring 1	Spring 2			
			2014.10 - 2015. 3		2015. 4 - 2015. 9		2015.10 - 2016. 9		
Compulsory	Seminar on Mechanical Engineering I	4	4					Supervisor	
	Seminar on Mechanical Engineering II	2					2	Supervisor	
	Thesis Research on Mechanical Engineering	6	9					Supervisor	
Elective	Vibration Engineering	1					0.5	S. Kawamura	
	Deformation Processing Technology	1	1					K. Mori	
	Applied Mechanics of Materials	1			1			T. Adachi	
	Micromachining Engineering	1					0.5	T. Shibata	
	Joining and Surfacing of Materials	1					0.5	M. Fukumoto	
	Science and Technology of Thin Films	1				1		M. Izaki	
	Properties and Applications of Engineering Materials	1					0.5	H. Miura	
	Time-frequency Analysis and Wavelet Transform	1					0.5	Z. Zhang	
	Modeling and Analysis of Dynamical Control Systems	1					0.5	K. Terashima	
	High-Speed Mechanics and Optical Measurement	1				1		S. Suzuki	
	Applied Thermal Engineering	1	1					K. Kitamura	
	Advanced Applied Fluid Engineering	1					0.5	H. Yanada	
	Applied Combustion Engineering	1					0.5	S. Noda	
	Advanced Aeroacoustics	1	1					A. Iida	
	Advanced Mechanical Systems Design I	2	1				(1)	Supervisor	
	Advanced Mechanical Systems Design II	2			1		(1)	Supervisor	
	Advanced Materials and Manufacturing Process I	2	1				(1)	Supervisor	
	Advanced Materials and Manufacturing Process II	2			1		(1)	Supervisor	
	Advanced System, Control and Robotics I	2	1				(1)	Supervisor	
	Advanced System, Control and Robotics II	2			1		(1)	Supervisor	
	Advanced Energy and Environmental Engineering I	2	1				(1)	Supervisor	
	Advanced Energy and Environmental Engineering II	2			1		(1)	Supervisor	

◆ 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).

Electrical and Electronic Information Engineering

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week			Instructor	note
			1st grade		2nd grade		
			2014.10 - 2015. 3	2015. 4 - 2015. 9	2015.10 - 2016. 9		
Compulsory	Seminar on Electrical and Electronic Information Engineering	6	6			Supervisor	
	Thesis Research on Electrical and Electronic Information Engineering	6	9			Supervisor	
Elective	Material Science for Electronics 1	2	1			M. Fukuda Y. Nakamura H. Muto	
	Material Science for Electronics 2	2			1	M. Fukuda Y. Nakamura H. Muto	
	Physics for Electronics 1	2		1		A. Matsuda T. Hattori T. Ishiyama H. Takagi	
	Physics for Electronics 2	2			1	A. Matsuda T. Hattori T. Ishiyama H. Takagi	
	Electrical Energy Systems 1	2	1			M. Nagao H. Takikawa Y. Sakurai N. Hozumi	
	Electrical Energy Systems 2	2			1	M. Nagao H. Takikawa Y. Sakurai N. Hozumi	
	Electrical Technology and Materials 1	2		1		Y. Suda R. Inada Yo. Murakami	
	Electrical Technology and Materials 2	2			1	Y. Suda R. Inada Yo. Murakami	
	Semiconductor Physics 1	2	1			A. Wakahara A. Sandhu	
	Semiconductor Physics 2	2			1	H.Okada T. Kawano	
	LSI Process 1	2		1		K. Sawada Yu. Murakami	
	LSI Process 2	2			1	H. Sekiguchi K. Takahashi	
	Information and Communication Technology 1	2		1		T. Ohira H. Uehara	
	Information and Communication Technology 2	2			1	T. Ohira H. Uehara	
	Advanced Electronic Information System 1	2	1			S. Ichikawa M. Tamura	
	Advanced Electronic Information System 2	2			1	S. Ichikawa M. Tamura	
	Methodology of R & D 1	2	1		(1)	Supervisor	
	Methodology of R & D 2	2		1	(1)	Supervisor	

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

Computer Science and Engineering

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week					Instructor	note
			1st grade				2nd grade		
			Fall 1	Fall 2	Spring 1	Spring 2			
			2014.10 - 2015. 3		2015. 4 - 2015. 9		2015.10 - 2016. 9		
Compulsory	Seminar on Computer Science and Engineering I	4	4					Supervisor	
	Seminar on Computer Science and Engineering II	2					2	Supervisor	
	Thesis Research on Computer Science and Engineering	6	9					Supervisor	
Elective	System Design Project	2			3		(3)	Supervisor	
	Speech and Language Processing, Advanced	2			1		(1)	T. Akiba K. Yamamoto	
	Networking, Advanced 1	1					0.5	K. Umemura	
	Advanced Robotics and Informatics 1	1	1				(0.5)	J. Miura	
	Advanced Robotics and Informatics 2	1					0.5	M. Okada	
	Web Data Engineering 1	1			1		(0.5)	M. Aono	
	Web Data Engineering 2	1	1					S. Kuriyama	
	Computers and Education	2					1	K. Kawai	
	Image Processing, Advanced	2	1				(1)	Y. Kanazawa Y. Sugaya	
	Algorithm Engineering, Advanced	2	1					S. Masuyama	
	Computer Systems, Advanced	2					1	R. Kobayashi	
	Quantum Biology and Materials Science	2			1		(1)	H. Sekino N. Kurita H. Goto	
	Complex Systems and Intelligent Informatics 1	1	1				(0.5)	K. Murakoshi	
	Complex Systems and Intelligent Informatics 2	1		1			(0.5)	Y. Ishida	
	Advanced Chemoinformatics	2			1			Y. Takahashi H. Kato	
	Bio-physical Information Systems 1	1					0.5	N. Fukumura	
	Bio-physical Information Systems 2	1					0.5	J. Horikawa	
	Advanced Topics in Brain and Cognitive Sciences	2	1					S. Nakauchi M. Kitazaki	

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

Environmental and Life Sciences

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week					Instructor	note
			1st grade				2nd grade		
			Fall 1	Fall 2	Spring 1	Spring 2			
			2014.10 - 2015. 3		2015. 4 - 2015. 9		2015.10 - 2016. 9		
Compulsory	Seminar on Environmental and Life Science I	3	3					Supervisor	
	Seminar on Environmental and Life Science II	3					3	Supervisor	
	Thesis Research on Environmental and Life Science	6	9					Supervisor	
Elective	Advanced Separation Chemistry I	1	1				(0.5)	Y. Saito	
	Advanced Separation Chemistry II	1		1			(0.5)	Y. Hirata	
	Special Topics in Inorganic Chemistry	1		1				N. Kakuta	
	X-ray Spectroscopy for Catalytic Engineering	1				1		T. Mizushima	
	Applied Physical Chemistry I	1			1		(0.5)	A. Matsumoto	
	Applied Physical Chemistry II	1				1		A. Matsumoto	No class will be held on and after 2016
	Advanced Polymer Chemistry	1	1				(0.5)	S. Itsuno N. Haraguchi	
	Advanced Polymer Engineering	1		1				E. Yoshida	
	Special Topics in Applied Organic Chemistry	1			1		(0.5)	S. Iwasa K. Shibatomi	
	Developmental Neuroscience	1				1	(0.5)	S. Yoshida R. Numano	
	Advanced Molecular Life Science	1	1				(0.5)	T. Tanaka S. Umekage	
	Advanced Applied Biochemistry and Biotechnology	1		1			(0.5)	A. Hiraishi T. Eki	
	Advanced Electrical and Electronic Technology for Ecological Engineering	1			1		(0.5)	S. Tanaka A. Mizuno K. Takashima S. Ariyoshi	
	Advanced Biomaterials Engineering	1				1	(0.5)	H. Tsuji R. Tero	
	Advanced Reaction Engineering	1			1			T. Oguchi	
	Advanced Sustainable Coordinator	1				1	(0.5)	N. Goto T. Tokairin	
	Advanced Supercritical Fluid Engineering	1				1	(0.5)	H. Daimon	
	Applied Environmental Biology	1					(0.5)	A. Nakabachi	
	※ Advanced Life Science and Biotechnology I	2	1				(1)	Supervisor	
	※ Advanced Life Science and Biotechnology II	2			1		(1)	Supervisor	
	※ Advanced Environmental Technology I	2	1				(1)	Supervisor	
	※ Advanced Environmental Technology II	2			1		(1)	Supervisor	
	※ Advanced Environmental and Ecological Systems I	2	1				(1)	Supervisor	
	※ Advanced Environmental and Ecological Systems II	2			1		(1)	Supervisor	

※ Please ask your supervisor about class schedule of this subject

◆ 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).

Architecture and Civil Engineering

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week 1st grade 2014.10 - 2015. 3	Classes/Week 1st grade 2015. 4 - 2015. 9	Classes/Week 2nd 2015.10 - 2016. 9	Instructor	note
Compulsory	Seminar on Architecture and Civil Engineering I	3	3			Supervisor	
	Seminar on Architecture and Civil Engineering II	3			3	Supervisor	
	Thesis Research on Architecture and Civil Engineering	6	9			Supervisor	
Elective	Elasticity and Stability	2			1	Y. Matsumoto	
	Finite Element Method for Continua and Bar Structures	2	1			S. Nakazawa	
	Seismic Evaluation of Existing Buildings	2			1	T. Matsui	
	Seismic Design of Structures	2	1			T. Saito	
	Geotechnical Analysis	2	1			K. Miura	
	Building Science: Indoor Air Quality and Ventilation	2			1	H. Matsumoto	
	Building and Urban Thermal Environment	2		1		unknown	
	Coastal Hydraulics	2			1	S. Kato	
	Water Environment Engineering 1	2			1	K. Yokota	
	Water Environment Engineering 2	2		1		T. Inoue	
	Computer Applications in Urban Planning	2		1		unknown	
	Human Settlement: Its History and Theory	2			1	H. Izumida	
	Advanced Study on Housing System and Housing Policy	2		1		S. Matsushima	
	Advanced District Planning	2			1	J. Asano	
	Adavnced Architectual Planning	2		1		Y. Kakino	
	Modeling Regional Environment	2	1			Y. Miyata	
	Management of Technology	2	1			T. Fujiwara	
	Advanced Computational Economics	2			1	H. Shibusawa	
	※ Advanced Structural System Planning and Design I	2	1		(1)	Supervisor	
	※ Advanced Structural System Planning and Design II	2		1	(1)	Supervisor	
	※ Advanced Environmental System Planning and Design I	2	1		(1)	Supervisor	
	※ Advanced Environmental System Planning and Design II	2		1	(1)	Supervisor	
	※ Advanced Regional System Planning and Design I	2	1		(1)	Supervisor	
	※ Advanced Regional System Planning and Design II	2		1	(1)	Supervisor	

※ Please ask your supervisor about class schedule of this subject

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

Twinning Program

Double Degree Program

Course Requirement Guide Book

（October 2014）

International Master's Degree Program

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I Requirements for completion

1. Requirements for completion

To complete the master's course, a student must participate in the course for one or more years, and must acquire the minimum credits required as follows. A student must carry out a research under a proper guidance by faculty members. Also a student must submit a master's thesis, and must pass the 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	
Environmental and Life Science	24	
Architecture and Civil Engineering	24	
Grand total	30	

For students in the Twinning Program, up to 10 credits that the students had acquired at his/her home university before coming to TUT can be transferred to TUT Master's Program only if TUT admits after being examined. Those 10 credits shall be determined by TUT's criterion.

2. Application for degree

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

II Class registration, examination, attendance period

1. Class registration method

Classes shall be registered according to the program schedule of your respective major.

(1) Making your study plan

To make your study plan, you should read this Guide Book thoroughly, and follow the instructions and advices given during the orientations and from your supervisor.

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(2) Class registration

The student must register the classes by Dream Campus through TUT website
https://www.ead.tut.ac.jp/portal/
or by "Application for Subjects" during the designated period.
*Classes cannot be registered nor withdrawn after the designated registration period.
Those classes without registration will not be accredited in any case.

NOTES

1) If the student does not attend the class nor take the examinations, credits will not be given even if the registration is made.

2) A student cannot re-register the subject once credits are given.

3) Subjects that held at the same time schedule cannot be registered. Note that this does not apply for subjects being taken again for examinations only, or intensive subjects.

(3) Confirming and amending the registration

To confirm your class registration or to amend, you should access Dream Campus, and Follow the manuals for how to use.

(4) Repeating classes

Basically, a student who has failed in a subject with regular examinations, or some other reasons can take the same subject again in the next academic year.
To repeat a subject, he/she must make registration again

(5) Repeating classes by examination.

When a subject instructor approves of your credits by passing the examination without re-attending the class, students can register the subject with a sheet of “Application for Registration for Repeating Subjects (by Examination)".
*Only the subjects failed with “D” grade are eligible for this.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

Regular examinations shall be held during the set period at the end of each term, as a principle.

All students are to check the exam schedule on the academic calendar through Dream Campus or bulletin board. Note that examination may be held at any time when found necessary by the subject instructor.

(2) Make-up examination

1) Make-up examination shall be held only when the student could not take the regular examination due to the following reasons. The student must gain the approval of the subject instructor with "Request for 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) "Request for make-up examination" must be submitted to the Academic Affairs Division within one week from the final date of regular examination.

3) If a student fails to take the make-up examination, further examination will not be held.

(3) Approval of credits and evaluation

Credits are approved from the subject instructor.

1) Your grades are calculated according to the following basis.

Grade	Scores	Approval
A	Over 80	Units certified
B	65-79	Units certified
C	55-64	Units certified
D	Under 55	Units NOT certified

2) Results will be available on Dream Campus after the certain days of the examination.

3. Maximum years of attendance, etc.

(1) Maximum years of attendance

It is not allowed for a student to be in the master's twinning program at the university exceeding two years.

(2) Leave of absence

If a student cannot attend classes for two or more months uninterruptedly due to illness or other special reasons, he/she may submit "Request for leave of absence" to Academic Affairs Division after getting the approval from his/her supervisor, member of academic affairs committee, and their department head. Upon approval from the President, the

student can take a leave of absence (maximum two years in total).
The period of this absent will not be counted as the above "(1) Maximum years of attendance".
To return to school after the approved period ends, the student must submit "Notice of return to university ".
To return to school before the approved period ends due to the elimination of the reason, the student must submit "Application for return to university " and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, he/she must submit “Application for withdrawal from university“ to Academic Affairs Division after getting the approval from his/her supervisor, member of academic affairs committee, and their department head. Upon approval from the President, the student can withdraw from the university.
Note that the tuition fee has to be paid in full amount even if the student withdraw in the middle of term.

(4) Elimination from University

A student will be eliminated from the university for the following reason.
1) When a student exceed the period mentioned in above "(1) Maximum years of attendance".
2) When a student cannot return to school after the period mentioned in above “(2) Leave of absence”.
3) When a student dies, or is disappeared.
4) Those who have been approved for half exemption or postponement of admission fee payment and did not pay for the admission fee by the designated date.
5) Those who failed to pay for the tuition and did not pay for even after the warning.

4. Others

(1) Information about canceled or make-up classes

All students are requested to double-check about their class schedules and other information with following tools:

Location		information
Lecture hall at 1st floor, A-bldg.	Central Bulletin Board (panel board)	Class schedule change
	Electronic Bulletin Board (LCD)	Canceled or make-up classes, rescheduled notices
	Glass-covered Bulletin Board	Others
TUT website	https://www.ead.tut.ac.jp/board/main.aspx	Canceled or make-up classes
TUT website for mobile phones	https://www.ead.tut.ac.jp/Mobileboard/main.aspx *Mobile tagging by camera phones	Canceled or make-up classes

(2) Classes/exams in case a STORM WARNING is announced

In case a Storm Warning (*Bo-Fu Keiho*) is announced for Toyohashi city or South-east area of Mikawa region, TUT will conduct classes or examinations as follows:

1) In order 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 are on schedule.
3) If the Storm Warning is cleared between 7:00 am and 11:00 am, all classes starts from3rd period (*classes of 1st and 2nd period will be canceled)
4) If the Storm Warning is still announced after 11:00 am, all classes will be canceled

*All cancelled classes and examinations will be rescheduled.

(3) Information about RESCHEDULED CLASSES/EXAMS

Classes/exams canceled by natural disasters will be rescheduled on "YOBIBI"(an optional extra day). YOBIBI may also be used for makeup classes. Students may check the YOBIBI schedules two weeks before the dates on bulletin board at lecture hall, A-Bldg.

*YOBIBI will be for rescheduling classes/exams cancelled by the storm warning etc., as a priority.

You must double check the information from TUT especially on unusual cases.

(4) University's e-mail account

TUT strongly recommend 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.

(5)Absence from classes

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

The way how your absence will be dealt with is depends on subject instructor.

Reasons of Absence	Certificate you should submit	Procedure
Illness/Injury	Medical certificate or Medical expense receipts	Students inform directly to lecturers
Bereavement leave	Letter or notice of funeral-	Students inform directly to lecturers
Infection diseases*	Medical certificate or Medical expense receipts	Students inform Student Affairs Division (0532-44-6553), TUT office staff will report to lecturers.

*TUT may admonish suspension in order to prevent spread infection. Suspension order will be posted on bulletin board at A-building.

III Curriculum

1. Classes and credits

(1) Classes

Your 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 the 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 lecture, exercise, experiment, practical or hands-on training, and they are offered individually or in combination among them. The class time for one credit is calculated under the following standards.

*Typical class in university is counted as 2 hours.

1) For lectures, one credit requires 15 hours of classes.

2) For exercises, one credit requires 30 hours of classes.

3) For experiments, practical or hands-on training, one credit requires 45 hours of classes.

(4) School term

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

General subjects (Twinning Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week		Instructor	note
			Fall	Spring		
			2014.10 - 2015. 3	2015. 4 - 2015. 9		
Elective	Management Science	2		1	Y. Miyata T. Fujiwara	
	Industrial Policies	2		**1**	H. Shibusawa	
	Culture and Communication I	2		**1**	Undecided	
	Culture and Communication II	2				
	Japanese Life Today	2		1	Undecided	
	Intercultural Communication	2		1	Y. Muramatsu	

Mechanical Engineering (Twinning Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week				Instructor	note
			Fall 1	Fall 2	Spring 1	Spring 2		
			2014.10 - 2015. 3		2015. 4 - 2015. 9			
Compulsory	Seminar on Mechanical Engineering	6	6				Supervisor	
	Thesis Research on Mechanical Engineering	6	9				Supervisor	
Elective	Vibration Engineering	1					S. Kawamura	
	Deformation Processing Technology	1	1				K. Mori	
	Applied Mechanics of Materials	1			1		T. Adachi	
	Micromachining Engineering	1					T. Shibata	
	Joining and Surfacing of Materials	1					M. Fukumoto	
	Science and Technology of Thin Films	1				1	M. Izaki	
	Properties and Applications of Engineering Materials	1					H. Miura	
	Time-frequency Analysis and Wavelet Transform	1					Z. Zhang	
	Modeling and Analysis of Dynamical Control Systems	1					K. Terashima	
	High-Speed Mechanics and Optical Measurement	1				1	S. Suzuki	
	Applied Thermal Engineering	1	1				K. Kitamura	
	Advanced Applied Fluid Engineering	1					H. Yanada	
	Applied Combustion Engineering	1					S. Noda	
	Advanced Aeroacoustics	1	1				A. Iida	
	Advanced Mechanical Systems Design I	2	1				Supervisor	
	Advanced Mechanical Systems Design II	2			1		Supervisor	
	Advanced Materials and Manufacturing Process I	2	1				Supervisor	
	Advanced Materials and Manufacturing Process II	2			1		Supervisor	
	Advanced System, Control and Robotics I	2	1				Supervisor	
	Advanced System, Control and Robotics II	2			1		Supervisor	
	Advanced Energy and Environmental Engineering I	2	1				Supervisor	
	Advanced Energy and Environmental Engineering II	2			1		Supervisor	

Electrical and Electronic Information Engineering （Twinning Program）

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week 1st grade 2014.10 - 2015. 3	Classes/Week 1st grade 2015. 4 - 2015. 9	Instructor	note
Compulsory	Seminar on Electrical and Electronic Information Engineering	6	6		Supervisor	
	Thesis Research on Electrical and Electronic Information Engineering	6	9		Supervisor	
Elective	Material Science for Electronics 1	2	1		M. Fukuda Y. Nakamura H. Muto	
	Material Science for Electronics 2	2			M. Fukuda Y. Nakamura H. Muto	
	Physics for Electronics 1	2		1	A. Matsuda T. Hattori T. Ishiyama H. Takagi	
	Physics for Electronics 2	2			A. Matsuda T. Hattori T. Ishiyama H. Takagi	
	Electrical Energy Systems 1	2	1		M. Nagao H. Takikawa Y. Sakurai N. Hozumi	
	Electrical Energy Systems 2	2			M. Nagao H. Takikawa Y. Sakurai N. Hozumi	
	Electrical Technology and Materials 1	2		1	Y. Suda R. Inada Yo. Murakami	
	Electrical Technology and Materials 2	2			Y. Suda R. Inada Yo. Murakami	
	Semiconductor Physics 1	2	1		A. Wakahara A. Sandhu	
	Semiconductor Physics 2	2			H.Okada T. Kawano	
	LSI Process 1	2		1	K. Sawada Yu. Murakami	
	LSI Process 2	2			H. Sekiguchi K. Takahashi	
	Information and Communication Technology 1	2		1	T. Ohira H. Uehara	
	Information and Communication Technology 2	2			T. Ohira H. Uehara	
	Advanced Electronic Information System 1	2	1		S. Ichikawa M. Tamura	
	Advanced Electronic Information System 2	2			S. Ichikawa M. Tamura	
	Methodology of R & D 1	2	1		Supervisor	
	Methodology of R & D 2	2		1	Supervisor	

Computer Science and Engineering（Twinning Program）

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week				Instructor	note
			Fall 1	Fall 2	Spring 1	Spring 2		
			2014.10 - 2015. 3		2015. 4 - 2015. 9			
Compulsory	Seminar on Computer Science and Engineering	6	6				Supervisor	
	Thesis Research on Computer Science and Engineering	6	9				Supervisor	
Elective	Speech and Language Processing, Advanced	2			1		T. Akiba K. Yamamoto	
	Networking, Advanced 1	1					K. Umemura	
	Advanced Robotics and Informatics 1	1	1				J. Miura	
	Advanced Robotics and Informatics 2	1					M. Okada	
	Web Data Engineering 1	1			1		M. Aono	
	Web Data Engineering 2	1	1				S. Kuriyama	
	Computers and Education	2					K. Kawai	
	Image Processing, Advanced	2	1				Y. Kanazawa Y. Sugaya	
	Algorithm Engineering, Advanced	2	1				S. Masuyama	
	Computer Systems, Advanced	2					R. Kobayashi	
	Quantum Biology and Materials Science	2			1		H. Sekino N. Kurita H.Goto	
	Complex Systems and Intelligent Informatics 1	1	1				K. Murakoshi	
	Complex Systems and Intelligent Informatics 2	1		1			Y. Ishida	
	Advanced Chemoinformatics	2			1		Y. Takahashi H. Kato	
	Bio-physical Information Systems 1	1					N. Fukumura	
	Bio-physical Information Systems 2	1					J. Horikawa	
	Advanced Topics in Brain and Cognitive Sciences	2	1				S. Nakauchi M. Kitazaki	

Environmental and Life Sciences（Twinning Program）

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week				Instructor	note
			Fall 1	Fall 2	Spring 1	Spring 2		
			2014.10 - 2015. 3		2015. 4 - 2015. 9			
Compulsory	Seminar on Environmental and Life Science	6	6				Supervisor	
	Thesis Research on Environmental and Life Science	6	9				Supervisor	
Elective	Advanced Separation Chemistry I	1	1				Y. Saito	
	Advanced Separation Chemistry II	1		1			Y. Hirata	
	Special Topics in Inorganic Chemistry	1		1			N. Kakuta	
	X-ray Spectroscopy for Catalytic Engineering	1				1	T. Mizushima	
	Applied Physical Chemistry I	1			1		A. Matsumoto	
	Applied Physical Chemistry II	1				1	A. Matsumoto	No class will be held on and after 2016
	Advanced Polymer Chemistry	1	1				S. Itsuno	
	Advanced Polymer Engineering	1		1			E. Yoshida	
	Special Topics in Applied Organic Chemistry	1			1		S. Iwasa K. Shibatomi	
	Developmental Neuroscience	1				1	S. Yoshida R. Numano	
	Advanced Molecular Life Science	1	1				T. Tanaka S. Umekage	
	Advanced Applied Biochemistry and Biotechnology	1		1			A. Hiraishi T. Eki	
	Advanced Electrical and Electronic Technology for Ecological Engineering	1			1		S. Tanaka A. Mizuno K. Takashima S. Ariyoshi	
	Advanced Biomaterials Engineering	1				1	H. Tsuji R. Tero	
	Advanced Reaction Engineering	1			1		T. Oguchi	
	Advanced Sustainable Coordinator	1				1	N. Goto T. Tokairin	
	Advanced Supercritical Fluid Engineering	1				1	H. Daimon	
	Applied Environmental Biology	1					A. Nakabachi	
	※ Advanced Life Science and Biotechnology I	2	1				Supervisor	
	※ Advanced Life Science and Biotechnology II	2			1		Supervisor	
	※ Advanced Environmental Technology I	2	1				Supervisor	
	※ Advanced Environmental Technology II	2			1		Supervisor	
	※ Advanced Environmental and Ecological Systems I	2	1				Supervisor	
	※ Advanced Environmental and Ecological Systems II	2			1		Supervisor	

※ Please ask your supervisor about class schedule of this subject

Architrcture and Civil Engineering (Twinning Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week		Instructor	note
			2014.10 - 2015. 3	2015. 4 - 2015. 9		
Compulsory	Seminar on Architecture and Civil Engineering	6	6		Supervisor	
	Thesis Research on Architecture and Civil Engineering	6	9		Supervisor	
Elective	Elasticity and Stability	2			Y. Matsumoto	
	Finite Element Method for Continua and Bar Structures	2	1		S. Nakazawa	
	Seismic Evaluation of Existing Buildings	2			T. Matsui	
	Seismic Design of Structures	2	1		T. Saito	
	Geotechnical Analysis	2	1		K. Miura	
	Building Science: Indoor Air Quality and Ventilation	2			H. Matsumoto	
	Building and Urban Thermal Environment	2		1	unknown	
	Coastal Hydraulics	2			S. Kato	
	Water Environment Engineering I	2			K. Yokota	
	Water Environment Engineering II	2		1	T. Inoue	
	Computer Applications in Urban Planning	2		1	unknown	
	Human Settlement: Its History and Theory	2			H. Izumida	
	Advanced Study on Housing System and Housing Policy	2		1	S. Matsushima	
	Advanced District Planning	2			J. Asano	
	Adavnced Architectual Planning	2		1	Y. Kakino	
	Modeling Regional Environment	2	1		Y. Miyata	
	Management of Technology	2	1		T. Fujiwara	
	Advanced Computational Economics	2			H. Shibusawa	
	※ Advanced Structural System Planning and Design I	2	1		Supervisor	
	※ Advanced Structural System Planning and Design II	2		1	Supervisor	
	※ Advanced Environmental System Planning and Design I	2	1		Supervisor	
	※ Advanced Environmental System Planning and Design II	2		1	Supervisor	
	※ Advanced Regional System Planning and Design I	2	1		Supervisor	
	※ Advanced Regional System Planning and Design II	2		1	Supervisor	

※ Please ask your supervisor about class schedule of this subject

Mechanical Engineering (Double Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Classes/Week				Instructor	note
			Fall 1	Fall 2	Spring 1	Spring 2		
			2014.10 - 2015. 3		2015. 4 - 2015. 9			
Compulsory	Seminar on Mechanical Engineering I	4	4				Supervisor	
	Seminar on Mechanical Engineering II	2	2				Supervisor	
	Thesis Research on Mechanical Engineering	6	9				Supervisor	
	Internship	–	12				Supervisor	
Elective	Advances in Mechanical Design	2	1				K. Mori T. Adachi	
	Advances in Material Science and Manufacturing	2						
	Advances in Thermal and Fluid Mechanics	2	2				A. Iida K. Kitamura	
	Modeling and Analysis of Dynamical Control Systems	2	1				K. Terashima	
	Engineering Safety	2						
	Robotics	2	1				N.Uchiyama	
	Information Processing in Robotics	2						
	Time-frequency Analysis and Wavelet Transform	1					Z. Zhang	
	High-speed Mechanics and Optical Measurement	1				1	S. Suzuki	

Course Requirement Guide Book

（October 2014）

International Doctoral Degree Program

TOYOHASHI
UNIVERSITY OF TECHNOLOGY
1-1 Hibarigaoka Tenpaku-cho Toyohashi-shi Aichi 441-8580, JAPAN
Tel : +81-0532-44-6506　Fax : +81-0532-44-6509

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 acquire the minimum credits required as follows. A student must carry out a research under a proper guidance by faculty members. Also a student must submit a doctoral thesis, and must pass the review and final examination.

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

Classification	Required credits for completion	Remarks
Mechanical Engineering	12	4 credits in total can be substituted with combination of following options , with permission from your supervisor. 1. Specialized subjects from International Master's Degree Program (except Advanced subjects) 2. Subjects of other department from International Doctoral Degree Program 3. Subjects from doctoral program of student's own department held in Japanese (Note that you cannot chose a subject in Japanese if you already took the same subject held in English and vice versa)
Electrical and Electronic Information Engineering	12	
Computer Science and Engineering	12	
Environmental and Life Sciences	12	
Architecture and Civil Engineering	12	

2. Application for degree

Only a student who has acquired the credits required for completion, or who is expected to acquire the required credits can apply for the doctoral degree. Degree application and submission procedure of thesis for doctoral degree shall be posted on a bulletin board.

II Class registration, examination, attendance period

1. Class registration method

Classes shall be registered according to the education schedule of your respective major.

(1) Making your study plan

To make your study plan, read this Guide Book thoroughly, and follow the instructions and advices given during the orientation and from your supervisor.

(Course Schedule is provided at the beginning of each academic year.
Schedule for intensive classes will be posted on a bulletin board when the details are fixed.)

(2) Class registration

The student must register the classes by Dream Campus through TUT website
https://www.ead.tut.ac.jp/portal/
or by "Application for Subjects" during the designated period.
*Classes cannot be registered nor withdrawn after the designated registration period. Those classes without registration will not be accredited in any case.

NOTES

1) To take Specialized subjects from International Master's Degree Program (except Advanced topics subjects), subjects from your own department held in Japanese, or other department's subjects from International Doctoral Degree Program, he/she must obtain approval from his/her supervisor and the subject instructor with "Application for Registration of Subjects in Other Department"

2) If the student does not attend the class nor take the examinations, credits will not be given even if the registration is made.

3) A student cannot re-register the subject for which credits are given.

4) Subjects held at the same time schedule cannot be registered. Note that this does not apply for intensive subjects.

(3) Confirming and amending the registration

To confirm your class registration or to amend, you should access Dream Campus, and follow the manuals for how to use.

(4) Repeating classes

Basically, a student who has failed in a subject with regular examinations, or some other reasons, can take the same subject again in the next academic year.
To repeat a subject, he/she must make registration again.

2. Examination

Examination includes regular examinations and make-up examinations.

(1) Regular examination

Regular examinations shall be held during the set period at the end of each term, as a principal.

All students are to check the exam schedule on the academic calendar through Dream Campus or bulletin board. Note that examination may be held at any time when found necessary by the subject instructor.

(2) Make-up examination

1) Make-up examination shall be held only when a student could not take the regular examination due to the following reasons. The student must gain the approval of the subject instructor with "Request for 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) "Request for makeup examination" must be submitted to Academic Affairs Division within one week from the final date of regular examination.

3) If a student fails to take the make-up examination, further examination will not be held.

(3) Approval of credits and evaluation

Credits are approved from the subject instructor.

1) Your grades are calculated according to the following basis.

Grading	Scores	Approval
A	Over 80	Units certified
B	65-79	Units certified
C	55-64	Units certified
D	Under 55	Units NOT certified

2) Results will be available on Dream Campus after the certain days of the examination.

3. Maximum years of attendance, etc.

(1) Maximum years of attendance

It is not allowed for a student to be in the doctoral course at the university exceeding six years.

(2) Leave of absence

If a student cannot attend classes for two or more months uninterruptedly due to illness or other special reasons, he/she may submit "Request for leave of absence" to Academic Affairs Division after getting the approval from his/her supervisor, member of academic affair committee, and their department head. Upon approval from the President, the

student can take a leave of absence (maximum two years in total).
The period of this absent will not be counted as the above "(1) Maximum years of attendance".
To return to school after the approved period ends, the student must submit "Notice of return to university".
To return to school before the approved period ends due to the elimination of the reason, the student must submit "Application for return to university" and obtain approval.

(3) Withdrawal

If a student wants to withdraw from the university, he/she must submit “Application for withdrawal from university“ to Academic Affairs Division after getting the approval from his/her supervisor, member of academic affairs committee, and their department head. Upon approval from the President, the student can withdraw from the university.
Note that the tuition fee has to be paid in full amount even if the student withdraw in the middle of term.

(4) Elimination from University

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

1) When a student exceed the period mentioned in above "(1) Maximum years of attendance".
2) When a student cannot return to school after the period mentioned in above “(2) Leave of absence”.
3) When a student dies, or is disappeared.
4) Those have been approved for the half exemption or postponement of admission fee payment and who did not pay for the admission fee by the designated date.
5) Those who failed to pay for the tuition and did not pay for even after the warning.

4. Others

(1) Information about canceled or make-up classes

All students are requested to double-check about their class schedules with following tools:

Location		information
Lecture hall at 1st floor. A-bldg.	Central Bulletin Board (panel board)	Class schedule change
	Electronic Bulletin Board (LCD)	Canceled or make-up classes, rescheduled notices
	Glass-covered Bulletin Board	Others
TUT website	https://www.ead.tut.ac.jp/board/main.aspx	Canceled or make-up classes
TUT website for mobile phones	https://www.ead.tut.ac.jp/Mobileboard/main.aspx *Mobile tagging by camera phones	Canceled or make-up classes

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

In case a storm warning (*Bo-Fu Keiho*) is announced for Toyohashi city or South-east area of Mikawa region, TUT will conduct 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 are on schedule.
3) If the storm warning is cleared between 7:00 am and 11:00 am, all classes starts from 3rd period (*Classes of 1st and 2nd period will be canceled)
4) If the storm warning is still announced after 11:00 am, all classes will be canceled.

*All cancelled classes and examinations will be rescheduled.

(3) Information about RESCHEDULED CLASSES/EXAMS

Classes/exams canceled by natural disasters will be rescheduled on "YOBIBI"(an optional extra day). YOBIBI may also be used for makeup classes. Students may check the YOBIBI schedules two weeks before the dates on bulletin board at lecture hall, A-Bldg.

*YOBIBI will be used for rescheduling classes/exams cancelled by the storm warning etc., as a priority.

You must double check the information from TUT especially on unusual canses.

(4) University's e-mail account

TUT strongly recommend 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.

(5) Absence from classes

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

The way how your absence will be dealt with is depends on the subject instructor.

Reasons of Absence	Certificate 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
Infection diseases*	Medical certificate or Medical expense receipts	Students inform Student Affairs Division (0532-44-6553), TUT office staff will report to lecturers.

*TUT may admonish suspension in order to prevent spread infection. Suspension order will be posted on bulletin board at A-building.

III Curriculum

1. Classes and credits

(1) Classes

Classes in Doctoral Program are only specialized subjects. 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 your requirement for 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 lecture, seminar, experiment, practical or hands-on training, and they are offered individually or in combination among them. The class time for one credit is calculated under the following standards.
*Typical class in university is counted as 2 hours.

1) For lectures, one credit requires 15 hours of classes.
2) For exercises, one credit requires 30 hours of classes
3) For experiments, practical or hands-on training, one credit requires 45 hours of classes.

(4) School term

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

Mechanical Engineering
(Doctoral Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Instructor	1st grade Fall 2014.10 — 2015.3	1st grade Spring 2015.4 — 2015.9	2nd grade 2015.10 — 2016.9	3rd grade 2016.10 — 2017.9	Note
Compulsory	Advanced Seminar on Mechanical Engineering 1	4	Supervisor	4				
	Advanced Seminar on Mechanical Engineering 2	1	Supervisor			1		
	Seminar on Interdisciplinary Research	1				1		
Elective	Advanced Mechanical Systems	2	S. Kawamura T. Adachi Y. Takeichi		1			
	Advanced Production Processes	2	K. Mori T. Shibata Y. Abe T. Kawashima	1				
	Advanced Manufacturing Processes	2	M. Fukumoto T. Yasui M. Izaki S. Yokoyama		1			
	Advanced Materials Science	2	H. Miura Y. Todaka M. Kobayashi	1				
	Engineering of Intelligent Robotics	2	K. Terashima S. Suzuki T. Miyoshi N. Uchiyama		1			
	Advanced Production and Instrumentation Systems	2	Z. Zhang T. Miyake	1				
	Advanced Energy Engineering	2	K. Kitamura S. Noda T. Suzuki Y. Nakamura		1			
	Advanced Environmental Engineering	2	A. Iida N. Sekishita H. Yanada	1				

Electrical and Electronic Information Engineering

(Doctoral Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Instructor	1st grade		2nd grade	3rd grade	Note
				Fall	Spring			
				2014.10 — 2015.3	2015.4 — 2015.9	2015.10 — 2016.9	2016.10 — 2017.9	
Compulsory	Seminar on Electrical and Electronic Information Engineering 2	4	Supervisor	4				
	Seminar on Electrical and Electronic Information Engineering 3	1	Supervisor			1		
	Seminar on Interdisciplinary Research	1				1		
Elective	Advanced Electronic Materials 1	2	M. Fukuda Y. Nakamura H. Muto		1			
	Advanced Electronic Materials 2	2	A. Matsuda T. Hattori T. Ishiyama H. Takagi	1				
	Advanced Electrical Systems 1	2	M. Nagao H. Takikawa Y. Sakurai N. Hozumi	1				
	Advanced Electrical Systems 2	2	Y. Suda R. Inada Yo. Murakami		1			
	Advanced Microelectronics 1	2	M. Ishida K. Sawada Yu. Murakami H. Sekiguchi K. Takahashi		1			
	Advanced Microelectronics 2	2	A. Wakahara A. Sandhu H. Okada T. Kawano	1				
	Advanced Information and Communication Systems 1	2	T. Ohira H. Uehara		1			
	Advanced Information and Communication Systems 2	2	S. Ichikawa M. Tamura	1				
	Methodology of R & D	2	Supervisor	1				

Computer Science and Engineering
(Doctoral Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Instructor	1st grade				2nd grade	3rd grade	note
				Fall 1	Fall 2	Spring1	Spring2			
				2014.10 — 2015.3		2015.4 — 2015.9		2015.10 — 2016.9	2016.10 — 2017.9	
Compulsory	Seminar on Computer Science and Engineering 1	4	Supervisor	4						
	Seminar on Computer Science and Engineering 2	1	Supervisor					1		
	Seminar on Interdisciplinary Research	1						1		
Elective	Speech and Language Processing	2	T. Akiba K. Yamamoto			1				
	Computer Network Engineering 1	1	K. Umemura					0.5		
	Robotics Intelligence 1	1	J. Miura	1						
	Robotics Intelligence 2	1	M. Okada					0.5		
	Web Data Engineering, Advanced 1	1	M. Aono			1				
	Web Data Engineering, Advanced 2	1	S. Kuriyama	1						
	Pattern Information Processing	2	Y. Kanazawa Y. Sugaya	1						
	Theoretical Computer Science, Advanced	2	S. Masuyama	1						
	Computer System Engineering	2	R. Kobayashi					1		
	Molecular Simulation	2	H. Sekino N. Kurita H. Goto			1				
	Advanced Complex Systems and Intelligent Informatics 1	1	K. Murakoshi	1						
	Advanced Complex Systems and Intelligent Informatics 2	1	Y. Ishida		1					
	Advanced Molecular Information Engineering	2	Y. Takahashi H. Kato			1				
	Biological Information System Engineering 1	1	N. Fukumura					0.5		
	Biological Information System Engineering 2	1	J. Horikawa					0.5		
	Brain and Neural System Engineering	2	S. Nakauchi M. Kitazaki	1						

◆ "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).

Environmental and Life Sciences
(Doctoral Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Instructor	1st grade		2nd grade	3rd grade	Note
				Fall	Spring			
				2014.10 — 2015.3	2015.4 — 2015.9	2015.10 — 2016.9	2016.10 — 2017.9	
Compulsory	Seminar on Environmental & Life Sciences 1	4	Supervisor	4				
	Seminar on Environmental & Life Sciences 2	1	Supervisor			1		
	Seminar on Interdisciplinary Research	1				1		
Elective	Advanced Environmental Technology 1	2	A. Mizuno S. Tanaka K. Takashima		1			
	Advanced Environmental Technology 2	2	A. Matsumoto T. Oguchi T. Mizushima	1				
	Advanced Ecological Engineering	2	N. Kakuta H. Nakano N. Goto H. Daimon T. Tokairin		1			
	Advanced Biotechnology 1	2	T. Eki A. Hiraishi T. Tanaka A. Nakabachi K. Sakuma		1			
	Advanced Biotechnology 2	2	E. Yoshida S. Yoshida S. Umekage R. Numano	1				
	Advanced Molecular Function Chemistry 1	2	S. Itsuno S. Iwasa K. Shibatomi N. Haraguchi		1			
	Advanced Molecular Function Chemistry 2	2	H. Tsuji Y. Saito Y. Hirata R. Tero	1				

Architecture and Civil Engineering
(Doctoral Degree Program)

2014.10

Compulsory / Elective	Subject Name	Credits	Instructor	1st grade		2nd grade	3rd grade	Note
				Fall	Spring			
				2014.10 — 2015.3	2015.4 — 2015.9	2015.10 — 2016.9	2016.10 — 2017.9	
Compulsory	Seminar on Architecture and Civil Enigneering 1	4	Supervisor	4				
	Seminar on Architecture and Civil Enigneering 2	1	Supervisor			1		
	Seminar on Interdisciplinary Research	1				1		
Elective	Advanced Mechanics and Design of Spatial Structure Systems	2	S. Nakazawa	1				
	Advanced Structural Design	2	T. Saito T. Matsui	1				
	Advanced Building Environmental Engineering and Building Services	2	H. Matsumoto		1			
	Advanced Theory in Architectural Design	2	S. Matsushima Y. Kakino	1				
	Advanced History of Archircture	2	H. Izumida	1				
	Sustainable Urban Planning	2	J. Asano	1				
	Advanced Geologic Hazard Mitigation Planning	2	M. Kawamura K. Miura	1				
	Advanced Water Environmental Engineering	2	T. Inoue S. Kato K. Yokota	1				
	Advanced Transportation Systems and Economics	2	Y. Miyata H. Shibusawa		1			
	Advanced Environmental Economics and Planning	2	Y. Miyata	1				
	Advanced Management of Technology	2	T. Fujiwara H. Shibusawa		1			
	Advanced Western Culture	2	K. Aikyo		1			