

◆ Department of Chemical Engineering

1. Department Outline

Chemical engineers are the professionals who have been responsible for bringing out practically all products we use in our daily lives. They are concerned with the chemical processes that convert raw materials into valuable products. They are at home with chemistry, but they do much more with chemical engineering knowledge than simply make chemicals. The department of Chemical Engineering aims to develop internationally minded and highly-qualified technologists with solid decision-making, skills and creativity.

2. Graduation Requirements

The following are the requirements for graduation. Students should consult with their individual supervisors about their individual study plans.

【Master's degree】

For a master's degree a student must acquire 32 credits or more and meet the other requirements as follows:

(1)Credits

- 32 credits or more from the Graduate school courses.
- Research Courses
 - 6 credits of the following subjects must be acquired.
 - i) Seminar Courses: Seminar in Chemical Engineering I-IV (total 4 credits) in each semester are required.
 - ii)Graduate Research Courses: Innovative Chemical Engineering Project (2 credits) is required. Details of the subject will be informed by supervisors.
- Courses by Departments
 - 18 credits or more from the Courses by Departments including the following credits must be acquired.
 - i) 12 credits or more from the Departmental Courses-must be acquired.
 - ii)2 credits or more from the Courses in Other Departments must be acquired.
- 2 credits or more from the Liberal Arts and General Education(G) must be acquired.

(2)Thesis

- The student must complete and submit the thesis for the degree and take and pass the final examination given after the submission of her/his thesis for the qualification.

【Doctoral degree】

For a Doctoral degree a doctoral candidate must satisfy the following requirements:

(1)Credits

- Seminar Subjects: Seminar in Chemical Engineering V-X (total 12 credits) in each semester must be taken.

(2)Thesis

- The candidate must complete and upload the thesis for the degree, and take the final examination and evaluation of his/her thesis.
- The candidate who satisfies the above requirements and passes the final examination is awarded a doctoral degree.

【Integrated Doctoral Educational Program】

Students in the master course of International Graduate Program C, IGP(C) can apply for Integrated Doctoral Educational Program. The students have to pass the examination for the enrollment in the Integrated Program. The system and curriculum of Integrated Program of IGP(C) are different from those of IGP(A) though the latter is also an Integrated Program. The students enrolled in the Integrated Program in IGP(C) must acquire the following subjects.

- Off-Campus Project:

Off-Campus Project I or II (4 credits) is required.

• Special Seminar:

8 credits or more from Chemical Engineering Special Seminar I-VI must be acquired. Details of the subjects will be informed by the professor in charge of the Integrated Program.

Students who desire to enroll in the Integrated Doctoral Educational Program should consult with their supervisor about the application.

3. Course List of The Department of Chemical Engineering

Course List of The Department of Chemical Engineering									
Course	Department offering course	Course Number	Credit			Semester S: Spring A: Autumn	Opening year a: Annually e: Even o: Odd	Category* Remarks	
Departmental Courses									
Advanced Separation Operations	Chemical Engineering	35005	2	0	0	A	a	B	
Transport Phenomena and Operation for Advanced Materials and Chemicals Processing	Chemical Engineering	35031	2	0	0	S	a	B	
Fine Particle Engineering	Chemical Engineering	35032	2	0	0	S	a	B	
Material Science and Chemical Equipment Design	Chemical Engineering	35033	2	0	0	A	a	B	
Chemical Engineering for Advanced Materials and Chemicals Processing I	Chemical Engineering	35034	2	0	0	A	a	B/I	
Chemical Engineering for Advanced Materials and Chemicals Processing II	Chemical Engineering	35035	2	0	0	S	a	B	
Advanced Chemical Reaction Engineering	Chemical Engineering	35002	2	0	0	S	a	A	
Catalytic Process and Engineering	Chemical Engineering	35008	2	0	0	S	a	A	
Plasma Chemistry and Plasma Processing	Chemical Engineering	35036	2	0	0	A	a	A	
Life Cycle Engineering	Chemical Engineering	35037	2	0	0	A	a	I	
Chemical Engineering in Global Business	Chemical Engineering	35030	2	0	0	A	a	I	
Specific Interdisciplinary Subject in Chemical Engineering A	Chemical Engineering	35045	0	2	0	S	a	I☆	
Specific Interdisciplinary Subject in Chemical Engineering B	Chemical Engineering	35046	0	2	0	A	a	I☆	
Seminar Courses									
Seminar in Chemical Engineering I	Chemical Engineering	35701	0	1	0	S	a	Required Master Course ①	
Seminar in Chemical Engineering II	Chemical Engineering	35702	0	1	0	A	a	Required Master Course ①	
Seminar in Chemical Engineering III	Chemical Engineering	35703	0	1	0	S	a	Required Master Course ②	
Seminar in Chemical Engineering IV	Chemical Engineering	35704	0	1	0	A	a	Required Master Course ②	

Seminar in Chemical Engineering V	Chemical Engineering	35801	0	2	0	S	a	Required Doctoral Course ①
Seminar in Chemical Engineering VI	Chemical Engineering	35802	0	2	0	A	a	Required Doctoral Course ①
Seminar in Chemical Engineering VII	Chemical Engineering	35803	0	2	0	S	a	Required Doctoral Course ②
Seminar in Chemical Engineering VIII	Chemical Engineering	35804	0	2	0	A	a	Required Doctoral Course ②
Seminar in Chemical Engineering IX	Chemical Engineering	35805	0	2	0	S	a	Required Doctoral Course ③
Seminar in Chemical Engineering X	Chemical Engineering	35806	0	2	0	A	a	Required Doctoral Course ③
Graduate Research Courses								
Innovative Chemical Engineering Project	Chemical Engineering	35044	0	2	0	A	a	Required
Subjects of Integrated Doctoral Education Program								
Chemical Engineering Off-Campus Project I	Chemical Engineering	35501	0	4	0	S	a	I or II is required
Chemical Engineering Off-Campus Project II	Chemical Engineering	35502	0	4	0	A	a	
Chemical Engineering Special Seminar I	Chemical Engineering	35024	2	0	0	S	a	8 credits are required
Chemical Engineering Special Seminar II	Chemical Engineering	35025	2	0	0	A	a	
Chemical Engineering Special Seminar III	Chemical Engineering	35026	2	0	0	S	a	
Chemical Engineering Special Seminar IV	Chemical Engineering	35027	2	0	0	A	a	
Chemical Engineering Special Seminar V	Chemical Engineering	35028	2	0	0	S	a	
Chemical Engineering Special Seminar VI	Chemical Engineering	35029	2	0	0	A	a	

* B: Basic, A:Applied,I:Interdisciplinary

Chemical Engineering: Dept. Chemical Engineering

☆: Only the ACEEES students can take this course. In order to promote interdisciplinary research on campus, students are required to take/register courses provided by other designated majors/programs rather than their own majors/programs.

Descriptions of the subjects listed above are provided at the syllabuses for “Advanced Materials and Chemicals Processing Course of Sustainable Engineering Program: IGP(A)” (refer to III.International Graduate Program (IGP-A) Sustainable Engineering Program 4.6 Advanced Materials and Chemicals Processing Course and 5.6 Advanced Materials and Chemicals Processing Course).