HANDBOOK

for Undergraduate Students in the International Program in Science and Engineering

2014

Faculty of Science and Engineering
Waseda University

This handbook contains information on academic policies, curriculum, graduation requirements, and school life that applies to undergraduate students in the Faculty of Science and Engineering. Be careful not to lose this handbook. Even though new handbooks are issued each year, the academic policies, curriculum, and graduation requirements stated in the handbook issued in the year that you entered applies to you until you graduate.

Please read through this handbook at least once and consult it whenever you have questions related to your studies at Waseda University. In addition to the information in this handbook, the University posts important announcements on the websites listed on the next page. Students should check these websites periodically.

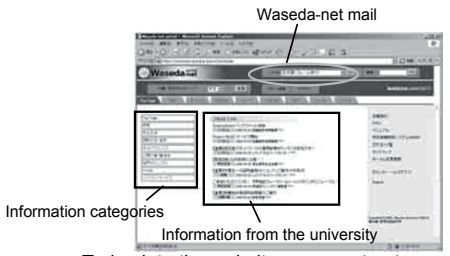
Andrew Domondon

Director of the International Program in Science and Engineering,
International Center for Science and Engineering Programs

Waseda-net portal / Waseda-net mail

This is an online system used by students, faculty and staff, and alumni of Waseda University. By logging into the system from this portal, you can get information or services tailored to your qualifications or attributes (information on courses such as registration, examinations, and reports, or information on public events such as lecture meetings, seminars, and symposiums).

Waseda-net mail is a web mail service that you can use over a web browser from anywhere. You can also use this address after you graduate from the university.
https://www.wnp.waseda.jp



To log into the website, you must enter your Waseda-net ID and password issued to you when you enter the university.

Class support portal Course N@vi

Course N@vi is a tool that has class support functions such as a lecture material download function and a quiz function. To use Course N@vi, log into Waseda-net portal and select “Course N@vi” from “Classes” in the left menu.

Students of Science and Engineering Schools website

This website for students of Science and Engineering Schools was created by the Faculty of Science and Engineering for purposes such as class support. To access the page, log into Waseda-net portal and select “Students of Science and Engineering Schools website” from the left menu. You can access information tailored to individual students, such as the result of course registration and class cancellation.

You should check these pages at least once a week.


Students of Science and Engineering Schools website

Faculty of Science and Engineering website

This website provides various types of information from the Faculty of Science and Engineering. Course registration, scholarship information and other important information are updated as needed.
http://www.sci.waseda.ac.jp/

Mobile Phone website

WW Mobile, a website accessible from mobile phones, has been set up. Messages from the Faculty of Science and Engineering, information on class cancellation or on lecture meetings, the availability of computer rooms and other information are accessible from mobile phones anytime, anywhere. An access code must be entered to check information on class cancellation. Check the access code in the Students of Science and Engineering Schools website.

QR code for WW Mobile,
a website accessible from mobile phones

*** Check these web pages on a regular basis since the content of this guidebook is subject to change.**

CONTENTS

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Features of the Faculty of Science and Engineering

Welcome to Waseda University! We are very happy that you have decided to study at Waseda University's Faculty of Science and Engineering. We look forward to working with you and hope that your undergraduate education here will be an exciting and rewarding experience. This handbook contains information to help you make most of your time here at Waseda. It explains the academic policies, the curriculum, and the graduation requirements for students in the International Program in Science and Engineering (IPSE) at Waseda University. In this handbook, we will refer to students in this program as "IPSE students". The International Program in Science and Engineering has academic policies, curricula, and graduation requirements distinct from other programs.

The Faculty of Science and Engineering is composed of three undergraduate schools and three graduate schools. The names of the undergraduate schools and the departments belonging to each of them are shown below.

School of Fundamental Science and Engineering
Department of Mathematics
Department of Applied Mathematics
Department of Applied Mechanics and Aerospace Engineering
Department of Electronic and Photonic Systems
Department of Computer Science and Engineering
Department of Communications and Computer Engineering
Department of Intermedia Art and Science

School of Creative Science and Engineering
Department of Architecture
Department of Modern Mechanical Engineering
Department of Industrial Management and Systems Engineering
Department of Civil and Environmental Engineering
Department of Resources and Environmental Engineering

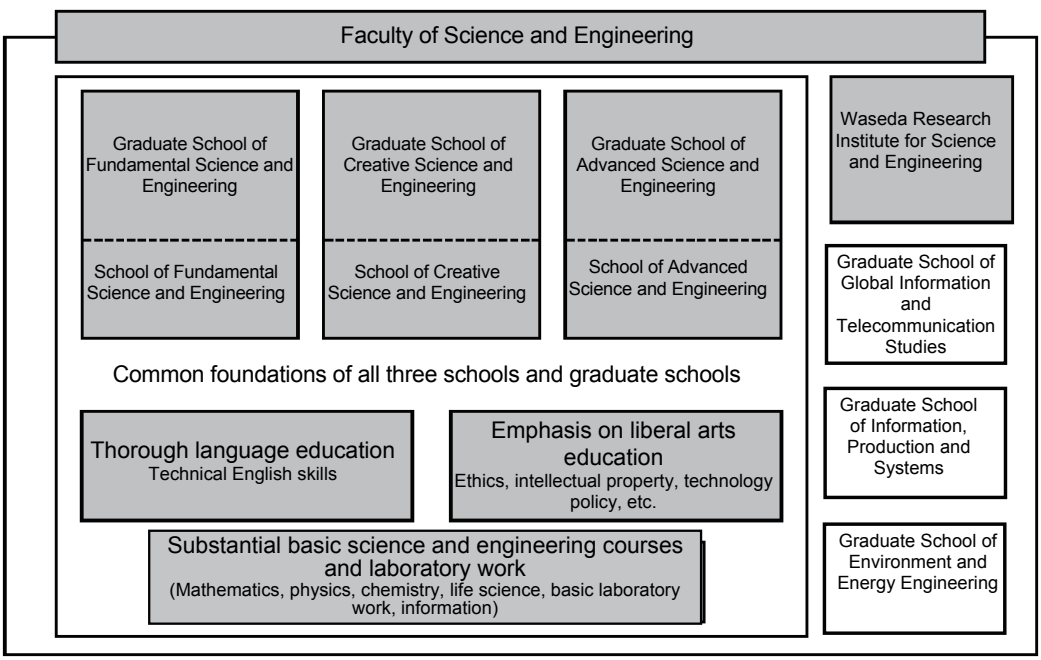
School of Advanced Science and Engineering
Department of Physics
Department of Applied Physics
Department of Chemistry and Biochemistry
Department of Applied Chemistry
Department of Life Science and Medical Bioscience
Department of Electrical Engineering and Bioscience

All IPSE students belong to the Faculty of Science and Engineering, but your School and Department affiliation will depend on which School and Department you entered. It is important to note that not all Departments accept IPSE students. The School of Fundamental Science and Engineering runs two sub-programs for IPSE students, a sub-program α and a sub-program β. The former sub-program enables IPSE students to belong to the Department of Mathematics or the Department of Applied Mathematics. The latter sub-program enables IPSE students to belong to the Department of Electronic and Photonic Systems, Department

of Computer Science and Engineering, Department of Communications and Computer Engineering, or Department of Intermedia Art and Science.

. The School of Creative Science and Engineering also runs two sub-programs for IPSE students, a sub-program in International Sustainable Development and another in International Environmental Disaster Prevention. The former sub-program enables IPSE students to belong to the Department of Modern Mechanical Engineering. The latter sub-program enables IPSE students to belong to the Department of Civil and Environmental Engineering. The School of Advanced Science and Engineering accepts IPSE students into all Departments.

<Organization of the Faculty of Science and Engineering>



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History and Profile of the Faculty of Science and Engineering

In February 1908, Shigenobu Okuma, the founder of Waseda University, keenly realizing the importance of educating scientists and engineers, established a school of science and engineering, an achievement that had been thought to be impossible for a private university. Among private universities in Japan, it remains the science and engineering educational institution with the longest history. Since the first class of 37 graduates set out into the world in 1912, many graduates have followed in their footsteps and continue to contribute actively to various areas of society.

Profile

The School of Fundamental Science and Engineering focuses on areas related to information, machines, electronics, materials, and energy, and on the foundation on which these areas rest upon: mathematics. The School consists of the Department of Mathematics, the Department of Applied Mathematics, the Department of Applied Mechanics and Aerospace Engineering, the Department of Electronic and Photonic Systems, the Department of Computer Science and Engineering, the Department of Communications and Computer Engineering, and the Department of Intermedia Art and Science. The School aims to educate individuals who have the ability to think deeply and imaginatively about modern science and technology, as well as the fundamental principles on which they are based.

The School of Creative Science and Engineering focuses on a wide range of urgent problems that the world faces today, especially problems concerning population growth, the environment, natural resources, energy, and food. The School consists of the Department of Architecture, the Department of Modern Mechanical Engineering, the Department of Industrial Management and Systems Engineering, the Department of Civil and Environmental Engineering, and the Department of Resources and Environmental Engineering. The School aims to educate scientists and engineers who can develop technologies that address the most pressing scientific and technological problems of today's world.

The School of Advanced Science and Engineering focuses on the traditional areas of science, but actively explores the implications and applications of fundamental research. The School consists of the Department of Physics, the Department of Applied Physics, the Department of Chemistry and Biochemistry, the Department of Applied Chemistry; the Department of Life Science and Medical Bioscience, and the Department of Electrical Engineering and Bioscience. The School aims to educate researchers who will work and lead at the frontiers of science and engineering.

Ⅲ

Bulletin of the International Program in Science and Engineering

1 Credit System

Waseda University adopts a credit system, a system under which you register and take courses according to certain standards, earn credits of them by passing requirements set by lecturers in charge (e.g., submission of reports, passing examinations, etc.) and are finally granted a bachelor's degree when the total number of credits you have earned reaches 136. You are expected to earn the credits step by step toward graduation.

The number of credits for a course is calculated based on a standard idea that a 1-credit course is comprised of academic contents requiring you to do 45 hours of learning as well as on considerations, in light of how classes are conducted by lecturers, about educational effects of the classes and learning required outside of school hours, and other factors. It should be noted that any course listed in this handbook as offering a 2 hours per week consists of a single 90-minute class per week.

Up to 54 credits can be registered for in one academic year.

2 School and Department Affiliation

If you entered the School of Fundamental Science and Engineering, you are automatically affiliated with that School, but your Departmental affiliation will be determined at the end of your first year. At the end of your first year, you will be asked to submit your preferences.

If you entered the School of Creative Science and Engineering or the School of Advanced Science and Engineering, you are automatically affiliated with the School and the specific Department to which you were accepted.

3 Degree and Graduation

Each school grants a bachelor's degree to those who have attended the school for 4 years or longer and have earned the required number of credits for graduation (136 credits in total). Students cannot attend the school for over 8 years (4 years for those who entered with a bachelor's degree).

Students graduate from their respective school on September 15 in the relevant year.

Those who could not graduate in September can graduate at the end of the fall semester of the next year (on March 15), upon recommendation of a supervisor and subject to the following conditions noted below.

(1) If the student was not able to graduate because he/she failed courses necessary for graduation due to failing exams or to satisfy requirements, then the student must re-take and pass them in the next semester in the following academic year.

(2) If the student was not able to graduate because he/she did not submit a bachelor's thesis or a graduation project, then the student must submit the required bachelor's thesis or graduation project in the next semester in the following academic year.

4 Tuition and Fees

(1) Payment dates

Tuition and fees must be paid by the following due dates:

Tuition and Fees	Due date for payment
Tuition and Fees for the fall semester	October 1
Tuition and Fees for the spring semester	May 1

(2) Tuition and Fees

		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Admission Fee		200,000	0	0	0	0	0	0	0
Tuition		563,500	567,000	567,000	571,000	571,000	574,500	574,500	579,000
Educational Environment Improvement Fee		135,000	135,000	135,000	135,000	135,000	135,000	135,000	135,000
Global Education Fee		35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Seminar Fee	Mathematics	30,000	30,000	27,000	27,000	27,000	27,000	27,000	27,000
	Applied Mathematics			30,000	30,000	30,000	30,000	30,000	30,000
	Electronic and Photonic Systems			48,000	48,000	48,000	48,000	48,000	48,000
	Coumputer Science and Engineering			40,000	40,000	40,000	40,000	40,000	40,000
	Communications and Computer Engineering								
	Intermedia Art and Science			48,000	48,000	48,000	48,000	48,000	48,000
	Modern Mechanical Engineering	47,000	47,000	48,000	48,000	48,000	48,000	49,000	49,000
	Civil and Environmental Engineering			47,000	47,000	47,000	47,000	47,000	47,000
	Physics	50,000	50,000	46,350	46,350	46,350	46,350	46,300	46,300
	Apllied Physics								
	Chemistry and Biochemistry			57,000	57,000	57,000	57,000	57,000	57,000
	Applied Chemistry								
	Life Science and Medical Bioscience			75,750	75,750	80,750	80,750	85,750	85,750
	Electrical Engineering and Bioscience			54,500	54,500	54,500	54,500	54,500	54,500
Membership Fee of Student Health Promotion Mutual Aid Association		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Alumni Association Membership Fee		0	0	0	0	0	0	0	40,000
Total amount	Mathematics	965,000	768,500	765,500	769,500	769,500	773,000	773,000	817,500
	Applied Mathematics			768,500	772,500	772,500	776,000	776,000	820,500
	Electronic and Photonic Systems			786,500	790,500	790,500	794,000	794,000	838,500
	Coumputer Science and Engineering			778,500	782,500	782,500	786,000	786,000	830,500
	Communications and Computer Engineering								
	Intermedia Art and Science			786,500	790,500	790,500	794,000	794,000	838,500
	Modern Mechanical Engineering	982,000	785,500	786,500	790,500	790,500	794,000	795,000	839,500
	Civil and Environmental Engineering			785,500	789,500	789,500	793,000	793,000	837,500
	Physics	985,000	788,500	784,850	788,850	788,850	792,350	792,300	836,800
	Apllied Physics								
	Chemistry and Biochemistry			795,500	799,500	799,500	803,000	803,000	847,500
	Applied Chemistry								
	Life Science and Medical Bioscience			814,250	818,250	823,250	826,750	831,750	876,250
	Electrical Engineering and Bioscience			793,000	797,000	797,000	800,500	800,500	845,000
Yearly amount	Mathematics	1,733,500		1,535,000		1,542,500		1,590,500	
	Applied Mathematics			1,541,000		1,548,500		1,596,500	
	Electronic and Photonic Systems			1,577,000		1,584,500		1,632,500	
	Coumputer Science and Engineering			1,561,000		1,568,500		1,616,500	
	Communications and Computer Engineering								
	Intermedia Art and Science			1,577,000		1,584,500		1,632,500	
	Modern Mechanical Engineering	1,767,500		1,577,000		1,584,500		1,634,500	
	Civil and Environmental Engineering			1,575,000		1,582,500		1,630,500	
	Physics	1,773,500		1,573,700		1,581,200		1,629,100	
	Apllied Physics								
	Chemistry and Biochemistry			1,595,000		1,602,500		1,650,500	
	Applied Chemistry								
	Life Science and Medical Bioscience			1,632,500		1,650,000		1,708,000	
	Electrical Engineering and Bioscience			1,590,000		1,597,500		1,645,500	

*Those who wish to obtain a teaching license are required to pay an extra teacher training course auditing fee in the amount of 10,000 yen.
*There are certain courses offered by the Global Education Center which may require separate fees.
*40,000 yen for the alumni association membership fee (for the period of 10 years after graduation) is required in the spring semester of fourth year.

(3) Tuition and fees for students enrolled longer than the given terms

Tuition and fees for students enrolled for more than the standard 4-year period for undergraduate program are as follows:

Number of credits to be earned additionally for graduation	Tuition	Facility fee	Seminar fee
Up to 4 credits	50% of the fee for the fourth year	Fee for the fourth year	Fee for the fourth year
5 to 20 credits	70% of the fee for the fourth year		
21 or more credits	Fee for the fourth year		

* The "number of credits to be earned additionally for graduation" refers to the number calculated at the end of the first semester.
* For details about tuition and fees when you are on a leave of absence or study abroad, contact the Center for Science and Engineering. (Building No. 51, 1st floor)

(4) Payment method

Please pay tuition and fees by account transfer through your bank account of financial institutions including Japan Post Bank you have specified and registered with the university as part of admission procedure.

Be sure to check the Notice of Account Transfer that will be sent to your tuition and fees payer in advance. In case of any changes in the financial institution or account, please report them to the Center for Science and Engineering (on the 1st floor of Building 51 in the Nishi Waseda Campus).

Tuition and fees must be paid by the specified due dates mentioned above. If you have any special reasons making it impossible to do so, consult the Center for Science and Engineering.

(5) Removal from the School Register

If you fail to pay tuition and fees, you are removed from the school register and accordingly, lose the student status of the university. This applies with retroactive effect as of the end of the last semester for which you paid tuition and fees. In this case, part of the years at school and grades are cancelled. If you want to withdraw from the university for some special reason before the date when you would be automatically removed from the school register (refer to the table below), consult the Center for Science and Engineering.

Tuition and fees	Due date for payment	Date of automatic removal from the school register	Date of withdrawal
Tuition and fees for the fall semester	October 1	March 31 of the following year	September 20
Tuition and fees for the spring semester	May 1	September 20	March 31

5 Course Groups

Courses of this school are roughly divided into Group A to D (refer to the table below). Contents of each Group are explained in more detail in subsequent sections.

Group A	A1 (Multidisciplinary Studies) A2 (Foreign Language Courses)
Group B	B1 (Mathematics) B2 (Natural Sciences) B3 (Laboratory / Recitation) B4 (Information Science Courses)
Group C	Specialized Courses
Group D	Physical Education / Independent Studies

Courses of Groups A to D are divided into courses that are counted toward graduation and courses that are not counted for graduation:

(1) Courses that are counted toward the credits required for graduation

These courses are further divided into the following types. The grades of the courses are recorded on the grade report.

Required courses	Courses that you must take, pass, and earn credit of for graduation
Elective required courses	Courses that you must select from a specified range of courses, pass, and earn credit of for graduation
Elective courses	Courses that you can select freely from relevant elective courses and earn at least a specified minimum number of credits of for graduation

(2) Courses that are not counted toward the credits required for graduation

Non-degree course	Courses that allow you to earn credits when you achieve a passing score, which are recorded on the grade report but do not count as credits for graduation

The academic year consists of the fall semester and the spring semester, each of which is made up of 15 weeks. Courses are basically divided into year-round courses (full-year courses), courses provided only in the fall semester (fall semester courses), and courses provided only in the spring semester (spring semester courses).

(3) Number of credits required for graduation

The table on the next page lists the specified minimum numbers of credits required to be earned from individual Groups toward graduation. Since there is a **"Gap"** between **the total minimum numbers of credits you must earn for graduation (136 credits)** and **the total minimum numbers of credits to be earned from Group A to D.** You may do so in the following ways.

- Earn more credits from courses in Groups A, B, or C than the minimum number required for graduation.
- Earn credits from courses in Group D (Physical Education / Independent Studies). Up to 4 credits can be counted for graduation. For more details, refer to Section III -10 in this handbook.
- Earn credits from courses offered by other departments within your home School, other Schools in the Faculty of Science and Engineering (FSE), or Faculties other than or bodies outside of FSE. For more details, please refer to Section III-11 in this handbook. Please note that non-degree courses are not counted as credits toward graduation.

Department	Group																	Degree
	Specified number of credits required for Groups A to C														Number of credits ("Gap") you can earn freely from Groups A to D or other courses: Number of credits required for graduation – (total number of credits required for Groups A to D)	Total	
	Group A				Group B						Group C			Group D				
	A1	A2			B1	B2			B3	B4	Specialized courses			Optional				
	Multidisciplinary Studies	English	Japanese	Foreign Languages (other than English and Japanese)	Mathematics	Natural sciences: Physics	Natural sciences: Chemistry	Natural sciences: Life science	Laboratory / Recitation	Information Science Courses	Required courses	Elective required courses	Elective courses	Physical Education/ Independent Studies				
Mathematics	6	2	0	0	20	4	4	2	8	4	8	22	25	0	31	**136**		B. Science
Applied Mathematics											8	22	25		31			B. Engineering
Electronic and Photonic Systems											8	8	39		31			B. Engineering
Computer Science and Engineering											8	8	39		31			B. Engineering
Communications and Computer Engineering											8	8	39		31			B. Engineering
Intermedia Art and Science											8	8	39		31			B. Engineering
Modern Mechanical Engineering											6	40	4		36			B. Engineering
Civil and Environmental Engineering											21	30	4		31			B. Engineering
Physics											22	16	17		31			B. Science
Applied Physics											22	16	17		31			B. Engineering
Chemistry and Biochemistry											0	0	55		31			B. Science
Applied Chemistry											0	0	55		31			B. Engineering
Life Science and Medical Bioscience											0	0	55		31			B. Engineering or B. Science
Electrical Engineering and Bioscience											0	0	55		31			B. Engineering

* There are certain courses within the "Group C Elective Courses" which are strongly recommended for students in each Department.

(4) Provisional Graduate Enrollment System

From the viewpoint of coherent education between undergraduate and graduate programs, the School adopts a system under which fourth year students can take specified lecture courses offered by graduate schools at which they go on to study. Earned credits under this system are counted toward the credits required for completion of master's programs (30 credits) up to upper limits set by individual departments, as shown on the following table;

Graduate School	Dept. of	Upper limit on the number of credits (earned under this system) to be counted toward completion of master's programs
Fundamental Science and Engineering	Pure & Applied Mathematics	10
	Computer Science & Communications Engineering	10
Creative Science and Engineering	Modern Mechanical Engineering	10
	Civil & Environmental Engineering	0
Advanced Science and Engineering	Pure & Applied Physics	10
	Chemistry & Biochemistry	10
	Applied Chemistry	10
	Life Science & Medical Bioscience	10
	Electrical Engineering & Bioscience	10
	Integrative Bioscience & Biomedical Engineering	10
	Nanoscience & Nanoengineering	10

For more details about the system & procedures, refer to the Course Registration Guide to be distributed at the beginning of the semester's course registration periods in every academic year.

(5) Notice of absence

(1) If you were absent from a class or examination of any courses registered with the School or the Global Education Center due to special circumstances (e.g. illness requiring medical attention), you must obtain a Notice of Absence from the Center for Science and Engineering (at 1st floor of Building 51 in Nishi Waseda Campus) and submit them to instructors in charge. If, however, you were absent from classes of a laboratory work course, submit a Notice of Absence forms to the relevant laboratories (some laboratories may specify other special form to fill in).

(2) If you were absent from classes of a course offered by other Faculties outside of FSE, notify your absence with Notice of Absence forms specified by them according to their procedure.

(3) Notice of Absence forms must be accompanied by proof showing reasons of your absence (e.g. copy of a medical certificate).

6 Group A Courses (Multidisciplinary Studies and Foreign Language Courses)

Group A courses are divided into Group A1 (Multidisciplinary Studies) and Group A2 (Foreign Language Courses). You must earn the specified number of credits from this group according to the course requirements and restrictions specified by your department.

(1) Specified minimum number of credits of different departments

All Departments

	Group A1	Group A2 (Foreign Language Courses)		
	(Multidisciplinary studies)	English (required course)	Japanese	Foreign Languages (other than English and Japanese)
Specified minimum number of credits	6 credits	2 credits	0 credits	0 credits

(2) Group A1 courses (Multidisciplinary Studies)

This course group consists of courses in the humanities and social sciences. This group also includes courses that discuss connections of the humanities and social sciences with science and engineering.

Students are required to earn a total of 6 credits from Group A1 courses to graduate. Unless specified otherwise by their department or school, students are free to select which courses they will take to fulfill this requirement. If a student chooses to take more than 6 credits of Group A1 courses, then any credits above the required number will be counted among the number of credits you can earn freely from Groups A to D.

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
History of Philosophy	2	2							
Introduction to Logic	2	2							
History of Japan	2	2							
Philosophy of Science	2		2						
Introduction to Ethics	2		2						
Introduction to Social and Political Thought	2		2						
Topics in History and Philosophy of Science	2		2						

(3) Group A2 courses (Foreign language courses)

(I) English

Students are required to earn a total of 2 credits from Group A2 courses to graduate. These 2 credits must be earned by taking Writing for Scientists and Engineers (1 credit) and Research Presentation Skills (1 credit). Students must take both of these courses in their second year.

English (required course)

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Writing for Scientists and Engineers	1			2					
Research Presentation Skills	1				2				

(II) Second Foreign Language: Japanese

In addition to English, Japanese is offered as a foreign language. The Center for Japanese Language (CJL) offers many language courses. Credits that students earn in these courses are counted as credits in the category "Gap". The "Japanese Language Proficiency Examination" is commonly used to measure Japanese language proficiency. To understand university-level classes given in Japanese, it is generally said that a level of proficiency at least sufficient to pass the First Class examination is needed. The table below indicates the approximate hours of language study, the number of kanji characters, and number of vocabulary words corresponding to each examination class. Students in the International Program in Science and Engineering are not required to study Japanese to earn a degree, but they are encouraged to study it. Learning Japanese will enable one to communicate more easily with Japanese students and faculty. In addition, if one develops proficiency equivalent to passing the First Class Examination, one may take many classes at the university that are currently only offered in Japanese. For these reasons, students are strongly recommended to begin taking Japanese language classes from their first year.

Proficiency Exam Class	Hours of Study	Number of Kanji	Number of words
1st Class	900 hours	2,000 characters	10,000 words
2nd Class	600 hours	1,000 character	6,000 words
3rd Class	300 hours	300 characters	1,500 words
4th Class	150 hours	100 characters	800 words

Most of the Japanese language classes are held at the main Waseda campus, but some are held at the Nishi-Waseda campus. For details on Japanese language classes, please consult the homepage of the Center for Japanese Language noted below.

Center for Japanese Language: http://www.waseda.jp/cjl/en/index.html

7 Group B Courses (Mathematics, Natural Sciences, Laboratory / Recitation, Information Science Courses)

The aim of Group B courses is to provide the foundational knowledge in the sciences and mathematics necessary to understand more specialized fields. The courses include mathematics, physics, chemistry, science, life science and engineering laboratory, and information science. Students are required to take courses specified by their department as required courses, and earn the specified minimum number of credits for this group.

(1) Required courses and the specified minimum number of credits

All Departments

	Required Courses						Elective Required Courses		
Group	(I): Group B1 (Mathematics)						(II): Group B1 (Mathematics)		
Course Name	Calculus A	Calculus B	Linear Algebra A	Linear Algebra B	Vector Calculus	Ordinary Differential Equations	Introduction to Probability and Statistics	Discrete Mathematics	Partial Differential Equations
Allocation Year - Semester	1st year Fall	1st year Spring	1st year Fall	1st year Spring	2nd year Fall	2nd year Fall	1st year Fall	2nd year Fall	2nd year Spring
Number of Credits	4 credits	4 credits	2 credits	2 credits	2 credits	2 credits	2 credits	2 credits	2 credits
Specified minimum number of credits	16 credits						4 credits		

	Required Courses				
Group	Group B2 (Natural Science)				
	(III): Physics		(IV): Chemistry		(V): Life Science
Course Name	Fundamentals of Mechanics	Fundamentals of Electromagnetism	General Chemistry A	General Chemistry B	Introduction to Bioscience
Allocation Year - Semester	1st year Fall	1st year Spring	1st year Fall	1st year Spring	1st year Fall
Number of Credits	2 credits	2 credits	2 credits	2 credits	2 credits
Specified minimum number of credits	4 credits		4 credits		2 credits

	Required Courses				
Group	(VI): Group B3 (Laboratory / Recitation)			(VII): Group B4 (Information Science Courses)	
Course Name	Science and Engineering Laboratory 1A	Science and Engineering Laboratory 1B	Science and Engineering Laboratory 2A	Introduction to Programming	Introduction to Computer Science
Allocation Year - Semester	1st year Spring	2nd year Fall	2nd year Spring	1st year Fall	1st year Spring
Number of Credits	3 credits	3 credits	2 credits	2 credits	2 credits
Specified minimum number of credits	8 credits			4 credits	

(I): Courses List of Mathematics (Required Courses)

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Calculus A	4	4							
Linear Algebra A	2	2							
Calculus B	4		4						
Linear Algebra B	2		2						
Vector Calculus	2			2					
Ordinary Differential Equations	2			2					

(II): Courses List of Mathematics (Elective Required Courses)

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Introduction to Probability and Statistics	2	2							
Discrete Mathematics	2			2					
Partial Differential Equations	2				2				

(III): Courses List of Physics (Required Courses)

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Fundamentals of Mechanics	2	2							
Fundamentals of Electromagnetism	2		2						

(IV): Courses List of Physics (Elective Courses)

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Modern Physics	2			2					
Introduction to Biophysics	2			2					
Nonlinear Dynamics	2				2				

(V): Courses List of Chemistry

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
General Chemistry A	2	2							
General Chemistry B	2		2						

(VI): Courses List of Science

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Introduction to Bioscience	2	2							

(VII): Courses List of Laboratory / Recitation

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Science and Engineering Laboratory 1A	3		8						
Science and Engineering Laboratory 1B	3			8					
Science and Engineering Laboratory 2A	2				4				

(VIII): Courses List of Information Science

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Introduction to Programming	2		2						
Introduction to Computer Science	2	2							

(IX): Courses List of Information Science

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Codes and Ciphers	2		2						
Introduction to Computational Modeling	2			2					
Introduction to Automata	2				2				

8 Group C Courses (Specialized Courses)

Specialized courses are divided into specialized required courses, specialized elective required courses, and specialized elective courses.

(1) Specialized required courses

Each department in the School is characterized by specialized required courses, and you must take appropriate specialized courses in your department according to years of courses being allocated.

(2) Specialized elective required courses

These are courses that you must select from among a limited range of specified courses and earn a certain number of credits of them.

(3) Specialized elective courses

Students can take specialized elective courses to earn credits according to their interests. A certain number of specialized elective courses must be taken to graduate. Several departments in the School of Advanced Science and Engineering have courses that they strongly recommend for their undergraduate students. In addition, some departments in the Faculty of Science and Engineering require or strongly recommend certain courses for students hoping to attend a graduate program in the Faculty of Science and Engineering. If you have any questions regarding what specialized electives to register for, please consult your class academic advisor.

Notes on taking Group C courses

- **Courses names including Roman numerals (I, II, or III) and courses that must be taken in a specified order cannot be taken until credits for prerequisite courses are earned.**
- **Courses names including "A," "B," and "C" can be taken at the same time.**

9 List of Group C Courses and Requirements for each Department

Department of Mathematics

The Department of Mathematics provides instruction in a wide range of areas in mathematics, such as algebra, geometry, analysis, probability and statistics. Our faculty members have research interests in number theory, algebraic geometry, algebraic analysis, differential geometry, topology, partial differential equations, real analysis, variational theory, foundations of mathematics, computer science, numerical analysis, and mathematical physics. We also work closely with the Department of Applied Mathematics to enhance our course offerings in areas related to applied mathematics.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	22	25

- If you have earned more than 22 credits in IPSE Group C specialized elective required courses offered by the Department of Mathematics, the excess credits can be appropriated to IPSE Group C specialized elective courses.

To register for Research Project A, B, C, or D

- You must have completed all required Group A and B courses.

List of specialized courses for the Department of Mathematics

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Foundations of Analysis	2			2					
Foundations of Algebra	2			2					
Foundations of Geometry	2				2				
Numerical Analysis	2				2				
Exercises in Fundamental Mathematics	4				4				
Advanced Algebra	2					2			
Advanced Geometry	2					2			
Advanced Analysis	2					2			
Probability and Statistics	2					2			
Research Project A	2					2			
Mathematics of Simulation	2						2		
Applied Algebra	2						2		
Applied Geometry	2						2		
Applied Analysis	2						2		
Number Theory	2						2		
Functional Analysis	2						2		
Stochastic Processes	2						2		
Research Project D	2								2
Specialized elective required course total	38	0	0	4	8	10	14	0	2

Department of Applied Mathematics

The Department of Applied Mathematics aims to provide its students with a solid understanding of the fundamentals of mathematics and develop their ability to apply mathematics to problems in the natural sciences, social sciences, and engineering. For second and third year students we offer courses emphasizing the fundamentals of mathematics. For third and fourth year students, we offer courses that deal with the application of mathematics to areas such as physics, computer science, and economics.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	22	25

- If you have earned more than 22 credits in IPSE Group C specialized elective required courses offered by the Department of Applied Mathematics, the excess credits can be appropriated to IPSE Group C specialized elective courses.

To register for Research Project A, B, C, or D

- You must have completed all required Group A and B courses.

List of specialized courses for the Department of Applied Mathematics

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Foundations of Analysis	2			2					
Foundations of Algebra	2			2					
Foundations of Geometry	2				2				
Numerical Analysis	2				2				
Exercises in Fundamental Mathematics	4				4				
Advanced Algebra	2					2			
Advanced Geometry	2					2			
Advanced Analysis	2					2			
Probability and Statistics	2					2			
Research Project A	2					2			
Mathematics of Simulation	2						2		
Applied Algebra	2						2		
Applied Geometry	2						2		
Applied Analysis	2						2		
Number Theory	2						2		
Functional Analysis	2						2		
Stochastic Processes	2						2		
Research Project D	2								2
Specialized elective required course total	38	0	0	4	8	10	14	0	2

Department of Electronic and Photonic Systems

Note: The name of Department of Electronic and Photonic Systems will change to Department of Electronic and Physical Systems starting from the Academic Year 2015.

Our Department offers a program of study that integrates electronics with computer engineering. We enable students to pursue graduate work and careers in which an understanding of both hardware and software systems is essential. In the area of electronics, we offer courses in circuit theory, logic circuits, and electronic circuits. In the area of computer engineering, we offer courses in communication network systems, multimedia systems, and computer architecture. Our curriculum balances technical depth and breadth while providing flexibility for students to explore their interests. Through their undergraduate years, students can progress step-by-step from basic to advanced courses and gain a broad view of both of these areas. The Department also offers opportunities for students to engage in cutting-edge research.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	8	39

- If you have earned more than 8 credits in IPSE Group C specialized elective required courses offered by the Department of Electronic and Photonic Systems, the excess credits can be appropriated to IPSE Group C specialized elective courses..
- You are not permitted to undertake a research project or graduation thesis in a department other than your own.

To register for Research Project B

- You must have completed all required Group A and B courses, and earned at least 90 credits.

To register for Research Project C

- You must have completed Research Project B.

List of specialized courses for the Department of Electronic and Photonic Systems

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Circuit Theory A	2			2					
Logic Circuits	2			2					
Computer Systems	2				2				
Electronic Circuits	2					2			
Information Theory	2						4		
Specialized elective required course total	10	0	0	4	2	2	4	0	0

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring Semester
Fundamentals of Programming	2			2					
Algorithms and Data Structures	2				2				
Electrodynamics	2				2				
Computer Science and Engineering Laboratory	2					4			
Signal Processing	2					2			
Information Network Systems	2					2			
Communication Systems	2					2			
Research Project A	2					2			
Software Engineering	2					2			
Teletraffic Theory	2					2			
Info-telecommunication and the Standardization	2					2			
Introduction to Computer Graphics and Image Processing	2					2			
Information Telecommunication Systems	2					4 (first half)			
Transmission Theory	2						2		
Wireless Communication	2						2		
Multimedia Systems	2						2		
Mobile Communications	2						2		
Information Security Basics	2						2		
Operating Systems	2						2		
Network Engineering	2							2	
Wireless Communications Network	2							2	
Digital Imaging	2							2	
Digital System Design	2							4 (sec-ond half)	
Research Project D	2								2
Image Processing	2								2
Advanced Computer Architecture	2								2
Advanced Processor Architecture	2								2
Specialized elective course total	54	0	0	2	4	24	12	10	8

Department of Computer Science and Engineering

Our Department provides students with a solid understanding of the fundamental areas of computer science and electrical engineering and opportunities to pursue projects in a number of different areas. We conduct research on hardware (e.g. system LSI design and ultra high-performance and ultra low-power computer architecture), software (e.g. programming languages, compilers, software engineering, algorithms, artificial intelligence), networks (e.g. Internet, multimedia, mobile devices, security, cloud computing, and ubiquitous networks), and data mining (e.g. information search methods, bioinformatics). We provide lectures to introduce students to the technical knowledge involved in these areas, but knowledge is only one part of what we hope to develop in our students. In addition to technical knowledge, we aim to develop their critical, communication, and leadership skills. Our lectures are structured in a way that helps students acquire these abilities and we encourage students to take courses in other fields to broaden their intellectual horizons.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	8	39

- You are strongly recommended to take Discrete Mathematics.
- If you have earned more than 8 credits in IPSE Group C specialized elective required courses offered by the Department of Computer Science and Engineering, the excess credits can be appropriated to IPSE Group C specialized elective courses..
- You are not permitted to undertake a research project or graduation thesis in a department other than your own.

To register for Research Project B

- You must have completed all required Group A and B courses, and earned at least 90 credits.

To register for Research Project C

- You must have completed Research Project B.

List of specialized courses for the Department of Computer Science and Engineering

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Circuit Theory A	2			2					
Logic Circuits	2			2					
Fundamentals of Programming	2			2					
Algorithms and Data Structures	2				2				
Computer Systems	2				2				
Signal Processing	2					2			
Computer Science and Engineering Laboratory	2					4			
Information Network Systems	2					2			
Research Project A	2					2			
Operating Systems	2						2		
Information Security Basics	2						2		
Research Project D	2								2
Specialized elective required course total	24	0	0	6	4	10	4	0	2

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Electrodynamics	2				2				
Electronic Circuits	2					2			
Communication Systems	2					2			
Software Engineering	2					2			
Teletraffic Theory	2					2			
Info-telecommunication and the Standardization	2					2			
Introduction to Computer Graphics and Image Processing	2					2			
Information Telecommunication Systems	2					4 (first half)			
Information Theory	2						4		
Transmission Theory	2						2		
Wireless Communication	2						2		
Multimedia Systems	2						2		
Mobile Communications	2						2		
Network Engineering	2							2	
Perceptual Computing	2							2	
Wireless Communications Network	2							2	
Digital Imaging	2							2	
Information Retrieval	2							2	
Digital System Design	2							4 (sec-ond half)	
Advanced Intelligent Software	2							2	
Analysis of Networked Systems	2							2	
Image Processing	2								2
Advanced Image Information	2								2
Advanced Information Networks	2								2
Reliable Software	2								2
Information Integration of Symbols and Patterns	2								2
Distributed Embedded and Real-Time Processing	2								2
Advanced Computer Architecture	2								2
Advanced Processor Architecture	2								2
Wireless Signal Processing	2								2
Software Quality Assurance	2								2
Computer Vision and Pattern Analysis	2								2
Foundation for Information Access Evaluation	2								2
Specialized elective course total	66	0	0	0	2	16	12	18	24

Department of Communications and Computer Engineering

The Department of Communications and Computer Engineering aims to produce experts in the field of information communication who possess specialized up-to-date knowledge acquired after gaining basic technical knowledge through the study of information and communications technology (ICT), which is an academic field that merges network and computer technologies. As a technology that supports the advanced intellectual activity required for a variety of industrial sectors, information communication technology is a technical domain that is indispensable to modern society. The Department provides a curriculum that covers the following three areas of this field: information systems, communication networks, and media content. The Department offers courses that introduce students to each of these areas. To ensure that students not only acquire knowledge of information communication, but also develop their problem-solving abilities and presentation skills, they are required to complete a research project in their fourth year.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	8	39

- You are strongly recommended to take Discrete Mathematics.
- If you have earned more than 8 credits in IPSE Group C specialized elective required courses offered by the Department of Communications and Computer Engineering, the excess credits can be appropriated to IPSE Group C specialized elective courses.
- You are not permitted to undertake a research project or graduation thesis in a department other than your own.

To register for Research Project B

- You must have completed all required Group A and B courses, and earned at least 90 credits.

To register for Research Project C

- You must have completed Research Project B.

List of specialized courses for the Department of Communications and Computer Engineering

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Circuit Theory A	2			2					
Logic Circuits	2			2					
Fundamentals of Programming	2			2					
Algorithms and Data Structures	2				2				
Computer Systems	2				2				
Signal Processing	2					2			
Computer Science and Engineering Laboratory	2					4			
Information Network Systems	2					2			
Research Project A	2					2			
Operating Systems	2						2		
Information Security Basics	2						2		
Research Project D	2								2
Specialized elective required course total	24	0	0	6	4	10	4	0	2

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Electrodynamics	2				2				
Electronic Circuits	2					2			
Communication Systems	2					2			
Software Engineering	2					2			
Teletraffic Theory	2					2			
Info-telecommunication and the Standardization	2					2			
Introduction to Computer Graphics and Image Processing	2					2			
Information Telecommunication Systems	2					4 (first half)			
Information Theory	2						4		
Transmission Theory	2						2		
Wireless Communication	2						2		
Multimedia Systems	2						2		
Mobile Communications	2						2		
Network Engineering	2							2	
Perceptual Computing	2							2	
Wireless Communications Network	2							2	
Digital Imaging	2							2	
Information Retrieval	2							2	
Digital System Design	2							4 (second half)	
Advanced Intelligent Software	2							2	
Analysis of Networked Systems	2							2	
Image Processing	2								2
Advanced Image Information	2								2
Advanced Information Networks	2								2
Reliable Software	2								2
Information Integration of Symbols and Patterns	2								2
Distributed Embedded and Real-Time Processing	2								2
Advanced Computer Architecture	2								2
Advanced Processor Architecture	2								2
Wireless Signal Processing	2								2
Software Quality Assurance	2								2
Computer Vision and Pattern Analysis	2								2
Foundation for Information Access Evaluation	2								2
Specialized elective course total	66	0	0	0	2	16	12	18	24

Department of Intermedia Art and Science

The Department of Intermedia Art and Science was established with the idea of exploring new forms of expression through the fusion of science and technology with artistic expression. The courses in Intermedia Art and Science have been organized so that students are able to gain extensive knowledge and develop their creativity after having learned the basics of engineering and artistic expression. Students may take courses in areas such as image processing, multimedia systems, acoustic systems, and human-robot interaction. The inclusion of creative sessions besides classroom lectures is a notable feature of our curriculum and has the objective of imparting technical know-how along with theoretical knowledge. Building on this foundation, they carry out a research project in fields such as video engineering, audio engineering, ergonomics, sensing engineering, virtual reality, design, music, fine arts, semiotics, human-robot interaction, or narrative theory. Through their participation in a research project student also develop their presentation skills. A graduation thesis or creative work is submitted at the end of four years.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
8	8	39

- If you have earned more than 8 credits in IPSE Group C specialized elective required courses offered by the Departments of Intermedia Art and Science, the excess credits can be appropriated to IPSE Group C specialized elective courses.
- You are not permitted to undertake a research project or graduation thesis in a department other than your own.

To register for Research Project B

- You must have completed all required Group A and B courses, and earned at least 90 credits.

To register for Research Project C

- You must have completed Research Project B.

List of specialized courses for the Department of Intermedia Art and Science

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Research Project B	4						2		
Research Project C	4							2	
Specialized required course total	8	0	0	0	0	0	2	2	0

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Fundamentals of Programming	2			2					
Algorithms and Data Structures	2				2				
Computer Systems	2				2				
Signal Processing	2					2			
Research Project A	2					2			
Acoustic Systems	2					2			
Multimedia Systems	2						2		
Human-Computer Interaction	2						2		
Image Processing	2								2
Research Project D	2								2
Specialized elective required course total	20	0	0	2	4	6	4	0	4

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Circuit Theory A	2			2					
Information Design: Methods and Applications	2			2					
Fundamentals of Robotics A	2			2					
Electrodynamics	2				2				
Fundamentals of Visual Expression and Design	2				2				
Fundamentals of Robotics B	2				2				
Electronic Circuits	2					2			
Communication Systems	2					2			
Software Engineering	2					2			
Introduction to Computer Graphics and Image Processing	2					2			
Information Telecommunication Systems	2					4 (first half)			
Information Theory	2						4		
Wireless Communication	2						2		
Mobile Communications	2						2		
Information Security Basics	2						2		
Operating Systems	2						2		
Virtual Reality and Communication	2						2		
Recording Technology	2						2		
Network Engineering	2							2	
Perceptual Computing	2							2	
Digital System Design	2							4 (sec-ond half)	
Advanced Intelligent Software	2							2	
Advanced Image Information	2								2
Information Integration of Symbols and Patterns	2								2
Computer Vision and Pattern Analysis	2								2
Specialized elective course total	50	0	0	6	6	12	16	10	6

Department of Modern Mechanical Engineering

The Department of Modern Mechanical Engineering aims to educate engineers who can design technologies that resolve many pressing issues of our time. To educate such engineers, we not only provide students with courses but also the opportunity to engage in a research project. These projects typically involve the design, development, and evaluation of technologies that aim to solve environmental problems, assist with the needs of elderly people and their caretakers, or help alleviate the suffering of those with medical conditions. These projects are not merely an opportunity to learn "technology development", but an opportunity for "human development" because these projects typically require students to work as a team, which means that they must develop their communication skills. Given the practical nature of technology, we believe that development of these skills can be acquired by actually working together on a project, and that these skills constitute a practical knowledge distinct from scientific knowledge. We provide students with an opportunity to acquire both kinds of knowledge by offering lecture classes and a chance to be involved in a research project. We believe that such education is necessary to develop engineers who can respond quickly, effectively, and imaginatively to the problems of today and the future.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
6	40	4

To register for Graduation Thesis A

- You must have completed all required Group A and B courses and have earned 40 credits from the Department of Modern Mechanical Engineering before entering their fourth year.

To register for Graduation Thesis B

- You must have completed Graduation Thesis A.

List of specialized courses for the Department of Modern Mechanical Engineering

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Graduation Thesis A	3							◎	
Graduation Thesis B	3								◎
Specialized required course total	6	0	0	0	0	0	0	◎	◎

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Visual Thinking	2		4						
Mechanical Design A	2			2					
Fundamentals of Robotics A	2			2					
Environmental Science A	2			2					
Engineering Thermodynamics	2			6					
Mechanical Design B	2				2				
Fundamentals of Robotics B	2				2				
Environmental Science B	2				2				
Fluid Dynamics	2				2				
Seminar A	2				2				
Mechatronics Laboratory A	2				4				
Engineering Practice A	2				4				
Seminar B	2					2			
Mechatronics Laboratory B	2					4			
Engineering Practice B	2					4			
Measurement and Instrumentation	2					2			
Mechanical Engineering Laboratory A	2						4		
Seminar C	2						2		
Engineering Practice C	2						4		
Mechanical Engineering Laboratory B	2							4	
Specialized elective required course total	40	0	4	12	18	12	10	4	0

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Civil and Environmental Engineering A	2		2						
Soil Mechanics	2			2					
Hydraulics A	2			2					
Materials and Structures A	2			2					
Fundamentals of Urban Studies and Planning A	2			2					
E-business, Technology, and Legal Affairs	2			2					
Applied Mathematics for Civil and Environmental Engineers	2			2					
Resources Processing and Recycling	2					2			
Earth and Environmental Science	2					2			
Specialized elective course total	18	0	2	12	0	4	0	0	0

Department of Civil and Environmental Engineering

Through its education and research, the Department of Civil and Environmental Engineering aims to provide the basis to transform current human society into a sustainable society. Our faculty has research interests in three main areas: infrastructure, environment and disaster prevention, and urban planning and management. In the area of infrastructure, three research groups focus on structural mechanics and structural design and one research group focuses on concrete engineering. In the area of environment and disaster prevention, there is one research group in each of the following five sub-areas: coastal engineering, water environmental engineering, river engineering, soil mechanics, and soil and foundation engineering. In the area of urban planning and management, there is one research group in each of the following three sub-areas: city planning, transportation planning, and landscape and design.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
21	30	4

To register for Graduation Thesis A

- You must have earned 8 or more credits from courses in Group A
- You must have earned 42 or more credits from courses in Group B
- You must have earned 36 or more credits from required or elective required courses in Group C
- You must have earned at least 110 credits in total
- You must have completed all the laboratory work courses offered at the Department of Civil and Environmental Engineering as required courses allocated to first to third year students.

To register for Graduation Thesis B

- You must have completed Graduation Thesis A.

It is not allowed to register Graduation Thesis offered by other departments. It is not allowed for students in other departments to register Graduation Thesis A, B and all the lab works, practice and exercise courses offered by the Department of Civil and Environmental Engineering.

List of specialized courses for the Department of Civil and Environmental Engineering

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Structural Mechanics	2		2						
Soil Mechanics	2			2					
Hydraulics A	2			2					
Environmental Engineering A	2			2					
Fundamentals of Urban Studies and Planning A	2			2					
Concrete Engineering	2					2			
Laboratory Work on Structures	1					4			
Laboratory Work on Concrete	1						4		
Laboratory Work on Hydraulics and Water Quality	1						4		
Graduation Thesis or Project A	3							◎	
Graduation Thesis or Project B	3								◎
Specialized required course total	21	0	2	8	0	6	8	◎	◎

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Civil and Environmental Engineering A	2		2						
Surveying	2		2						
Surveying Practice	1		4						
Materials and Structures A	2			2					
Civil and Environmental Engineering B	2			2					
Spatial Information and Intelligent System in Construction	2			2					
Spatial Information Practice	1			4					
Applied Mathematics for Civil and Environmental Engineers	2			2					
Geotechnical Engineering	2				2				
Hydraulics B	2				2				
Materials and Structures B	2				2				
Fundamentals of Urban Studies and Planning B	2				2				
Environmental Engineering B	2				2				
Structure Design Practice	1				2				
Steel Material and Structure	2				2				
Bridge Engineering	2						2		
Environmental Geotechnics	2						2		
Coastal and Port Engineering	1						2		
International Development and Planning	2						2		
Computer Aided Design (CAD)	2						2		
Advanced Topics in Civil Engineering C	1							2 (Intensive)	
Specialized elective required course total	37	0	8	12	14	0	10	2	0

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Mechanical Design A	2			2					
Fundamentals of Robotics A	2			2					
Environmental Science A	2			2					
E-business, Technology, and Legal Affairs	2			2					
Resources Processing and Recycling	2					2			
Earth and Environmental Science	2					2			
Specialized elective course total	12	0	0	8	0	4	0	0	0

Department of Physics

The Department of Physics focuses its education and research activities in the fields of particle physics / astrophysics, solid-state (condensed-matter) physics, and biophysics. We aim to provide students with a solid understanding of fundamental physics as well as introduce them to areas at the forefront of research. Our department works in close cooperation with the Department of Applied Physics. In addition to the courses offerings in our department, we encourage students to take courses in the Department of Applied Physics, especially if they are interested in applying their knowledge of physics toward the development of new technologies.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
22	16	17

- If you have earned more than 16 credits in IPSE Group C specialized elective required courses offered by the Department of Physics, the excess part can be appropriated to IPSE Group C specialized elective courses.

To register for Graduation Thesis A

- You must have earned more than 104 credits from courses other than group D and non-degree courses, and other than courses for teacher's license.
- You must have earned more than 18 credits totally from specialized required courses and specialized elective required courses. In addition, all the specialized required courses for the first and the second years must have been completed.

To register for Graduation Thesis B

- You must have completed Graduation Thesis A.

List of specialized courses for the Department of Physics

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Intermediate Electromagnetism	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Statistical Mechanics	2					2			
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized required course total	22	0	0	6	6	2	0	◎	◎

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Materials Physics A	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Power Systems Engineering	2					2			
Fluid Mechanics	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Specialized elective required course total	34	2	2	0	6	8	12	4	0

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Physiology	2			2					
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry B	2				2				
Introduction to Industrial Chemistry	2				2				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Intermediate Bioscience	2					2			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Microbiology	2					2			
Physical Chemistry B	2					2			
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Physics of Semiconductor devices II	2						2		
Power System and Nuclear Power Generation Theory	2							2	
Specialized elective course total	75	2	0	12	18	26	24	2	0

Department of Applied Physics

The Department of Applied Physics aims to develop individuals who possess a thorough knowledge of physics and are able to apply that knowledge toward the development of new technologies. To this end, the department's curriculum is intended to give students a solid training in the fundamentals of physics and applied mathematics. Equipped with this training, students are able to pursue further studies in fields such as solid-state physics, optics, electrical engineering, and computer science. For their graduation theses, students carry research projects that draw upon their knowledge of physics and laboratory skills. In addition to projects in the Department of Applied Physics, students who are interested in fundamental physics may carry out research projects in the Department of Physics.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
22	16	17

- If you have earned more than 16 credits in IPSE Group C specialized elective required courses offered by the Department of Applied Physics, the excess part can be appropriated to IPSE Group C specialized elective courses.

To register for Graduation Thesis A

- You must have earned more than 104 credits from courses other than group D and non-degree courses, and other than courses for teacher's license.
- You must have earned more than 18 credits totally from specialized required courses and specialized elective required courses. In addition, all the specialized required courses for the first and the second years must have been completed.

To register for Graduation Thesis B

- You must have completed Graduation Thesis A.

List of specialized courses for the Department of Applied Physics

(I) Specialized required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Intermediate Electromagnetism	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Statistical Mechanics	2					2			
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized required course total	22	0	0	6	6	2	0	◎	◎

(II) Specialized elective required courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Materials Physics A	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Power Systems Engineering	2					2			
Fluid Mechanics	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Specialized elective required course total	34	2	2	0	6	8	12	4	0

(III) Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Physiology	2			2					
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry B	2				2				
Introduction to Industrial Chemistry	2				2				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Intermediate Bioscience	2					2			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Microbiology	2					2			
Physical Chemistry B	2					2			
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Physics of Semiconductor devices II	2						2		
Power System and Nuclear Power Generation Theory	2							2	
Specialized elective course total	75	2	0	12	18	26	24	2	0

Department of Chemistry and Biochemistry

Chemistry is a field that studies syntheses, reactions, and functions of substances at the molecular level. Although it has produced many useful substances such as medicines, synthetic fabrics, plastics, and other functional materials, some of these substances have been found to cause diseases and environmental pollution. The major challenge for chemistry in the twenty-first century is to provide the theoretical and experimental foundations for the development of substances and technologies that are useful and environmentally safe. The Department of Chemistry and Biochemistry educates individuals to become scientists who are capable of bringing deep insights to deal constructively with this challenge.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
0	0	55

There are no specific Group C courses that students must complete to graduate from the Department of Chemistry and Biochemistry, but they are strongly recommended to complete courses according to the following guidelines. First, they should complete five out of nine Group C courses offered by the Department of Chemistry and Biochemistry (Green Materials Science, Inorganic Chemistry A, Inorganic Chemistry B, Organic Chemistry A, Organic Chemistry B, Physical Chemistry A, Physical Chemistry B, Biochemistry, and Chemical Biology). Second, they should complete three laboratory Group C courses offered by the Department of Chemistry and Biochemistry (Physical Chemistry Laboratory, Inorganic and Analytical Chemistry Laboratory, and Organic Chemistry Laboratory). A student must earn a total of 55 credits of Group C courses offered by any department participating in the International Program in Science and Engineering.

Although Graduation Thesis A and Graduation Thesis B are not required for graduation, students wishing to register Graduation Thesis A and Graduation Thesis B must complete the requirements according to the guidelines noted below.

To register for Graduation Thesis A, B

- You must have earned 8 or more credits from courses in Group A.
- You must have earned 42 or more credits from courses in Group B.
- You must have earned 10 or more credits from nine Group C courses noted above.
- You must have earned 8 credits to complete three laboratory Group B3 required courses: Science and Engineering Laboratory 1A, 1B, and 2A.
- You must have earned 9 credits to complete three laboratory Group C courses offered by the Department of Chemistry and Biochemistry: Physical Chemistry Laboratory, Inorganic and Analytical Chemistry Laboratory, and Organic Chemistry Laboratory.
- You must have earned at least 116 credits in total.

List of specialized courses for the Department of Chemistry and Biochemistry

Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Intermediate Electromagnetism	2			2					
Physiology	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Materials Physics A	2				2				
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry B	2				2				
Introduction to Industrial Chemistry	2				2				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Statistical Mechanics	2					2			
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Power Systems Engineering	2					2			
Intermediate Bioscience	2					2			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Fluid Mechanics	2					2			
Physical Chemistry B	2					2			

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Microbiology	2						2		
Physics of Semiconductor devices II	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Power System and Nuclear Power Generation Theory	2							2	
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized elective course total	131	4	2	18	30	34	38	6	0

Department of Applied Chemistry

The Department of Applied Chemistry has a history dating back nearly a century and thus has a rich store of admirable traditions. The education and research in our department aims at developing highly functional materials and innovative chemical processes. We are also engaged in interdisciplinary research involving areas such as materials science, biology, medicine, and environmental science. The undergraduate curriculum provides students with a solid foundation in the major areas of applied chemistry (organic chemistry, inorganic chemistry, physical chemistry, analytical chemistry, and chemical engineering). In addition, our curriculum requires students to learn about risk management and ethical issues involved in science. Through such a curriculum, we aim to educate students who can become active members of the chemistry community. Thus, graduating from our department opens a gateway to graduate study as well as to many professions related to chemical engineering, environmental science, biotechnology, and nanotechnology.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
0	0	55

There are no specific Group C courses that students must complete to graduate from the Department of Applied Chemistry. Students may choose to write a thesis, but in that case they must complete two sets of requirements before taking Graduation Thesis A and Graduation Thesis B. First, they must complete seven out of eleven of the following Group C courses offered by the Department of Applied Chemistry or the Department of Chemistry and Biochemistry: Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Biochemistry, Introduction to Chemistry and Biochemistry, Introduction to Applied Chemistry, Introduction to Industrial Chemistry, Fundamentals of Chemical Engineering, Fundamentals of Materials Chemistry, Green and Sustainable Chemistry, and Analytical Chemistry. Second, they must complete three out of four of the following Group C laboratory courses offered by the Department of Chemistry and Biochemistry or the Department of Life Science and Medical Bioscience: Physical Chemistry Laboratory, Inorganic Analytical Chemistry Laboratory, Organic Chemistry Laboratory, and Biomedical Science Laboratory. Including the above, a student must earn a total of 55 credits of Group C courses offered by any department participating in the International Program in Science and Engineering.

List of specialized courses for the Department of Applied Chemistry

Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Intermediate Electromagnetism	2			2					
Physiology	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Materials Physics A	2				2				
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry B	2				2				
Introduction to Industrial Chemistry	2				2				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Statistical Mechanics	2					2			
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Power Systems Engineering	2					2			
Intermediate Bioscience	2					2			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Fluid Mechanics	2					2			
Physical Chemistry B	2					2			

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring Semester
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Microbiology	2						2		
Physics of Semiconductor devices II	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Power System and Nuclear Power Generation Theory	2							2	
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized elective course total	131	4	2	18	30	34	38	6	0

Department of Life Science and Medical Bioscience

The Department of Life Science and Medical Bioscience draws upon molecular biology and bioengineering to elucidate our understanding of biological phenomena and develop new biomedical technologies. Since our research involves many fields, including physics, chemistry, biology, medical science, and engineering, it possesses a highly interdisciplinary character. Our undergraduate curriculum also reflects this character by requiring students to gain a solid foundation in both science and engineering. Such a background, we believe, will enable students to become scientists and engineers who can meet the biomedical demands of the future.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
0	0	55

There are no specific Group C courses that students must complete to graduate from the Department of Life Science and Medical Bioscience, but they are recommended to take the following Group C courses offered by the Department of Life Science and Medical Bioscience:「Molecular Cell Biology A」,「Molecular Cell Biology B」,「Bioscience and Nanotechnology」,「Intermediate Bioscience」,「Microbiology」,「Introduction to Medical Science」「Life Science and Medical Bioscience Seminar I」,「Life Science and Medical Bioscience Seminar II」,「Life Science and Medical Bioscience Laboratory」,「Intermediate Life Science and Medical Bioscience Laboratory」 and 「Advanced Life Science and Medical Bioscience Laboratory」. A student must earn a total of 55 credits of Group C courses offered by any department participating in the International Program in Science and Engineering.

Requirements for commencement of graduation research

The student is required to attain all the necessary credits forecasted for graduation including the credits of specific subjects that have been specified by the Department of Life Science and Medical Bioscience by the end of the third grade (3rd year). Detailed information regarding these requirements will be further provided during the guidance at the start of the fiscal year.

List of specialized courses for the Department of Life Science and Medical Bioscience

Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Intermediate Electromagnetism	2			2					
Physiology	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Materials Physics A	2				2				
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry A	2				2				
Introduction to Industrial Chemistry	2				2				
Life Science and Medical Bioscience Laboratory	6				12				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Statistical Mechanics	2					2			
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Life Science and Medical Bioscience Seminar I	2					2			
Power Systems Engineering	2					2			
Intermediate Bioscience	2					2			
Intermediate Life Science and Medical Bioscience Laboratory	6					12			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Fluid Mechanics	2					2			

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Physical Chemistry B	2					2			
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Microbiology	2						2		
Life Science and Medical Bioscience Seminar II	2						2		
Advanced Life Science and Medical Bioscience Laboratory	4						12		
Physics of Semiconductor devices II	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Power System and Nuclear Power Generation Theory	2							2	
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized elective course total	151	4	2	18	42	48	52	6	0

Department of Electrical Engineering and Bioscience

With the growth in importance of areas such as environmental energy, nanotechnology, optical electronics, and biomedical engineering, there has arisen a need for individuals with a dual background in electrical engineering and bioscience. Our department aims to answer that need by educating individuals who possess such a dual background and by conducting research that bridges those two areas. We encourage students to develop a program of study that suits their specific interests while maintaining familiarity with both electrical engineering and bioscience. Through such a curriculum, we hope to inculcate students with a multidisciplinary perspective.

Required Group C Courses

Number of Minimum Credits		
Specialized Required Courses	Specialized Elective Required Courses	Specialized Elective Courses
0	0	55

There are no specific Group C courses that students must complete to graduate from the Department of Electrical Engineering and Bioscience. A student must earn a total of 55 credits of Group C courses offered by any department participating in the International Program in Science and Engineering.

Rules for Joining a Department Professor Research Group

1. Provisional Membership

- Only third-year students may become provisional members of one of the Department Professor Research Groups at the beginning of the autumn semester.

- Every applicant for provisional membership must have completed at least 80 credits toward graduation by the end of the spring semester of the second year.

- Every applicant for provisional membership must choose a Department Professor Research Group where he/she wishes to study, from among the Department Professor Research Groups which have announced they will be accepting provisional members (Professor Research Groups may refuse to accept provisional members for reasons such as safety, efficiency, and capacity).

- The quota for provisional members to each Professor Research Group is only one student every two years (no students can become the provisional member to a Professor Research Group to which a student was provisionally assigned in the previous year, and multiple students cannot become a provisional member to each Professor Research Group in the same year). If more than one student applies for provisional membership to a Professor Research Group, priority must be determined at a department faculty meeting based on their grades and other information).

- Every provisional member should acquire the knowledge, skills and languages necessary to complete a graduation thesis as directed by his/her supervisor. He/she should also register and complete courses in subjects designated by the supervisor.

- Every provisional member may register for the ordinary Project Research B course in the autumn semester of the third year (this is not compulsory). In such cases, his/her grade will be determined on the basis of an assessment carried out by his/her supervisor.

- Whether he/she has registered for Project Research B or not, every provisional member must go to his/her Professor Research Group room for study every weekday, attend seminar classes, make presentations, and meet other requirements as assigned by his/her supervisor.

2. Regular Membership

- Only provisional members may become regular members of his/her Professor Research Group at the beginning of the autumn semester of fourth-year. They cannot change their Professors Research Groups at and beyond this point.

- Every applicant for regular membership must have completed at least 120 credits toward graduation by the end of the spring semester of the third year.

- Every applicant for regular membership must have obtained, in advance, approval from his/her supervisor (the Professor Research Group may refuse to accept the applicant for reasons such as safety, efficiency, and capacity).

- Every regular member must conduct his/her graduation thesis under the instruction of his/her supervisor.

- Every regular member must register for Graduation Thesis A and B in the international course. No students who are not regular members may register for these courses.

- Although Graduation Thesis A and B carry only four credits each, every regular member must go to his/her Professor Research Group room for study every weekday, attend seminar classes, make presentations, and meet other requirements as assigned by his/her supervisor.

3. Qualified Membership

- A qualified member may be admitted by recommendation to the master's program of his/her Professor Research Group (Master's Program International Course of the Department of Electrical Engineering and Bioscience).

- Every applicant for qualified membership must already be a regular member. Students are not recommended for admission to a different Professor Research Group.

- Every applicant for qualified membership must have a GPA of 2.5 or higher when he/she becomes a regular member.

- Every applicant for qualified membership must be approved based on a recommendation by his/her supervisor at a department faculty meeting.

- Every qualified member cannot refuse to be admitted for personal reasons. Once students become qualified members to the master's program, they cannot leave for personal reasons (such as career change) before completing the program. Any student who violates these rules will not be given any credit for Graduation Thesis A and B if they are yet to graduate, and will be unable to get any recommendation from the department or its academic staff.

- If a qualified member fails to graduate at the end of the fourth-year, the qualified membership and the recommendation to the master's program will be cancelled.

List of specialized courses for the Department of Electrical Engineering and Bioscience

Specialized elective courses

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Green Materials Science	2	2							
Pure and Applied Physics Seminar	2	2							
Exercises for Fundamental Physics	2		2						
Intermediate Mechanics	2			2					
Mathematical Methods for Physics A	2			2					
Inorganic Chemistry A	2			2					
Organic Chemistry A	2			2					
Introduction to Applied Chemistry	2			2					
Fundamentals of Chemical Engineering	2			2					
Molecular Cell Biology A	2			2					
Intermediate Electromagnetism	2			2					
Physiology	2			2					
Quantum Mechanics A	2				2				
Mathematical Methods for Physics B	2				2				
Thermal Physics	2				2				
Materials Physics A	2				2				
Physical Chemistry A	2				2				
Biochemistry	2				2				
Organic Chemistry A	2				2				
Introduction to Industrial Chemistry	2				2				
Molecular Cell Biology B	2				2				
Bioscience and Nanotechnology	2				2				
Advanced Electromagnetism	2				2				
Introduction to Computational Physics	2				2				
Inorganic Chemistry B	2				2				
Neuroscience	2				2				
Advanced Electrical Engineering	2				2				
Quantum Mechanics B	2					2			
Relativity	2					2			
Statistical Mechanics	2					2			
Physical Chemistry Laboratory	3					6			
Fundamentals of Materials Chemistry	2					2			
Analytical Chemistry	2					2			
Field work in Research Institutions and Industry	2					2			
Power Systems Engineering	2					2			
Intermediate Bioscience	2					2			
Advanced Electric Power Devices and Machines	2					2			
Smart Grid and Frontiers in Electric Energy Systems	2					2			
Fluid Mechanics	2					2			

Course Name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Physical Chemistry B	2					2			
Introduction to Medical Science	2					2			
Physics of Semiconductor devices I	2					2			
Materials Physics B	2						2		
Engineering Physics A	2						2		
Biological Physics A	2						2		
Inorganic Analytical Chemistry Laboratory	3						6		
Chemical Biology	2						2		
Organic Chemistry Laboratory	3						6		
Industrial Chemistry	2						2		
Mathematical Programming	2						2		
Electric Power Circuits	2						2		
Frontiers of Device Engineering	2						2		
Solar Cell Engineering	2						2		
System Control	2						2		
On-line Security Assessment and Control for Power Systems	2						2		
Microbiology	2						2		
Physics of Semiconductor devices II	2						2		
Engineering Physics B	2							2	
Biological Physics B	2							2	
Power System and Nuclear Power Generation Theory	2							2	
Graduation Thesis A	4							◎	
Graduation Thesis B	4								◎
Specialized elective course total	131	4	2	18	30	34	38	6	0

10 Group D Courses (Physical Education / Independent Studies)

In addition to credits for courses provided by this school, you can take Physical Education courses and Independent Studies courses to earn up to 4 credits, which are counted toward the credits needed for graduation.

(1) Physical Education courses

You can take up to 2 Physical Education courses (up to 4 credits) per year. You may take theories and/or activities.

For more details, refer to the Guidebook issued by the Global Education Center.

(2) Independent Studies courses

Volunteers

This course requires students to submit an "activity report" and a report describing achievements for welfare activities, disaster relief activities, or other social activities related to human rights, peace, the environment, or other deep problems of human society in which they were involved for their own motives. The said two reports will be evaluated, and, if deemed passing score, the final grade will be given to you with 2 credits as a Group D courses. Students can take this course from 2nd year.

(Note) In order to take this course, students must submit in advance to the Center for Science and Engineering a "volunteer application form" and consent letter by your guarantor. By submitting the application form to the Office, you will be insured by accident insurance for injuries you may have and by liability insurance for damage you may cause on other during your volunteer activities.

Internships

This course provides an opportunity for students to experience, in private / public companies or research institutions, during summer or spring holidays, how what they have studied in specialized courses of their department is used in actual production sites.

Students are graded comprehensively according to reports submitted by the companies or institutions where they did internship activities, and reports or presentation they made, and other applicable results. This course covers overseas training too. Students can take this course from 3rd year.

(Note) To take this course, you must submit an "Application for Internship Participation" to the Center for Science and Engineering in advance. By submitting this application, you will

be insured by accident insurance for injuries you may have and by liability insurance for damages you may cause on other during your activities.

If you have a "Student Visa", please make sure that the work demands of the internship does not violate the terms of your visa.

List of Independent Studies courses

Course name	Number of credits	Number of hours per week							
		First year		Second year		Third year		Fourth year	
		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester
Volunteer	2			◎	◎				
Internship	2					◎	◎		

11 Courses Offered by Other Programs, Departments, Schools, or Faculties

For courses that are categorized as courses of other programs, departments, schools, and faculties, the credits earned for these courses can be applied toward credits required for graduation up to the upper limit shown in "Table 1".

Please note that you are not allowed to take any course that either has the same name or provides the same content as a course in your home department.

In principle, you are not allowed to take laboratory work, field work, seminars or drafting work, Bachelor's thesis, or graduation research at other programs, departments, schools, or faculties

Table 1: Credit categories for courses taken outside of your own course and department

Course Type	Counted as
(1) IPSE courses offered by sub-programs other than one's home sub-program	Group C elective courses. * Counted toward graduation without an upper credit number limit.
(2) Non-IPSE "Group C" courses offered by any department in FSE (*note: Non-IPSE means existing regular programs taught mostly in Japanese*)	Group C elective courses. * Counted toward graduation without an upper credit number limit.
(3) Non-IPSE "Group A or B" courses offered by any department in FSE	"*Number of credits you can earn freely from Groups A to D or other courses*" (see Section 5 "Course Groups" of Chapter III of this "Handbook"). * Counted toward graduation with an upper credit number limit of 16. * English language courses in non-IPSE cannot be taken by IPSE students.
(4) Courses offered by Schools outside of FSE (i.e., Schools belonging to Faculties other than FSE)	"*Number of credits you can earn freely from Groups A to D or other courses*" * Counted toward graduation without an upper credit number limit.
(5) Courses offered by Center for International Education (CIE: Non-FSE body[3]) and non-Physical Education courses offered by Global Education Center (GEC: Non-FSE body) [1]	"*Number of credits you can earn freely from Groups A to D or other courses*" * Counted toward graduation with an upper credit number limit of 16.
(6) Physical Education courses offered by Global Education Center (GEC: Non-FSE body) [1]	"*Number of credits you can earn freely from Groups A to D or other courses*" * Counted toward graduation as Group D (Physical Education / Independent Studies) with an upper credit number limit of 4.
(7) Japanese language courses offered by the Center for Japanese Language (CJL) [2]	"*Number of credits you can earn freely from Groups A to D or other courses*" * Counted toward graduation without an upper credit number limit.

[1] Global Education Center (URL: http://web.waseda.jp/gec/)

The Global Education Center offers a tremendous variety of courses, open to all students on subjects that go beyond the boundaries of each student's specializations and majors. In addition to lecturers and seminars, established courses include practical forms that offer problem-solving and experience-oriented courses conducted in cooperation with business enterprises here and abroad.

As the necessary skills that make up the foundation of all learning for college students, academic writing education ("Creating Academic Writing," etc.), mathematics education ("Basic Mathematics Plus α" (money interest), etc.), statistics education ("Statistics Literacy α," etc.), information education ("Information Representation using PC/ network"), and English education ("General Tutorial English," etc.) are available. Courses in rare languages that are rarely offered or not taught at Waseda University and a diverse number of distinctive sports training and athletics programs are also established.

Through the Global Education Center, in addition to one's major course of study, students have the opportunity to study other areas systematically to enhance one's major and to "add a second string to one's bow."

[2] Center for Japanese Language (URL: http://www.waseda.jp/cjl/)

Of the 4,000 international students attending Waseda University, 1,900 are enrolled in Japanese language courses. The Center for Japanese Language (CJL) provides Japanese language courses designed for any international student who chooses to enroll and also provides Open Courses (cross-listed minor courses) related to the Japanese language and Japanese language education, mainly targeting Japanese students.

These courses are designed for students to acquire extensive and systematic knowledge of Japanese applied linguistics and learn about what teaching Japanese entails. Waseda University students interested in study abroad, intercultural communication, international exchange, linguistics, the Japanese language, or Japanese language education are recommended to first enroll in "An Introduction to Japanese Language Education," which offers wide-ranging and easy-to-understand lessons in Japanese language education.

For information about Japanese language courses offered by the Center for international students in all schools, please refer to the above URL. The Course Registration Guide and the syllabuses are available at the Center for Japanese Language (4th Floor of Building No. 22). The contents are also available in PDF format at the above URL.

Beginning in AY2012, we are also offering Japanese Short-Term Courses meant for international students. These courses, which are designed for Japanese learners, are offered 4 times a year (Spring, Summer, Fall, and Winter Terms) and are 6-weeks long (skills-based subjects which are offered in the Summer Term are 3-weeks in length).

★Furthermore, the Center encourages Japanese students to serve as “Japanese language class volunteers” for its programs and on average, about 450 of Waseda University students act as Japanese language study partners for international students. Interested students should refer to the above URL for details.

[3] Center for International Education (URL: http://www.waseda.jp/cie/index-j.html)

In addition to providing services and assistance to international students and Waseda students intending to study abroad, the Center for International Education (CIE) provides an independent framework for the promotion of international education programs with courses offered both here in Japan and abroad. The Center maintains a diverse catalog of courses for undergraduate students, including courses conducted in English and in Chinese; courses made available to Waseda University students who are on overseas study abroad programs, or on short-term study abroad programs focusing on language learning, theme research, or cross-cultural experiences; and courses centered on advanced research seminars in collaboration with students from the world’s top universities.

Many of the courses on offer are also applicable to the Global Leadership Studies minor, established in AY 2012, and are designed to provide a basic understanding of leadership and its demands in the global society of tomorrow. Enrolled students are encouraged to use this as a springboard and seek to further challenge themselves by applying for one of 10-15 slots available as part of the Global Leadership Fellows Program (GLFP). For more information, click the following URL.

(URL: http://www.waseda.jp/cie/index-j.html)

Registration for short-term study abroad programs, beginning with AY2013, will be conducted in both Spring and Summer Terms. With this option, students who find it hard to participate in a long-term study abroad commitment will be able to have the opportunity to experience a short-term program while also earning credits.

12 How to Obtain a Teacher's License

Students who want to obtain a teacher's license **should read the Guide to Teacher Training Program issued by the Teacher Training Program of the School of Education of Waseda University thoroughly, and take required courses conducted in Japanese in a well-planned manner from the first year.** As a rule, take curricular courses according to the list of curricular courses for your department. Classes of pedagogical courses are provided in the School of Education (Waseda Campus). So always check the course registration schedule or other notices posted by the School of Education.

For further information, please come to ask Center for Faculty of Science and Engineering.

Shown below are the types of teacher's licenses that you can obtain:

Types of teacher's licenses that can be obtained

Type of teacher's license	Subject		
Junior high school teacher of class 1	Mathematics	Science	
High school teacher of class 1	Mathematics	Science	Information

13 Registration of Courses to Take

(1) Selection and registration

Students must register (apply for and confirm the registration of) courses to take for a given academic year during the specified course registration periods.

In selecting courses, read this Handbook, the web syllabi, the Course Registration Guide, etc. thoroughly, set your own learning targets, and be sure that your schedule is not too tight. Consult your class academic advisor or receive his/her guidance, as needed, so that you can select appropriate courses. For details about how to register courses, read the documents handed out in the beginning of the academic year. Be careful not to register the wrong courses or fail to register necessary courses.

To attend courses provided by other schools or departments, refer to "III-11 Courses Offered by Other Programs, Departments, Schools, or Faculties" in the book.

Syllabi on the web https://www.wsl.waseda.jp/syllabus/JAA101.php?pLng=en

(2) Prohibition of attending courses not registered

You are not allowed to attend classes of a course for which are you are not registered. You cannot earn credits for a course in which you are not registered even if you attend the classes and/or complete the requirements for that course.

(3) Prohibition of changing courses once registered

Once the registration period ends, you are not allowed to change or cancel your course registration. Please take care in registering for your courses and be sure to confirm your registration results. For more details about registration procedures, please refer to the Course Registration Guide.

14 Class Time Slots

The class time slots of Waseda University are as follows:

Period	1	2	3	4	5	6	7
Time	9:00 – 10:30	10:40 – 12:10	13:00 – 14:30	14:45 – 16:15	16:30 – 18:00	18:15 – 19:45	19:55 – 21:25

15 Examinations

Examinations include regular examinations (one to be held in the spring semester, and the other in the fall semester), report examinations, and in-class examinations.

Regular examinations are conducted during the specific examinations periods in the fall and spring semesters. The time slots for these examinations may be different from the usual class time period.

When taking examinations, keep the following in mind:

(i) Keep an eye on the time schedules of regular examinations and notice on examinations which may be provided after announcement of the schedule, which are posted on the main gate bulletin boards and the websites of the Center for Science and Engineering (Portal site: http://www.sci.waseda.ac.jp/index.html).

(ii) Time schedules & venues for exams may vary depending on student ID numbers, classes, or departments.

(iii) If examinations for two or more of your courses are scheduled in the same time slot, please inform the Center for Science and Engineering before the beginning of the examination period.

(iv) Please sign your student identification card and put it at the edge of your desk when taking exams. If you fail to take your student identification card with you, you may not be able to take your examinations. If you have lost your student identification card, you must request that it be reissued.

(v) In examination rooms, you must follow directions of proctors.

(vi) Write your name and student ID number clearly on the answer sheet.

(vii) If you cannot take examinations because of unavoidable reasons, such as bereavement, hospital admission due to illness or an accident, or a doctor's recommendation to stay at home, lectures in charge may consider alternative measures for the missed examination. You are requested to promptly contact lecturers in charge (and submit to them appropriate evidence such as certification issued by public organizations or medical institutions and follow their instructions)

(viii) Under School Regulations, those caught cheating in examination are suspended and stripped of credits of all courses registered during that semester. When exams have finished, you must submit all the answer sheets including blank ones to proctors. Leaving exam venues with answer sheets can be treated as cheating. Before exams begin, proctors announce to you acts or behaviors considered cheating. You must follow proctor's instructions during exams.

16 Notes on Preparing Reports or Theses

Using all or part of text written by others or materials from a book, a website, or other publications in a report, thesis, etc. without mentioning the source constitutes fraudulent use or plagiarism, and will be punished.

The general rule in quoting or referring to others' sentences or materials when offering your opinions is to specify the quoted part with quotation marks or in other relevant ways and to give the source (specify the author's name, title, page, publisher, and year of publication, or the website address and the date of access) correctly. Please note that when quoting a large portion of a book or website it may be necessary to request the author's permission before using the material.

17 Posting of Grades

Grades are announced on the Waseda-net portal by a date specified each semester. Please check the date of grade announcement in the websites or bulletin board of the Center for Science and Engineering.

Grades are indicated by A+, A, B, C, and F. The grades A+ to C are passing grades, but F is a failing grade. In addition to these grades, the symbols H, S, and * are used in a grade report.

H... Means that the grade for the course is on hold. If you receive this mark, please check the bulletin board of the Center for Science and Engineering for more information. Receive instructions from the instructor. If you do not follow instructions of the instructor, the grade F is automatically given when a given academic year ends.

S.... Given when a student fails a Group C specialized required course, but is allowed to take the same course in the next academic year along with another course scheduled in the same time slot. You are required to submit an assignment and/or take exams as advised by the instructor(s) in charge of the course.

*.... Means that you have registered for the course, but the instructor in charge has not given grades for the course.

Grade	A+	A	B	C	F	H	S
Score	100 - 90	89 - 80	79 - 70	69 - 60	59 -		
Transcript	A+	A	B	C	No indication		
Judgment	Pass					Fail	

Grade Point Average (GPA) Calculation

1. Calculation Formula

Waseda University uses an evaluation system with a set of conversion rates called Grade Points (4 points for A+, 3 points for A, 2 points for B, 1 point for C, and zero point for Failing Grades).

A Grade Point Average (GPA) is a score calculated by multiplying “total number of credits by grade point(A+, A, B etc.) ” and “corresponding grade point (4 for A+, 3 for A etc.) ”, then totaling the obtained figures for the all grades and dividing the result by “total number of registered credits”.

The total number of registered credits includes credits earned for failing grades.

This is calculated using the following formula:

<Calculation Formula>

$$\frac{\{(\text{No. of A+ credits} \times 4) + (\text{No. of A credits} \times 3) + (\text{No. of B credits} \times 2) + (\text{No. of C credits} \times 1) + (\text{No. of Failing Grades} \times 0)\}}{\text{Total number of registered credits}} = \text{GPA}$$

*The GPA will be rounded to the second decimal place.

2. Courses used in the GPA calculation

The GPA calculation considers only registered courses that count as credit toward graduation. The following grades, however, will not be included in the GPA calculation even if credit from the course is counted toward the minimum number of credits required for graduation.

・N

・H（※Once the H grade is changed to an A+, A, B, C, or F, then it is included in the GPA calculation）

3. GPA on the Grade Report and Transcript of Academic Record

Please note that the GPA will appear on the Grade Report, but not on the Transcript of Academic Record. We can issue a “Transcript of Academic Record / GPA” indicating the GPA and the grades used in the GPA calculation.

18 Examination for Department Transfer

All the undergraduate programs in the Faculty of Science and Engineering are designed as four-year programs. Most students choose to study in the department that they entered, but it is possible to transfer to another department. If you desire to transfer to another department, you may apply to take a department transfer examination.

Students in the School of Fundamental Science and Engineering have two opportunities to apply to take the department transfer examination. The first opportunity is at the end of the first year. You may apply to transfer to any department participating in IPSE. If you pass this examination, you will enter your chosen department as a second-year student. The second opportunity is at the end of the second year. Please note, however, that this time you may only apply to departments participating in IPSE that belong to the School of Fundamental Science and Engineering. If you pass this examination, you will enter your chosen department as a third-year student.

Students in the School of Creative Science and Engineering or the School of Advanced Science and Engineering have one opportunity to apply to take the department transfer examination. This opportunity is at the end of the first year. At this time you may apply to transfer to any department participating in IPSE. If you pass this examination, you will enter your chosen department as a second-year student.

For details regarding the application, procedures, and eligibility for department transfer, please see the site below:

http://www.sci.waseda.ac.jp/eng/students/transfer/

Ⅳ

Student Life

1 International Student Handbook

The International Student Handbook lists the services and programs available at Waseda University for international students. It also contains important information on daily life in Japan such as immigration procedures. The handbook is distributed for free at the International Student Orientation held by the Center for International Education. It is also available at: http://www.waseda.jp/cie/handbook/index.html

2 Faculty of Science and Engineering Website

The website of the Faculty of Science and Engineering provides various information regarding admission procedures, academic matters, and student affairs. The address of the website is: http://www.sci.waseda.ac.jp/eng/

3 Student Number

A specific student number is assigned to every student when he/she is enrolled. It is an 8-digit number. The first 2 digits represent the school code and the next 2 digits represent the year of enrollment (the last 2 digits of the year). The letter “G” in the next position indicates that the student is an IPSE student.

For the School of Fundamental Science and Engineering, the last 3 digits represent the student number in the school. For the School of Creative Science and Engineering and the School of Advanced Science and Engineering, the 6^{th} digit represents the department code (refer to “Department codes”) and the last 3 digits represent the student number.

A check digit (CD) is added after each student number, which is used when it is entered into a computer. A CD is added to prevent errors during number entry into a computer.

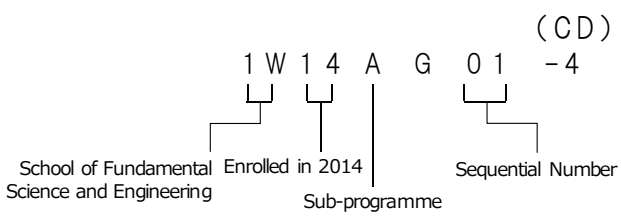
<School Codes>

1W	School of Fundamental Science and Engineering
1X	School of Creative Science and Engineering
1Y	School of Advanced Science and Engineering

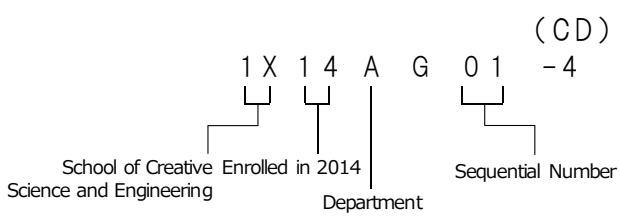
<Department Codes>

School of Creative Science and Engineering	
A	Department of Architecture
B	Department of Modern Mechanical Engineering
C	Department of Industrial and Management Systems Engineering
D	Department of Civil and Environmental Engineering
E	Department of Resources and Environmental Engineering
School of Advanced Science and Engineering	
A	Department of Physics
B	Department of Applied Physics
C	Department of Chemistry and Biochemistry
D	Department of Applied Chemistry
E	Department of Life Science and Medical Bioscience
F	Department of Electrical Engineering and Bioscience

(School of Fundamental Science and Engineering)



(School of Creative Science and Engineering and School of Advanced Science and Engineering)



4 Student Consultation

(1) Center for Science and Engineering

The Center, which is composed of General Affairs Section and Academic and Student Affairs Section, provides consultation on all academic matters including course registration, classes, examinations, grades, enrollment (leave of absence, studying abroad, withdrawal, etc.), classroom reservations, and scholarships. The Center also manages LOST and FOUND articles. If you have questions about any of these matters, contact the office as needed.

Contact Information:

[Address] 3-4-1 Okubo, Shinjuku-ku, Tokyo 169-8555
(1st floor, Building 51, Nishi-Waseda Campus)
[Tel / Fax] 03-5286-3002 / 03-5286-3500
[E-mail] soumu@sci.waseda.ac.jp (General Affairs Section)
gakumu@sci.waseda.ac.jp (Academic and Student Affairs Section)
[URL] http://www.sci.waseda.ac.jp/eng/students/

Office hours and holidays:

Monday through Saturday: 9:00 to 17:00
* The office is closed between 12:30 and 13:30 on Saturdays and during no-class periods.

Holidays: Saturdays during the summer and winter holiday periods, Sundays, national holidays, anniversary of the university founding (October 21), summer school closure and winter school closure.

(Note) Office processing may take longer during the summer and winter holiday periods than during the normal business hours.

(2) Class Academic Advisor

A class academic advisor system has been established to allow a class academic advisor to provide advice or guidance to you on school life. Those who wish to communicate with faculty member or want to receive advice from them about your study or private life should use this system to have a more meaningful school life. For more details, refer to the Course Registration Guide and the websites of the Faculty of Science and Engineering (http://www.sci.waseda.ac.jp/eng/). If you want to have a meeting with an advisor, make a reservation with the *kenkyushitsu* (faculty lab).

How to contact part-time lecturers

Contact information (addresses, telephone numbers, etc.) of part-time lecturers are not made public. To contact a part-time lecturer, put necessary documents in an envelope with the lecturer's name and your address and name, put a stamp, seal the envelope, and bring it to the *Kyoinshitsu* (faculty room, Building 52, 2nd floor).

* You can check the room numbers of *kenkyushitsu* (faculty labs) or e-mail addresses of full-time faculty in the syllabus or websites.

(3) Center for International Education (CIE)

The Center for International Education (CIE) provides various supports for international students. Contact the CIE office whenever you have questions or concerns about living in Japan.

Contact Information:

[Address] 1-7-14 Nishi-Waseda, Shinju-ku, Tokyo 169-0051 (4th floor, Building 22, Waseda campus)
[Tel / Fax] 03-3207-1454 / 03-3202-8638
[E-mail] cie@list.waseda.jp
[URL] http://www.cie-waseda.jp/en/
[Office hours] Monday through Saturday 9:00 – 17:00 (Lunch: 12:30-13:30)
*The office is closed on Saturdays during the summer and winter breaks

(4) Harassment Prevention

Waseda University has instituted a variety of measures as part of its commitment to harassment prevention. This includes not only the establishment of the *Waseda University Guidelines for Harassment Prevention*, as well as consultation and grievance procedures, but also through educational activities in print, online, and in seminars, etc. aimed at raising awareness and proactively deterring harassment.

Q: What constitutes harassment?
A: Harassment as defined by the University's guidelines includes all forms of expression and behavior, which reflects unfavorably, causes discomfort, or otherwise insults the dignity of the victim on matters including one's sex, social status, ethnicity, national origin, beliefs, age, occupation, physical characteristics or features, and one's identity. In general, harassment in universities takes one of the following forms: sexual harassment, any expression or behavior of an offensive, sexual nature; academic harassment, any offensive expression or behavior relating to one's studies, education, or research; and power harassment, any expression or behavior of an offensive nature made by a person of superior social standing or someone who has authority over the victim.

Q: Why is harassment considered a problem?
A: From the victim's perspective, harassment hinders the ability to establish and maintain a comfortable environment for learning, research, and employment; the overall impact of such negative behavior constitutes an infringement on the victim's human rights. Sometimes, actions and behavior taken by someone without the slightest thought can be the cause of almost unbearable distress to others. Harassment cases often have an adverse impact on the daily lives of those who have come forward as victims.

Q: Can students ever be accused of perpetrating harassment?
A: Yes, of course. For example, one could easily imagine the following scenario taking place at a social mixer involving students belonging to one of the University's many interest groups ("circles"). When a student makes repeated comments of a sexual nature in front of others; forces others to drink alcohol; or persistently asks a member to go out on a date, and such behavior results in other students feeling uncomfortable, these actions become examples of sexual harassment and power harassment.

Q: If you feel that you or someone you know may be experiencing "harassment in some form," what should you do?
A: If you feel that you are a victim of harassment, or know of a friend who may be a victim, or have a question or opinion regarding the University's policy and procedures, please do not hesitate to contact our Consultation Desk manned by our staff of trained professionals. For more information on the consultation process and other matters, check our website.

■ CONSULTATION DESK

Anonymous consultations are accepted via phone, email, fax, letter, and any other means in the initial stages. Your privacy and wishes are of outmost concern to us. Persons requesting an in-person consultation are asked to make an appointment by phone or via email.

【TEL】 03-5286-9824
*(When staff members are not available to answer calls due to a consultation appointment, callers may be asked to leave a message on the answering machine.)
【FAX】 03-5286-9825
【E-mail】stop@list.waseda.jp
【URL】http://www.waseda.jp/stop/index-e.html
Consultation Hours: Mon – Fri, 9:30-17:00
Location (Consultation Desk):
Building 24-8, 3F
1-104 Totsuka-machi
Shinjuku-ku, Tokyo 169-8050

5 Advancement to Graduate School

A five year doctoral course consists of a “master’s program” for two years and a “doctoral program” for three years.
To complete a master’s program, you must be enrolled in the graduate school for at least two years, obtain the specified number of credits set by each graduate school, receive necessary research instruction from a supervisor and pass the master’s thesis review and a final examination.
After completing the program, you are granted a master’s degree in engineering or in science.
Students who made outstanding research achievements may be granted a master’s degree with the approval of the Graduate School Steering Committee if they are enrolled in the program for at least one year.
We provide two different types of admissions, “Admission by Recommendation for the Master’s Program” and “Admission for the Master’s Program”.

1) Admission by Recommendation for the Master’s Program
This admission applies to students who graduate or expected to graduate from Waseda University with excellent academic performances.

2） Admission for the Master’s Program
①General Entrance Examination
General entrance examinations are provided for graduates and students expected to graduate from university.
The screening is made by document reviewing and sometimes interview examinations are conducted depending on desired departments.
②Admission by grade-skipping system for the Master’s Program
(Special admission for students enrolled in the undergraduate program for three years or longer)
We conduct this special admission for students enrolled in the undergraduate program for three years or longer and earned a specified number of credits with excellent results.
Please ask the Graduate Admissions Office in the Center for Science and Engineering about details of this admission.

To complete a doctoral program, you must be enrolled in the graduate school for at least three years, receive a required research instruction from a supervisor, and pass a doctoral thesis review and a final examination.
Graduate School Steering Committee may admit students enrolled in a doctoral program for at least 1 year to be granted a doctoral degree if they make outstanding research achievements.
After completing a doctoral program, you are granted a doctoral degree in engineering or in science.
We provide two types of admissions, “Admission by Recommendation for the Doctoral Program” or “General Entrance Examination”.
Please contact the Graduate Admissions Office in the Center for Science and Engineering for details of admissions for the doctoral program.

6 Employment

(1) Job hunting

Science and engineering students can apply to companies for a job under two different systems: the open application system and the recommendation system. The open application system allows students to apply directly to companies for a job according to job postings by companies. The recommendation system, a unique job application style for science and engineering students, is based on requests from companies to recommend applicants and, in response, the university (undergraduate schools, departments, etc.) recommends students. Companies may specify a department or a quota, so the university (undergraduate schools, departments, etc.) will ask for interested students and decide which individuals to recommend. A selection process is conducted if the number of applications exceeds the quota. For more details, refer to the career advisors of your department.

(2) Career advisors' guidance

Each department has career advisors who provide career guidance for graduating students. They provide appropriate and necessary guidance or advice on job hunting or going on to graduate school.

Students must report their job hunting activities to career advisors, including any informal job offers ("*Naitei*").

(3) Career Center

The Career Center in the Toyama Campus provides a wide variety of services ranging from how to go about job-hunting in Japan to supporting applications for a "job-hunting visa". The Career Center also periodically sends out emails of job listings for foreign students. To be placed on the mailing lists for this information, please send an email to career@list.waseda.jp with stating your full name and student ID number.

<Major activities>

- **Career workshop** (career experts give lectures on such topics as relationship between society and career planning.)
- **Other events to support career building** (events to communicate with working people including alumni.)
- **Career support events** (career guidance, workshops to learn about industries, seminars to learn manners, and mini-seminars on job hunting.)
- **Company and recruitment information** (through "Career Compass" in Waseda-net portal)
- **Introduction of internships and related seminars**
- **Visa application support ("job-hunting" visa)**

Contact Information:

[Address] 3rd floor of the Student Union Building, Building 30 in the Toyama Campus
[Tel] 03- 3203- 4332
[E-mail] career@list.waseda.jp
[URL] http://www.waseda.jp/career/eng/index.html
[Office hours] Weekdays: 9:00 – 18:00 Saturday:9:00 – 17:00

(4) Career Information room

(i) Job-postings (cards) for science and engineering students, company profiles and other reference materials are available in the Career Information Room located in the Building 61 in the Nishi-Waseda Campus.

(ii) In the said Career Information Room, you can get information on recruiting, various companies, and government and municipal offices, and find reference books to study industries or companies, information magazines, job hunting experience notes from your senior schoolmates and other materials.

7 Student Identification Card

Your student identification card can be used as an ID, and you may be required to present it in various academic situations. So always carry your student identification card with you and be careful not to damage or lose it.

The student identification card consists of a card and a back side sticker where the validity year is printed. The card is not valid until the back side sticker is put on to the backside of the card. A student identification card is valid for 1 year, specifically from April 1st of the year printed on the backside sticker to March 31st of the following year. Put your name in the signature space of the front surface.

(1) Issuance

For new students, a student identification card is issued in exchange for his/her examination admission card.

For second year students or seniors, a back side sticker is issued at the end of the fall semester. The student identification card can be renewed by replacing the sticker for the previous year with a new sticker. For students of the School of Fundamental Science and Engineering, the department name is printed in the back side sticker when they go on to a department.

If you want to change the photo on your student identification card while enrolled, you can change it free of charge only once. In that case, visit the Center for Science and Engineering and ask for change of it.

(2) Lost card

If you have lost your student identification card, report to the police immediately because it may be used fraudulently. Then, go through the reissuance procedure at the Center for Science and Engineering.

(3) Reissuance

To apply for reissuance of the lost card, submit the Application for Reissuance with a color photograph (4 cm vertical and 3 cm horizontal) of your face to the Center for Science and Engineering. Reissuance costs you 2,000 yen.

(4) Presentation

You must present your student identification card when you take examinations, use Waseda University Library or students' reading rooms, apply for issuance of various certificates or student discount cards ("*Gakuwari*"(学割)), receive handouts or are requested by the faculty or staff member of the university.

(5) Invalidation

When your status as a student ends following graduation or withdrawal, your student identification card is invalidated. Please immediately return it to the Center for Science and Engineering. When you graduate from the university, you are granted a diploma in exchange for your student identification card.

8 Issuance of Various Certificates

The Center for Science and Engineering issues certificates listed in the following table. Certificates are basically issued on the spot, but you should request for issuance of a certificate well in advance because it may take several days to issue one due to system maintenance or depending on the certificate type.

(1) Fees

Issuance of certificates costs you some fees.

Certificate issued to students: 200 yen per copy (including certificates requested by students by the end of the month of his/her graduation date)

Certificate issued to graduates or those who withdrew: 300 yen per copy

(2) Method of issuance

(1) Through automatic certificate issuing machines:
To use the machines which are installed at several locations in campuses, it is necessary to have your student identification card and your password for Waseda-net Portal ID.

(2) Through application at a counter of the Center for Science and Engineering:
Fill in the specified Application for Certificate Issuance, affix stamps (you can buy them on a vending machine inside the Center) on the application form, and submit it with your student identification card to the Center staff.

Certificate types
★Certificate of Enrollment
★Academic Transcript
★Certificate of Expected Graduation
Certificate of Graduation
★Certificate of Academic Transcript and Expected Graduation (Japanese only)
Certificate of Academic Transcript and Graduation (Japanese only)
Certificate of Withdrawal

*Certificates with (★) can also be issued by an automatic certificate-issuing machine.

(3) Student discount card ("*Gakuwari*")

You can get up to 10 student discount cards ("*Gakuwari*") issued per year from an automatic certificate-issuing machines.

9 Changes in the School Register

When there are any changes in your school registration status or in your guarantor's information, you must submit to the Center for Science and Engineering appropriate application forms and/or notices for such changes. The forms are available in the Center for Science and Engineering.

(1) Application for a leave of absence

(i) Requirements for a leave of absence

If you cannot attend classes (including examinations) for 2 consecutive months or longer because of illness or other legitimate reasons, you can take leave of absence by obtaining a permission from the dean of your School through the application procedures specified by the Faculty of Science and Engineering. Please first consult and ask your class academic advisor or supervisor to write their opinions on the form requesting for leave of absence and submit it to the Center for Science and Engineering by specified deadlines for the semester. Please note that leave of absence for taking an entrance examination of other universities is not permitted.

	Deadline to submit an application for leave of absence	End of leave of absence	Date of returning to school	Number of years of leave of absence
Fall semester	November 30	March 31 of the following year	April 1 of the following year	0.5 years
Spring semester	May 31	September 20	September 21	0.5 years

(ii) Period of leave of absence

Leave of absence is either leave of absence for the fall semester or leave of absence for the spring semester. If you have special circumstances, you may be allowed to take leave of absence for more than one semester by submitting application forms to the Center for Science and Engineering. The periods in which you take leave of absence are not counted into enrollment years. You cannot take leave of absence for more than 4 years in total.

(iii) Tuition and fees for the period of leave of absence

The tuition and fees to be paid during leave of absence will depend on the submission date of application forms. The payment details are as follows:

Fall semester	School expense	
If submitted from June 30 through October 31	Enrollment fee	50,000 yen
	Student Health Promotion Mutual Aid Association fee	1,500 yen
If submitted from November 1 through November 30	Tuition	Full amount for that semester
	Seminar fee	
	School expense	

Spring semester	School expense	
If submitted by April 30	Enrollment fee	50,000 yen
	Student Health Promotion Mutual Aid Association fee	1,500 yen
	Basic Education Enhancement fee	50,000 yen
If submitted from May 1 through May 31	Tuition	Full amount for that semester
	Seminar fee	
	Facility fee	

* If you take leave of absence upon entering the university, tuition and fees are not reduced.

(2) Application for studying abroad

(i) If you are to be engaged in educational or research activities at overseas universities or higher educational institutions for 4 months or longer, your registration status can be changed to "studying abroad" status with permission from the dean of your school through application procedures specified by the Faculty of Science and Engineering. If you are not sure whether your case is treated as studying abroad or not, check with the Center for Science and Engineering in advance.

(ii) While you are enrolled in the school, you can study abroad for up to 1 year. You can study abroad for longer if you have special reasons.

(iii) The period of study abroad is not basically included in the number of enrollment years, except for TSA and ISA programs (see "15 Study Abroad" for details). However, one semester or one year of the studying abroad period can be included in the number of enrollment years of the School if what you studied abroad is judged by the University to be equivalent to completion of part of the programs in your School in light of the number of credits you earned at overseas universities, the period required for earning them and other conditions. For more details, contact the Center for Science and Engineering.

(iv) For more details about tuition and fees during the period of studying abroad, contact the Center for Science and Engineering. If you join an overseas study program of the Center for International Education, contact them.

(3) Application for returning to school

(i) If you want to get readmitted to the School after a leave of absence or studying abroad, you have to follow instructions and necessary documents which are sent to your guarantor within an appropriate period of time by the Center for Science and Engineering.

(ii) You are only allowed to return to the School at the beginning of a semester.

(4) Application for withdrawal

(i) If you want to withdraw from the university, apply at the Center for Science and Engineering with your student identification card.

(ii) If you withdraw from the university during a semester, you have to pay tuition and fees for that semester. For more details, contact the Center for Science and Engineering.

(5) Application for readmission

If you withdraw from the university for legitimate reasons and apply for re-admission within 7 years from the following academic year of your withdrawal, you may be re-admitted at the beginning of a school year. Detailed information on it for a given academic year becomes available around November the previous year. For more details, contact the Center for Science and Engineering.

(6) Notice of change of name, address, guarantor, etc.

(i) In case of any changes in your address, phone number or other personal information, immediately register the new information from the Profile screen of the Waseda-net portal. If your address is changed, obtain a new back side sticker for the student identification card in the Center for Science and Engineering after an e-mail message for approval has been sent to your Waseda-net e-mail address.

(ii) In case of any changes in addresses and/or phone numbers of your guarantor or payer of tuition & fees, immediately go through specified procedures in the Center for Science and Engineering.

(iii) In case of any change in your visa status, immediately submit a copy of your foreign registration card or residence card (both sides) to the Center for Science and Engineering.

(iv) A change of your given and/or family name must be reported with a copy of passport or other applicable relevant documents.

(v) In case of change of your guarantor for death or other reasons, a new guarantor must be reported immediately to the Center for Science and Engineering.

10 Scholarships

Regular students enrolled in the undergraduate and graduate schools can apply for scholarships at Waseda University. However, the following students are **NOT** eligible: Japanese Government Scholarship (Monbukagakusho) students, students supported by overseas governments, students receiving scholarships from scholarship organizations for their tuition, and non-degree research students. Depending on your resident (VISA) status, there are two ways to apply for scholarships (You can only register one of the following):

(i) For students with resident (VISA) statuses of "Permanent Resident", "Long-Term Resident/Teijusha", "Spouse/Child of Japanese Resident", or "Spouse/Child of Permanent Resident" and Japanese students

Foreign nationals with the above statuses can only apply for scholarships for Japanese students in the same way as Japanese students. Those who wish to apply for the scholarships need to fill out an application document attached to the Scholarship Information Guidebook, "CHALLENGE", which is sent together with other enrollment information, and submit it by the deadline. "CHALLENGE" is also available at the Center for Science and Engineering from January through March. Please note that the above students cannot apply for the scholarships (**ii**) below (described in the "International Students Handbook").

Scholarship information is available on the website of the Faculty of Science and Engineering (http://www.sci.waseda.ac.jp/students/scholarship/) and also posted on the Main gate bulletin board in Nishi-Waseda Campus.

(ii) For students with resident (VISA) statuses other than the statuses in i) above

Privately financed regular international students can apply for scholarships for international students. For more details, please refer to the "International Students Handbook." Scholarship information is also posted on the bulletin board in the Center for Science & Engineering (1st floor of Building 51) and the URL below.

http://www.sci.waseda.ac.jp/students/scholarship/international/offering/

11 Rules on Use of Bulletin Boards

(1) Strictly observe the following rules in using standing signboards, notices and fliers in campuses:

(i) Required information
Clubs or student groups registered with the university: Specify the group name.
Clubs or student groups not registered with the university: Specify the group name and the department, academic year and name of the representative of the group.

(ii)False advertisements, invasions of privacy of other people and defamation are prohibited.

(iii)Notices against these rules may be removed without prior notification. Groups that violate these rules may no longer be permitted to use any standing signboards or give out notices or fliers.

(2) Standing signboards

As a rule, clubs or other student groups are not permitted to use standing signboards on the Nishi-Waseda Campus. However, they may be permitted to use standing signboards if it is judged that there is a justifiable reason.

(3) Notices

For details about bulletin boards, refer to the table on the next page. Observe the following rules in using bulletin boards. Notices against these rules will be removed.

(i) Apply to the Center for Science and Engineering (Academic and Student Affairs Section) for approval for use of the bulletin board.

(ii) Notices can be put on the bulletin boards for up to 3 weeks after approval is obtained.

(iii) Follow the notice size and number rules described below:

Bulletin board near the main gate: 55 cm long and 45 cm wide (size of a newspaper page) or smaller, 1 sheet

Bulletin board in buildings: 40 cm long and 27 cm wide (size of half a newspaper page) or smaller, Up to 2 sheets

(iv) Please use thumbtack when putting notices on bulletin boards. For bulletin boards on which thumbtacks cannot be used, use masking tape.

(v) Remove expired notices on your own.

(4) Distribution of fliers

Observe the following rules strictly in distributing fliers on campus:

(i) Distributing fliers for advertisement or for other commercial purposes (as a part-timer, etc.) is prohibited.

(ii) You are only allowed to distribute fliers by hand. Do not force people to accept fliers. Putting fliers on classroom desks, which gets in the way of conducting classes, is prohibited.

List of bulletin boards

Location	Bulletin board	Purpose
Main gate bulletin board	General information bulletin board	Information about notices posted on other bulletin boards Information about lecture meetings Event information Information about student societies' events, internship
	Admission bulletin board	Entrance examination information
	Student Support bulletin board	Scholarship (mainly for Japanese students)
		Event information, job search related information, notices from career center
	Class information bulletin board for	Undergraduate and graduate school calendars Information on Open Education Center, Teacher Training Program, MNC, etc. Course registration / grade announcement information Class cancellation information / Reports Examination information, Course Time tables, Classroom change
North Side Pathway of Building 51st, 60th, 61st	Bulletin board for each School	Information of different departments
1st floor of Building 51 (Center for Science & Engineering)	International student support bulletin board	Scholarship for international students, Career Info. and Information from ICC
1st floor of Building 61	Career Info. bulletin board	Career Information for Japanese and international students, Internship information for Japanese and international students
1st floor of Building 56	Laboratory work bulletin board	Information about Science and Engineering Laboratory, Applied Physics Laboratory, etc.
2nd floor of Building 57	Bulletin board for clubs recognized by the Faculty of Science and Engineering	Space for announcement from clubs recognized by the Faculty of Science and Engineering
Lounge in the 2nd floor of Building 57	Event bulletin board	Announcement of different events
Student lounge of Building 51	Bulletin board for student societies only	Space for announcement from student societies
3rd floor of Building 50	Bulletin board for the office of Building 50	Twins information, seminar room timetable, lecture information

12 Use of Classrooms and Common Seminar Rooms

To use classrooms for extracurricular activities, you have to submit an "Application for Use of Classrooms / Seminar Rooms" form available in the Center for Science and Engineering (Academic and Student Affairs Section). When submitting the form, keep the following in mind:

(1) Qualification to use classrooms

Only clubs recognized by the Faculty of Science and Engineering and equivalents and other groups headed, chaired or consulted by a full-time faculty member of the Faculty of Science and Engineering can use classrooms.

(2) Responsible person

The responsible person (full-time faculty member) must put his/her seal on the application for use.

(3) Submission of an application for use

An application for use must be submitted at least 3 business days before use.

(4) Available period

As a rule, use of classrooms is allowed except for the following periods:

Sundays, national holidays, Saturdays during holiday periods, period between the entrance ceremony and the start of classes, 2-week periods after the start of fall and spring semester classes, end of fall and spring semester examination periods, summer construction period, Rikoh-ten (exhibition for Science and Engineering Schools) periods, entrance examination periods during which campuses are closed, preparation periods for entrance examinations and periods during which classes are cancelled for other events

(5) Available time

As a rule, classrooms can be used between 18:15 and 20:00 on Monday through Friday, and between 13:00 and 20:00 on Saturday. During holiday periods, classrooms can be used between 9:00 and 17:30.

(6) Classrooms available

All classrooms located in Building 52, 53, 54, 56, 57, 58, 60, and 61, and common seminar rooms in Building 51, 60, 61, and 63 in Nishi-Waseda Campus.

(7) Available period

As a rule, a classroom can be used for up to 1 month. If you want to use a classroom for a longer period, submit an application for use again.

(8) Notes on using classrooms

(i) Using classrooms in a matter that interferes with classes, education, research or business of the university or undergraduate/graduate schools is not allowed.

(ii) Pay attention to the surrounding classrooms and do not disturb classes taking place in other classrooms.

(iii) Do not move tables, chairs, and other furniture in classrooms.

(iv) When using a classroom, please strictly observe the time period allowed.

(v) In case of an emergency that makes it necessary for the university to use the classrooms, you may be assigned to other rooms.

(vi) There are cases when a classroom is not available due to reasons such as construction of school building.

13 Extracurricular Activities

(1) International Community Center

The International Community Center (ICC) provides a meeting point for international students and Japanese students studying at Waseda University. It promotes mutual exchange between students beyond nationality and cultures. Throughout the year, the ICC organizes various sightseeing trips and events on campus. Please refer to the ICC website or visit the reception to confirm event information.

Contact Information:

[Address] 1st floor, Building 7, Waseda campus
[Tel] 03- 5286 - 3990
[E-mail] icc@list.waseda.jp
[URL] http://www.waseda-icc.jp/eng/
[Office hours]
During Semester: Weekdays: 11:00 - 19:00 Saturday: 10:00 - 17:00
During Semester Breaks: Weekdays: 10:00 - 17:00 Saturday: Closed

(2) Student Club Activities

Waseda students organize a wide variety of clubs, covering every interest and activity imaginable. Joining in club activities will be useful for you to establish bonds with Japanese students and to understand Japanese culture and social systems. You can visit the website (http://www.sci.waseda.ac.jp/eng/students/clubs/) for a list of clubs.

Also, reference books of student clubs are available at the Center for International Education. There are clubs and groups especially for international students. Please refer to the International Student Handbook for details.

(3) The International Association for the Exchange of Students for Technical Experience (IAESTE)

The International Association for the Exchange of Students for Technical Experience (IAESTE) is an association established to support students' practical training in foreign companies or international exchange and to deepen mutual understanding and friendship between students around the world. This association was established in 1948, and Japan became a member of this association in 1964. Currently, the association has more than 100 member countries, and about 1,000 universities of science and engineering and agriculture have participated in overseas student exchange programs of IAESTE International. It is sponsored by about 4,000 companies and has had more than 300,000 students in student exchange programs.

14 Safety Management

In the Nishi-Waseda Campus of Waseda University, more than 10,000 people including students, faculty and staff gather for education and research activities. As is often the case with a university of science and engineering, more than 4,000 fourth year students of undergraduate schools and graduate students are engaged in a variety of research activities. To prevent possible accidents during education and research activities and work on and improve other safety issues, the Nishi-Waseda Campus Safety and Health Committee of faculty and staff has been established. The committee has developed various safety management systems and supervises school-wide safety and health inspections and other safety management functions.

Students should observe the following rules:

- In laboratory classes, observe safety precautions explained during the Laboratory Work Guidance and work on experiments with safety in mind.
- As for the safety of experiments carried out as part of your graduation thesis, you have to listen to special precautions for your field of research. Follow the directions of supervisors and work on experiments safely.
- Participate actively in safety workshops held by laboratories and observe school rules, etc.

Use the Safety Guide and "Safety e-learning program" (Course N@vi) issued by the Nishi-Waseda Campus Safety and Health Committee, which describes the safety of experiments carried out as part of graduation and master's theses, and contact technical staff of relevant laboratories, etc. if you have questions (anzenrenraku@list.waseda.jp). The Safety Guide is available at the laboratories and the Technology Planning Section or can be checked from the following URL.

Nishi-Waseda Campus Safety Guide: http://www.sci.waseda.ac.jp/LABSafety/wp-content/uploads/2012/07/tebiki_en2012.pdf

About Safety Management at TWIns：http://www.twins.sci.waseda.ac.jp/LOCAL/rule/index.html

As a science and engineering school student, you must observe school rules as well as relevant laws and regulations, and always be aware of the safety of yourself and your surroundings and the safety and conservation of the global environment.

Response to emergencies

(1) Injury / serious illness

If you are injured seriously or become seriously ill, call the school emergency number (main gate security guard office: extension: 3000, external number: 03-5286-3022). If you call 119 directly in an emergency (including in the event that the injured or ill persons should not be or cannot be moved), call the school emergency number too because an ambulance must be guided by security guard personnel. If the injured or ill persons can be moved, have him/her receive treatment in the Health Support Center (Nishi-Waseda branch at the 1st floor of Building No. 51, extension: 2640 / 2641) and have him/her get external medical help if needed. If the center is closed, call the school emergency number (extension 3000, external number: 03-5286-3022). On the Nishi-Waseda campus, there are six AEDs (for their locations, see http://www.waseda.jp/ecocampus/saf/activity/aednishiwaseda.html *written in Japanese) available for use in emergency situations. If you are interested in learning how to perform CPR or use AED, you can take “普通救命講習”(First Aid Seminar) (offered 4 times a year). Details for the seminars will be posted on the Technology Planning Section website or Waseda-net Portal.

(2) Fire

Use a nearby fire extinguisher to initially extinguish the fire, and immediately call the school emergency number (main gate security guard office: extension:3000, external line: 03-5286-3022) to report the place and condition of the fire and receive instructions. If the fire cannot be extinguished with a fire extinguisher, escape to a safe place with those around you. Corridors of classroom buildings are equipped with emergency telephones (red boxes). You can use them to call extension 3000.

(3) Earthquake

Secure your safety under a desk or other shelter until the earthquake dies down. In case of a major earthquake, the university is supposed to set up disaster countermeasures offices in the headquarters and campuses to collect information and secure the safety of students, faculty and staff. Follow the instructions of the offices. Refer to the “Earthquake Response Manual for Students” for more information.

15 Study Abroad

Students who are considering to study abroad should participate in the Study Abroad Fair held by the Center for International Education in May and October. This fair provides useful information for those who are considering study abroad, such as an overview and notes on studying abroad, how to obtain program information and how to use the Information Room of the university (3rd floor of Building No. 22 of the Waseda Campus). In particular, long-term overseas study requires more than 1 year of preparation. You should check the 1-year application procedure for overseas study and other detailed schedules, and other information in the Waseda-net portal and the website of the Center for International Education as needed.

When you study abroad through a university program, the expenses will depend on each program and may vary from year to year depending on circumstances of host universities. Scholarships for studying abroad include scholarships granted under the short-term overseas study promotion system of the Japan Student Services Organization, the Waseda University Student Exchange Scholarship, and the Scholarship for Exchange Program Scheme. The scholarship application bulletin and other documents are provided after your host university is confirmed.

For more details about when you should study abroad, tuition and fees, whether credits earned in a foreign university are approved or not, and overseas study programs provided by the school, consult the Academic and Student Affairs Section of the Center for Science and Engineering. For more details about overseas study programs for all students provided by the university or the application procedure, refer first to STUDY ABROAD --The Study Abroad Bulletin-- or other information prepared by the Center for International Education (http://www.cie-waseda.jp/en/). Short-term programs in which people other than students of the university can also participate are provided by the Extension Center (http://www.ex-waseda.jp).

Study abroad programs for all students provided by the university are divided roughly into the types described below.

Program overview: long-term study abroad and short-term study abroad

(1) Long-term study abroad (half year/ one year)

(i) University-Wide Exchange Program (for undergraduate and graduate students)

This is a system that accepts foreign students from overseas partner universities and sends students of Waseda University to those universities. Students are given some freedom in selecting and taking courses. Tuition and fees for this program are covered by the tuition and fees you pay for your undergraduate or graduate school in Waseda University with the exception of some universities. However, you may be required to pay a facility fee or other fees in that country. Generally, a university receives 1 to 3 students. Waseda University is allied with universities in various countries. To apply for participation in an English-based program, you must have taken TOEFL and obtained the score required by the university you are applying to. For a non-English language-based program, you must have a good enough command of that language to follow classes in that language. Please check the latest information about application details on the website of CIE.

(ii) Fee Based one-semester program (for undergraduate students)

This is a new program in effect from 2012. The program is held at University of California, Davis, Boston University, (U.S.) and Peking University (as of April, 2014) although the study abroad period is 6 months from late March into early September the students are able to go under the registration status of “Registered in School”. If strengthening language proficiency is focused upon and the student is able to achieve certain language proficiency standard (even if half way through with the program), it is possible to join local students regular classes. As is the case with TSA and ISA program, by paying a set program fee to Waseda University, you are exempted from payment of tuition and fees for your affiliation.

(iii) Thematic Studies Abroad (TSA) Program (for undergraduate students)

This program focuses on theme-based learning in building a curriculum. You can receive various kinds of support to improve your language ability and help your learning in that university. By paying a set program fee to Waseda University, you are exempted from payment of tuition and fees for your affiliation. Generally, a relatively large number of students are accepted though the number of students accepted varies depending on the program. Countries and regions covered by this program are North America, Oceania, China, and Europe.

(iv) Individualized Studies Abroad (ISA) Program (for undergraduate students and some graduate students)

As with the exchange program, students are given some freedom in selecting and taking courses from a regular curriculum in a local university in consultation with local coordinators. If your foreign language ability is not enough, you may be required to study the language. By paying a set program fee to Waseda University, you are exempted from payment of tuition and fees for your affiliation. Countries and regions covered by this program include North America, England, Ireland and Oceania.

(v) Double Degree Program (for undergraduate students)

If you study in a prestigious foreign university through this program and satisfy certain requirements, you can earn a degree from that university too when you graduate from Waseda University. You must have a high level of reading comprehension, listening and speaking ability of the language used in that country. Check partner universities of this program with the Center for International Education.

(2) Short-term study abroad (several weeks)

The Faculty of Science and Engineering, the Center for International Education and the Extension Center provide short-term study abroad programs during long school breaks. In the programs, you will learn the local language, culture and customs for a short period of time. Please contact the Center for Science and Engineering for more information.

(3) Other study abroad programs

Studying abroad without receiving any scholarship, or at your own expenses, including living expenses, by gaining entry-permission from a university or a language learning institution of your choice is called privately financed overseas study. For privately financed overseas study, you have to go through required procedures on your own or through an overseas study agency. Check how your registration status at Waseda University and tuition and fees are treated, which depends on your particular case, with the Center for Science and Engineering. There are cases when study abroad programs conducted by individual departments recruit applicants on the bulletin board of each school / department.

16 Nonsmoking Campus

The following rules on separation of smoking areas in the Nishi-Waseda Campus have been established in accordance with the enforcement of the Health Promotion Law, which advocates the prevention of passive smoking (second-hand smoke), the notice regarding smoking issued by the Ministry of Education, Culture, Sports, Science and Technology, the ordinance regarding smoking on the street enacted by Shinjuku Ward, and the decision of the Executive Board on thorough separation of smoking areas. Observe these rules strictly. Also observe manners and rules on smoking on the street on the way to and from school. You should act with an awareness of being a student of Waseda University.

1. Smoking in public places is prohibited including classrooms, seminar rooms, laboratories, meeting rooms, lounges, foyers, atriums, libraries, students' reading rooms, CO-OP facilities, yards, corridors, stairs, passages, elevators, rest rooms and in open-air spaces, except for designated smoking areas.

2. Smoking is prohibited in laboratories and other places where seminars or student guidance is given, which are considered as classrooms.

3. Smoking while walking is prohibited.

17 Ban on Commuting by Bicycle, Motorcycle or Car

As a rule, students are prohibited from riding and parking a bicycle or driving a motorcycle or car into the Nishi-Waseda Campus. Since parking on streets around the campus is prohibited around the clock, commuting by bicycle, motorcycle, or car is prohibited. As to bicycles use only in special circumstances, you can inquire the General Affairs Section in the Center for Science and Engineering.

We have received many complaints from nearby residents about bicycles, motorcycles, and cars parked on the street in front of the main gate or in the walkways on the side of Meiji Dori and have been warned strictly by the local police stations - repeatedly. This nuisance parking has caused traffic accidents. Be sure to observe these rules strictly. Do not think that you are an exception, but act with an awareness of being a student of Waseda University.

18 Library

Waseda University Library consists of more than 20 libraries and reading rooms. Undergraduate students can take out books from 12 libraries. You can find complete explanation about services on Library website: http://www.wul.waseda.ac.jp/index.html. Please check the newest information on that website as library system and services are improving day by day. Library materials can be searched through WINE: http://wine.wul.waseda.ac.jp/search/ or by mobile phones. By using the "View Your Records" function of WINE, you can check the status of your borrowed books or renew the due dates.

Waseda University Library has made a contract with many databases, such as online journals and e-books, not only actual materials (books, journals, newspapers, audio-visual materials, etc.). You can access these online materials through Waseda E-Resource Portal: http://www.wul.waseda.ac.jp/imas/index-e.html. When you want to use them from outside the university, please access via Off-Campus Access:
http://www.wul.waseda.ac.jp/remote/index-e.html.

Nishi-Waseda Campus has the Science and Engineering Students' Reading Room and Science and Engineering Library. Notes on each feature and use are introduced as follows:

(1) Science and Engineering Students' Reading Room (Building 52, B1F)

The Room is mainly for undergraduate students, providing Japanese books centered on science and engineering fields along with curriculum. It holds multiple copies for frequently used books.

(2) Science and Engineering Library (Building 51, B1F)

This is a research library holding many journals and reference books both in Japanese and foreign languages in the field of science and engineering. We introduce online version of journals and books as much as possible. Textbooks of IPSE courses are located in the IPSE corner, and you can use them inside the library.

(3) Notes on use

(ⅰ) Service hours during the semester

Mon. through Fri.: 9:00-21:00 Sat.:9:00-19:00

For summer, winter and spring vacations, please check service days and hours on the website.

(ⅱ) Be sure to store your bags and personal belongings in a locker and lock it before entering the Science and Engineering Library. A 100 yen coin is required, but it will be returned after use.

(ⅲ) Carry your student ID card at any time. If you forget it, you cannot use any library.

(ⅳ) Smoking, chatting, eating and talking on mobile phones are prohibited inside the library.

(ⅴ) Please handle all library materials with care and be careful not to damage or get them wet. If you lose or damage library materials, you will be asked to compensate for them. Strict measures will be taken for malicious violations such as stealing library books, writing, underlining and marking library material, or cutting or tearing pages out of books.

(ⅵ) When books are not returned by the due date, a penalty of 1 point per day per book will be applied. After reaching 50 points, you cannot check out books for 14 days. Reminder notice is sent 5 days before the due date via e-mail from the library.

(ⅶ) Please keep the rule "User instructions for databases, electronic journals, etc.": http://www.wul.waseda.ac.jp/db/db_notice-e.html

(ⅷ) Some old journals or journals available online are located at the Honjo Deposit Library in Saitama Prefecture. You can use online journals through WINE and the Waseda Portal for Online Journals: http://tm3xa4ur3u.search.serialssolutions.com/

You can order journals that are not available online.

(ⅸ) When you have any question on how to use library, please search the library website first. Please use an online reference or ask at a counter if it is still not clear.

Waseda-net portal →System Services →Library online request →Online References

19 Computer Rooms

Nishi-Waseda Campus has about 700 computers which are mainly for classes. These computers can also be used for preparing reports or for browsing Internet sites unless they are being used for a class.

3rd floor of Building 63

Name	Capacity	Available OS				Use
		Win (J)	Win (E)	Linux	MacOS X	
Room A	80 people	○		○		Standard computer room (island type)
Room B	80 people	○		○		
Room C	100 people	○		○		
Room D	48 people	○			○	Standard computer room (classroom type) Equipped with iMAC
Room E	50 people	○			○	
Room F	48 people	○	○	○		Computer room designed for foreign language class (classroom type)
Room G	48 people	○	○	○		
Room H	12 people	○	○	○		Computer room designed for group study (island type)

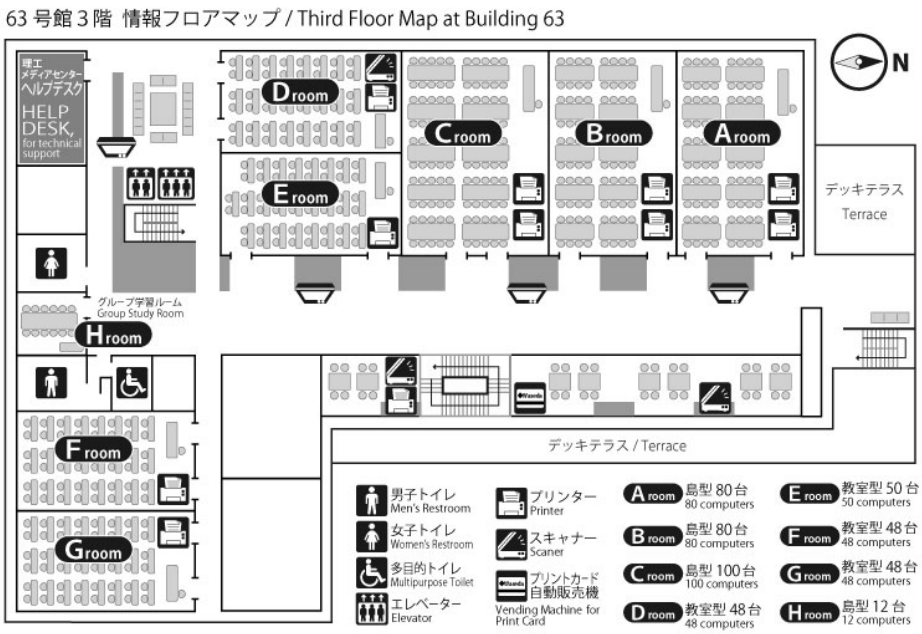
Others

Name	Capacity	Available OS	Location
Drafting/CAD room	208 people	Windows (Japanese)	1st floor of Building No. 57

The availability of computer rooms can be checked in the information panels which are placed at 1st and 3rd floor of Building 63 and the website of the Media System Support Section. (⇒ http://www.mse.waseda.ac.jp/ *written in Japanese)

<Consultation service>

A help desk is located on the south side of the 3rd floor of Building 63, which provides a consultation service concerning school information accessibility and services.



○ Using Windows Windows can be used in all the computer rooms. Word, Excel, PowerPoint, science and engineering software, and software development environments are available.

○ Using Linux A Linux environment can be accessed from computer room A, B, C, F, G and H. Linux environments are mainly used in classes in programming languages, algorithms, and numerical analysis. To use a Linux environment, you must apply for use through the Science and Engineering School Students website of the Waseda-net portal.

○ Using MacOS X MacOS X environment can be accessed from computer room D, E. Word, Excel, PowerPoint, Photoshop and Illustrator are available.

○ Using computers with foreign language learning equipment Computers in Rooms F and G are equipped with a headset, with which you can use a foreign language learning support system (CALL system). These are mainly used in foreign language classes and in self-directed learning.

20 Experimental Facilities

(1) Common laboratories

Nishi-Waseda Campus and Building 50 (TWins) have educational experiment facilities used for basic laboratory courses to be taken by first, second and third year students and for specialized laboratory courses provided by different departments. These facilities are shared among different departments and are called “common laboratories.” Educational experiments are mainly conducted in these laboratories, but facilities in these laboratories are also widely used for research activities.

○ Laboratories for basic experiments in Science and Engineering

Laboratories for basic experiments in science and engineering are used for Science and Engineering Laboratory 1 and Science and Engineering Laboratory 2 courses. Laboratories for basic experiments in science and engineering consist of 4 laboratories for different fields of academic study: laboratory for basic physical experiments, laboratory for basic chemical experiments, laboratory for basic bioscience experiments and laboratory for basic engineering experiments.

(Laboratory for basic physics experiments) Building 56, 2F

This laboratory is used for basic physics experiments of Science and Engineering Laboratory 1 course. You can learn the basics of physics through creative and unique experiments based on production.

(Laboratory for basic chemistry experiments) Building 56, 3F

This laboratory is used for basic chemistry experiments of Science and Engineering Laboratory 1 and Science and Engineering Laboratory 2 courses. You can learn the basic knowledge and method of experiment in chemistry such as synthesis, extraction, and analysis.

(Laboratory for basic bioscience experiments) Building 56, 3F

This laboratory is used for basic bioscience experiments of Science and Engineering Laboratory 1 course. You can learn the basics of bioscience through observation of cells and extraction of DNA.

(Laboratory for basic engineering experiments) Building 63, B1F east side

This laboratory is used for basic engineering experiments of Science and Engineering Laboratory 2 courses. You can learn advanced and practical basic engineering technologies through operation of scanning electron microscopes and automatic computer measurement.

○ Materials laboratory: Building 59, 1F east side

Strength tests or physical property tests of structural materials (metals, wood, concrete, etc.) and specialized experiments for evaluating the strength of structures are conducted.

○ Machining laboratory: Building 59, 1F west side
This laboratory is used for machine shop practice using machines. You can receive guidance on machining and machine or experimentally produce laboratory equipment or parts.

○ Thermal engineering laboratory, fluid engineering laboratory and control engineering laboratory: Building 58, 1F
Specialized experiments on thermal engineering, fluid engineering, or control engineering are conducted in these laboratories. In the fluid engineering laboratory, specialized experiments on hydraulics or water quality are also conducted.

○ Drafting/CAD room: Building 57, 1F
In this room, which is equipped with about 400 drafters (drafting tables), laboratory training on the basics of drafting or computer-aided design and drafting exercises are conducted.

○ Survey practice room: Building 61, B1F
Laboratory training on surveys using various types of surveying equipment is provided. This room is also used for photo survey-based reading of changes in the natural environment or measurement, archaeological research or other research.

○ Electrical engineering laboratory: Building 63, B1F west side
Specialized experiments in the fields of electricity/electronics and information communications are conducted. Technical support on making measurements of voltage, current, or magnetic fields, or on building of circuits is also provided.

○ Chemical analysis laboratory: Building 56, 5F
Specialized experiments in the fields of gravimetric analysis, volumetric analysis, instrumental analysis and other inorganic analytical chemistry are conducted. You can learn an extensive knowledge of analysis ranging from the basics of classic chemical analysis to instrumental analysis using large equipment.

○ Physical chemistry laboratory: Building 56, 4F
Specialized experiments are conducted on chemical substances compounds or molecules that constitute them, based on physical methods.

○ Organic chemistry laboratory: Building 56, 5F
Students learn the basics of conducting organic chemistry experiments from how to use reagents, equipments, and instruments to synthesis, separation and purification of organic compounds. Students deepen their understanding of organic chemistry by confirming what they have learned in lectures about reaction systems through experiments. They also acquire skills on experimental methods of organic chemistry by practicing and performing experiments repeatedly.

○ Bioscience laboratory: Center for Advanced Biomedical Sciences TWins Common Laboratory: Building 50, 3F
Students learn how to treat biomolecules such as gene or protein and a wide range of bioscience techniques by conducting morphological/ physiological experiments using culture/ fraction of cells or biont.

(2) Shared research facilities

In the shared research facilities, large equipment and precise measuring equipment that can be shared for research are intensively managed and used in a wide variety of research activities. Seminars and technical support on the use of equipment are also provided.

○ Materials Characterization Central Laboratory: Building 55, South Tower, B1F
The Materials Characterization Central Laboratory is a shared research facility used for analyzing the structure of materials. This laboratory is used by fourth year students assigned to a laboratory, master's degree students, doctoral degree students and researchers for research in a wide range of fields. The laboratory, which is equipped with state-of-the-art measurement instruments for research, is also used by other universities and research institutions.

○ Microtechnology Laboratory: Building 55, North Tower, B1F
Semiconductor processing equipment and clean rooms are available as shared research facilities. This laboratory is used by researchers in a wide range of fields including mechanical engineering, solid-state physics, chemistry and material engineering.

○ Media Design Laboratory: Building 61, 3F
Image information equipment for multimedia research or preparing teaching materials is available as shared research equipment. You can use a large color printer to prepare posters for conference presentations.

○ Center for Advanced Biomedical Sciences Shared Instruments Room
At TWins (Building 50), this room provides equipments such as centrifuge, MS, FC, DNA sequencer, real-time PCR, X-ray analysis apparatus, and gas chromatograph used for bioscience material analysis. Under the management of Research Support Center, it is available for use.

21 Health Support Center

Health Support Center

The Health Support Center was established to help students lay the groundwork for their health and acquire the ability to self-administer their mental and physical health so that they can lead a school life in good condition.
For more details, refer to the website below:
http://www.waseda.jp/kenkou/center/HSC/english/index.html

Health Support Center on Nishi-Waseda Campus (1st floor of Building 51)

Open hours: Monday through Saturday 9:00 – 17:00
Tel: 03-5286-3021 < 03-5286-3082 (direct line for consultation)

<Services>

(i) Annual health check-ups

(ii) Special health examinations

(iii) Issuance of various health certificates
*Only for those who have taken - annual health check-ups

(iv) Health consultation
Monday through Friday 9:00 – 17:00

(v) Clinical examination by physician
Monday through Friday 13:30 – 15:40

(vi) First-aid treatment and care of sick persons
Monday through Saturday 9:00 – 17:00

(vii) Mental health consultation by psychiatrist (Room 07, 1st floor of Building 51)
3 times a week (*By appointment only) 13:00 – 17:00

School Infectious Disease Prevention Policy - Class Absence Procedures

In order to prevent the spread of highly infectious diseases, students who have contracted any of the diseases listed under Table I: Infectious Disease Prevention in School will not be allowed to attend class based on the authority of the *School Health and Safety Act*. (The length of the mandatory suspension period is based on Table II: Mandatory Suspension Guidelines below.)

Students who have contracted one of the diseases indicated below are required to (I) contact the Nishi-Waseda branch of the Health support center (Tel. 03-5286-3021) and the Academic and Student Affairs Section of the Center for Science and Engineering. (Tel. 03-5286-3002 / E-mail gakumu@sci.waseda.ac.jp) to report your disease. and (II) undergo the following **Report of Absence** procedures as indicated.

① Ask your physician to fill out a designated *Certificate of Recovery from Infectious Disease Form* (学校における感染症治癒証明書).
http://www.waseda.jp/kenkou/center/HSC/infection/chiyu%20.pdf
Upon completion, submit this form to your affiliated organization (undergraduate school, graduate school, etc.)

② Obtain and fill out a designated **Report of Absence Form** (欠席届) from your affiliated organization (undergraduate school, graduate school, etc.) and follow all instructions. Present this form to your course instructor and ask for due consideration regarding your absence.

Table I: School Infectious Disease Prevention Policy (Regulations on the School Health and Safety Act, Article 18)

Type	Infection Characteristics	Infectious Disease
Type I	Occurrences of infection are rare but any occurrence of these infectious diseases is considered extremely serious (a public health emergency).	・Ebola Hemorrhagic Fever ・Crimean-Congo Hemorrhagic Fever ・Variola Virus ・South American Hemorrhagic Fever ・Plague ・Marburg Hemorrhagic Fever ・Lassa Fever ・Polio ・Diphtheria ・Severe Acute Respiratory Syndrome (SARS Corona Virus) ・Highly Pathogenic Avian Influenza A (H5N1) Virus ・Designated Infectious Diseases ・New Infectious Diseases
Type II	Infection can spread through the air and has the possibility of spreading over a large area.	・Seasonal Influenza (Flu) ・Pertussis (Whooping Cough) ・Measles (Rubeola) ・Rubella (German Measles, Three-day Measles) ・Parotitis (Mumps) ・Chicken Pox (Varicella) ・Adenovirus ・Tuberculosis (TB)

Type III	Although not primarily spread through the air, these diseases when left untreated can spread and cause an epidemic.	・Cholera ・Shigellosis ・E.coli (Escherichia coli) (0-157) ・Typhoid Fever ・Paratyphoid Fever ・Epidemic Keratoconjunctivitis ・Acute Hemorrhagic Conjuctivitis ・Other Infectious Diseases

Table II: Mandatory Suspension Guidelines (Regulations Implementing the School Health and Safety Act, Article 19)

Type	Length of Mandatory Suspension for Health Reasons	
Type I	Suspension shall remain in effect until the patient has made a full recovery.	
Type II	Seasonal Influenza (Flu)	Until at least 5 days have elapsed since the onset of symptoms and 2 days have passed since the fever has subsided.
	Pertussis (Whooping Cough)	Until the whooping cough has subsided or the patient has completed a 5-day treatment program of the appropriate antibiotics that is generally prescribed.
	Measles (Rubeola)	Until 3 days have elapsed after the fever has subsided.
	Rubella (German Measles, Three-day Measles)	Until all rash and skin lesions have subsided.
	Parotitis (Mumps)	Until 5 days have elapsed since the onset of swelling of the parotid salivary glands, the submandibular glands, and/or the sublingual glands, and the patient's overall condition has returned to normal.
	Chicken Pox (Varicella)	Until all chicken pox blisters have formed scabs.
	Adenovirus	Until 2 days have elapsed after major symptoms have subsided.
	Tuberculosis (TB)	Until your physician has determined that there is no further risk of infection based on an up-to-date diagnosis.
Type III	Until it has been determined that there is no further risk of infection by a physician.	

22 Transportation Strikes and Classes

For campuses of Waseda, Toyama and Nishi-Waseda Campuses and Center for Advanced Biosciences (TWins), see (1), (2), (3), and (4). For Tokorozawa campus, see (1), (2), (3), and (5).

(1) When employees of JR and other public transportation systems go on strike (general strike), whether classes will be held is determined as noted below.

(i) If the strike is called off by 12:00 am (midnight), classes will be given as usual.
(ii) If the strike is called off by 8:00 am, the third and subsequent period classes (classes after 1:00 pm) will be held.
(iii) If a decision to call off the strike is not made by 8:00 am, classes will be cancelled for the day.

Please note that these rules do not apply to work-to-rule strikes of JR and strikes of private railways.

(2) When employees of JR in the Tokyo metropolitan area go on partial strike (spot strike), classes are given as usual.

(3) When employees of JR in the Tokyo metropolitan area go on full strike for a limited number of hours, whether classes will be held is determined as noted below.

(i) If the strike ends by 8:00 am, the third and subsequent period classes (classes after 1:00 pm) will be held.
(ii) If the strike ends by noon, the sixth and subsequent period classes (classes after 6:15 pm) will be held.
(iii) If the strike does not end by noon, all classes for that day will be cancelled.

(4) If only private railway and urban transportation goes on strike, classes will be held as usual.

(5)

(i) When either or both of the Shinjuku line and the Ikebukuro line of Seibu Railway go on strike or
(ii) When these lines do not go on strike, but Seibu Bus goes on strike whether classes will be held is determined as noted below.

A. If the strike ends by 8:00 am, the third and subsequent period classes (classes after 1:00 pm) will be held.
B. If the strike does not end 8:00 am, all classes for that day will be cancelled.

23 Contingency Measures Due to Severe Weather

Any decision to cancel classes, postpone examinations, and enact other contingency measures due to severe weather shall be the responsibility of the University and shall not be based solely on warnings and advisories issued by the Japan Meteorological Agency.

However, when weather conditions are severe (heavy rainfall, flooding, high winds, blizzard conditions, heavy snow, etc.) or when a warning has been issued by the Japan Meteorological Agency and a determination has been made by the University that current conditions pose a danger to the safety of students and employees, the University will enact contingency measures such as the cancellation of classes, postponement of examinations, etc. Directives enacting such contingency measures on any campus (or campuses) shall apply to all courses and examinations taking place on the designated campus (or campuses).

1. Based on prevalent weather conditions such as during a typhoon, heavy snow, etc. where forecasts with reasonable accuracy can be made, and the University deems that conditions pose a danger to the safety of students and employees, the University will issue an emergency bulletin a day in advance to cancel classes, postpone examinations, etc. In such cases, a decision will be made by no later than 7 pm and a notification posted for students through the University's website and other communication channels by 9 pm on the day prior to the day in question.

2. In all other circumstances which do not fall under Item 1 above, any directive to cancel classes, postpone examinations, etc. will be issued no less than 60 minutes before the start of each affected class period and examination. Notifications will be posted on the University's website, as well as being disseminated via other communication channels.

*For the purposes of emergency bulletins, the Art and Architecture School, as well as the Kawaguchi Art School of Waseda University are grouped together with the Nishi-Waseda Campus.

*The contingency measures described here do not apply to Waseda University's two senior high schools, nor to the University's Extension Center.

■Emergency Communication Channels

1. Waseda University Website:
   http://www.waseda.jp/
2. Waseda University Emergency Bulletin Website for Mobile Phones (also PC-compatible):
   http://m.waseda.jp/
3. Waseda University Emergency Bulletin Website (Yahoo! Japan Blog) (Mobile phone-compatible):
   http://blogs.yahoo.co.jp/waseda_public
4. Waseda-net portal Login Page (PC only):
   https://www.wnp.waseda.jp/

*The websites listed above can be accessed via the "Emergency" function on the "WASEDA Mobile."

・For iOS Version : Search "WASEDA" from AppStore
  URL: http://itunes.apple.com/jp/app/waseda-mobile/id548395130?mt=8
・For Android Version : Search "WASEDA" from Google Play
  URL: https://play.google.com/store/apps/details?id=com.blackboard.android.central.waseda_jp

■Special Exemptions to the Cancellation of Classes and Examination Postponements

1. On-Demand courses:
   Directives to cancel classes do not apply.
2. Distance Learning System classes which take place simultaneously on multiple campuses:
   Any Distance Learning System classes taking place on multiple campuses (Waseda, Nishi-Waseda, Honjo) and which are directly impacted by the cancellation of classes at any of the campuses will be cancelled on a university wide-basis.

In general, during severe and dangerous weather conditions, the University will issue a directive to cancel classes, postpone examinations, etc. All affected students are expected to keep themselves informed and heed such directives. Students are advised to delay their commute or to refrain from coming to the University when their commuting routes (to the campus where their respective classes are taking place) are under any severe weather warnings issued by the Meteorological Agency, and they feel that commuting will endanger their safety. In such cases, the student should process a completed Report of Absence Form (*Kesseki-todoke*) with his/her affiliated undergraduate school (graduate school), and ask the course instructor in question for due consideration regarding his/her absence.

24 Class Cancellation in the Event of a Severe Earthquake

In the event that a severe earthquake occurs at such intensity that course instructors are not able to conduct classes safely, the following measures will be activated as soon as a decision is made by the University to cancel or postpone classes, as well as examinations.

These measures will apply to all scheduled classes and examinations at designated campuses.
1. When a decision is made to cancel or postpone classes and examinations, notices will be posted on the University's webpage and through other media.
2. When a decision is made during instructional hours, an announcement will be made over the campus public address system.

■Emergency Communication Channels
1. Waseda University Website:
http://www.waseda.jp/
2. Waseda University Emergency Bulletin Website for Mobile Phones (also PC-compatible):
http://m.waseda.jp/
3. Waseda University Emergency Bulletin Website (Yahoo! Japan Blog) (Mobile phone-compatible):
http://blogs.yahoo.co.jp/waseda_public
4. Waseda-net portal Login Page (PC only):
https://www.wnp.waseda.jp/

*The websites listed above can be accessed via the "Emergency" function on the "WASEDA Mobile."
・For iOS Version : Search "WASEDA" from AppStore
URL: http://itunes.apple.com/jp/app/waseda-mobile/id548395130?mt=8
・For Android Version : Search "WASEDA" from Google Play
URL:
https://play.google.com/store/apps/details?id=com.blackboard.android.central.waseda_jp

5. Waseda University Twitter
Account name: @waseda_univ

■Special Exemptions to the Cancellation of Classes and Examination Postponements
1. On-Demand courses:
Directives to cancel classes do not apply.
2. Distance Learning System classes which take place simultaneously on multiple campuses:
Any Distance Learning System classes taking place on multiple campuses (Waseda, Nishi-Waseda, Honjo) and which are directly impacted by the cancellation of classes at any of the campuses will be cancelled on a university wide-basis.

In general, during severe and dangerous weather conditions, the University will issue a directive to cancel classes, postpone examinations, etc. All affected students are expected to keep themselves informed and heed such directives. Students are advised to delay their commute or to refrain from coming to the University when their commuting routes (to the campus where their respective classes are taking place) are under any severe weather warnings issued by the Meteorological Agency, and they feel that commuting will endanger their safety. In such cases, the student should process a completed Report of Absence Form (*Kesseki-todoke*) with his/her affiliated undergraduate school (graduate school), and ask the course instructor in question for due consideration regarding his/her absence.

25 Class Cancellation in the Event of a Large-Scale Power Outage

In the event a large-scale power outage occurs unpredictably in the wake of overwhelming demand for electricity, the University will cancel classes as follows. Classes will be resumed with the 1st Period of the next day following the restoration of electric power.

①If a large-scale power outage occurs during class period (1 ～7 periods):
Remain calm inside the classroom until the situation is under control. All classes scheduled for the rest of the day will be cancelled.

②If a large-scale power outage occurs outside class period:
All classes scheduled for the day will be cancelled.

26 Granting of Special Consideration to Students on Bereavement Leave

Special consideration allows the University to take account of extenuating circumstances; specifically, family bereavement. If you become unable to attend classes, submit papers, or sit exams due to the death of your family member, please present appropriate documentation to back your claim (e.g. a funeral acknowledgement card) and take necessary procedures at the office of your affiliation in order to request special academic consideration during your leave.

Overview:

The University has systems in place to prevent students who are on a leave of absence due to a death in their family from being unfairly disadvantaged in terms of academic performance assessment. Students who fail to meet their following coursework requirements due to bereavement in the family: class attendance (including for on-demand courses), paper submission, exam-taking, may request the "Application for Special Consideration for Leave of Absence (bereavement)" form to be issued by the office of your affiliation and seek special academic consideration from your course instructors.

Please note that the final decision on a student's absences is left to the discretion of each lecturer.

Students entitled to special consideration:

All students of Waseda University

Applicable Relationship to the Deceased:

First-degree family members (parents, children), Second-degree family members (siblings, grandparents, grandchildren), and spouse

Number of days granted for bereavement leave:

Up to seven (7) consecutive class-meeting days

※ If international travel is involved, extra number of days may be granted.

Procedures

① Notify the office of your affiliation within ten (10) days from the end of the period for which consideration is sought, and obtain the "Report of Absence (bereavement)" form.

② Promptly submit the completed "Report of Absence (bereavement)" form, along with appropriate documentation, such as a funeral acknowledgement card, to the office of your affiliation.

※ In the case that the deceased is your guarantor, follow the procedure for a change of guarantor. Submit the form after having it signed and sealed by the new guarantor.

③ Request to have the "Application for Special Consideration for Leave of Absence (bereavement)" form issued by the office of your affiliation.

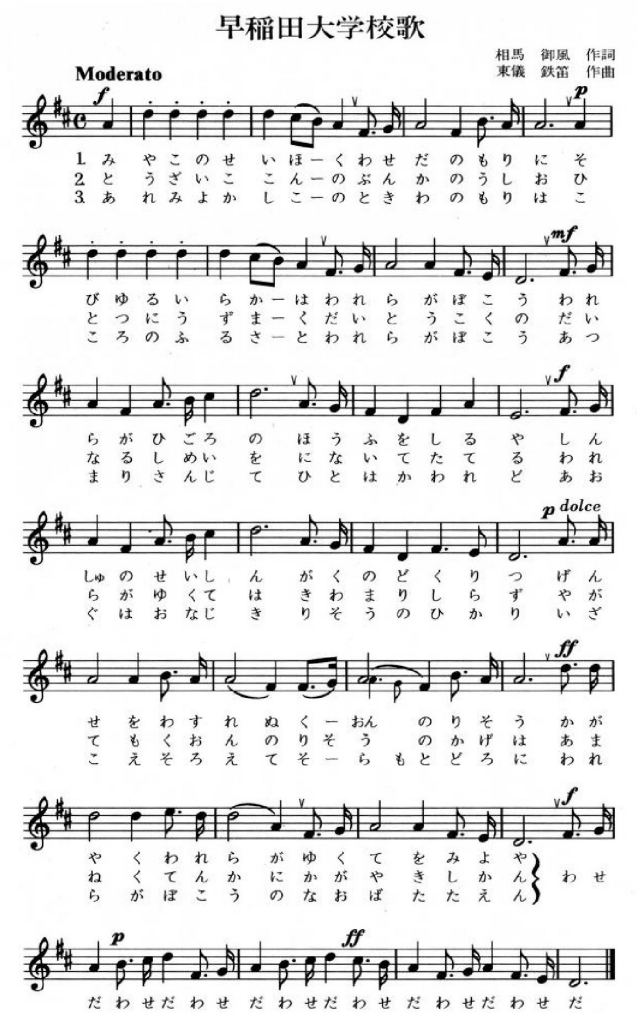
④ Submit the "Application for Special Consideration for Leave of Absence (bereavement)" form to your course instructor and seek special consideration for academic work missed during your bereavement leave.

If you are taking an on-demand course, direct your request to the affiliation offering the course.

V

Appendix

1　Alma Mater



一．
都の西北 早稲田の森に
聳ゆる甍は われらが母校
われらが日ごろの抱負を知るや
進取の精神 学の独立
現世を忘れぬ 久遠の理想
かがやくわれらが行手を見よや
わせだ わせだ わせだ
わせだ わせだ

二．
東西古今の文化のうしほ
一つに渦巻く 大島国の
大なる使命を 担ひて立てる
われらが行手は 窮り知らず
やがても久遠の 理想の影は
あまねく天下に輝き布かん
わせだ わせだ わせだ
わせだ わせだ

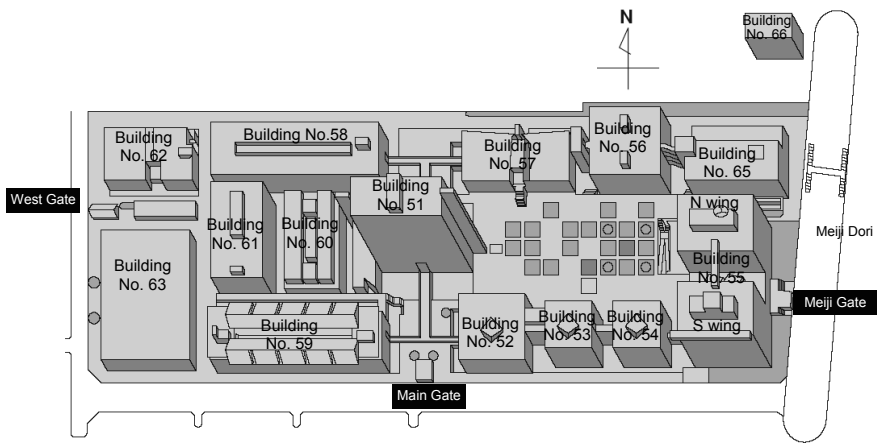
三．
あれ見よかしこの 常盤の森は
心のふるさと われらが母校
集まり散じて 人は変れど
仰ぐは同じき 理想の光
いざ声そろへて 空もとどろに
われらが母校の名をばたたへん
わせだ わせだ わせだ
わせだ わせだ

2 List of URLs and Telephone Numbers

If you cannot find an answer to your question in the bulletin or website, contact the following:

Course	Contact	Telephone number	URL and E-mail address
Consult individually about study and courses required for graduation, etc	Class academic advisor		http://www.sci.waseda.ac.jp/eng/students/contacts/
Course registration Examinations & Grades Certificates Tuition and fees Scholarships School register (study abroad, leave of absence, withdrawal and re-admission) VISA Student clubs and activities	Office of the Faculty of Science and Engineering (Academic and Student Affairs Section)	03-5286-3002	gakumu@sci.waseda.ac.jp
Entrance examinations Transferring to another department Details about research of faculty members	Office of the Faculty of Science and Engineering (Admissions Office)	03-5286-3003	gyoumu@sci.waseda.ac.jp
Notices on campus Bicycle parking Management and reservation of meeting rooms TA Various research subsidy programs	Office of the Faculty of Science and Engineering (General Affairs Section)	03-5286-3000	soumu@sci.waseda.ac.jp
Waseda-net Personal computers	Media System Support Section	03-5286-3355	helpdesk@mse.waseda.ac.jp
Lecture Cancellation Information	Faculty of Science and Engineering website		http://www3.sci.waseda.ac.jp/LOCAL/kyuko/
Renovation/ Electrical work in labs	Technology Planning Section	03-5286-3050	http://www.tps.sci.waseda.ac.jp/
Safety measures during the research activities, etc			
Injury and sickness	Nishi-Waseda branch of the Health support center	03-5286-3021	http://www.waseda.jp/kenkou/center/HSC/english/index.html
Shuttle bus schedule	Faculty of Science and Engineering website	03-5286-3000	http://www.sci.waseda.ac.jp/eng/students/shuttle/
Libraries	Science and Engineering Library	03-5286-3889	http://www.wul.waseda.ac.jp/RIKOU/index-e.html
CO-OP	CO-OP of Waseda University	03-3200-4206	info@wcoop.ne.jp
Advice on immigration formalities	Center for International Education	03-3207-1454	cie@list.waseda.jp http://www.cie-waseda.jp/en/
Extracurricular activities and event for international students	International Community Center	03-5286-3990	icc@list.waseda.jp http://www.waseda-icc.jp/eng/
Career consultation	Career Center	03-3203-4332	career@list.waseda.jp http://www.waseda.jp/career/eng/index.html
Other inquiries	Office of the Faculty of Science and Engineering	03-5286-3000	info@sci.waseda.ac.jp

3 Campus Map



Media System Support Section Help Desk 3rd floor of Building No. 63	WASEDA Monodukuri koubou1st floor of Building No.61	Laboratory for basic experiments in science and engineering (Chemistry, Bioscience) Building No. 56	Office of the Faculty of Science and Engineering 1st floor of Building No. 51
Computer Rooms A to H 466 personal computers 3rd floor of Building No. 63	Career Information Room 1st floor of Building No. 61	Laboratory for basic experiments in science and engineering (Physics) 2nd floor of Building No. 56	Health support center Nishi-Waseda branch Student Counseling Room 1st floor of Building No. 51
Rikoh Restaurant 1st floor of Building No. 63	Drafting/CAD Room 208 personal computers 1st floor of Building No. 57	Rikoh Cafeteria basement 1st floor of Building No. 56	Student Lounge 2nd floor of Building No. 51
Laboratory for basic experiments in science and engineering (Engineering) 1st basement of Building No. 63	CO-OP school store and book store 1st basement of Building No. 57	Students' Reading Room 1st basement of Building No. 52	Science and Engineering Library 1st basement of Building No. 51

List of the offices of departments

Fundamental Science and Engineering	Creative Science and Engineering	Advanced Science and Engineering
Department of Mathematics Room 01, 1st floor of Building No. 63	Department of Architecture Room 03, 2nd floor of N wing of Building No. 55	Department of Physics Room 03, 2nd floor of N wing of Building No. 55
Department of Applied Mathematics Room 01, 1st floor of Building No. 63	Department of Modern Mechanical Engineering Room 08, 2nd floor of Building No. 60	Department of Applied Physics Room 03, 2nd floor of N wing of Building No. 55
Department of Applied Mechanics and Aerospace Engineering Room 08, 2nd floor of Building No. 60	Department of Industrial and Management Systems Engineering Room 00, 13th floor of Building No. 51	Department of Chemistry and Biochemistry Room 03, 2nd floor of N wing of Building No. 55
Department of Electronic and Photonic Systems Room 01, 1st floor of Building No. 63		
Department of Computer Science and Engineering Room 01, 1st floor of Building No. 63	Department of Civil and Environmental Engineering Room 07B, 17th floor of Building No. 51	Department of Applied Chemistry Room 03, 2nd floor of N wing of Building No. 55
Department of Communications and Computer Engineering Room 01, 1st floor of Building No. 63	Department of Resources and Environmental Engineering 13th floor of Building No. 51	Department of Life Science and Medical Bioscience 3rd floor of Building No. 50 Office of the Center for Advanced Biomedical Sciences 2-2, Wakamatsu-cho, Shinjuku-ku, 162-8480
Department of Intermedia Art and Science Room 01, 1st floor of Building No. 63		Department of Electrical Engineering and Bioscience Room 03, 2nd floor of N wing of Building No. 55

Center for English Language Education in Science and Engineering Room 08,1st floor of Building No. 51
International Center for Science and Engineering Room 01, 1st floor of Building No. 63