Graduate Program for Chemical Engineering and Technology

School	College of Chemistry & Chemical Engineering	Student Type	Master & PhD
Discipline	Chemical Engineering and Technology	Discipline Code	0817
Subject included	Chemical Engineering (081701);Chemical Technology(081702);Biochemical Engineering(081703); Applied Chemistry(081704); Industrial Catalysis(081705); energy and chemical industry(0817Z1)		
Length of Study	Master 3 years; PhD 4 years		
Credit Requirement	Master ≥23.5 credits: ≥20 credits for courses, 3.5 credits for other academic sections.		
	PhD ≥13 credits: ≥10 credits for courses, 3 credits for other academic sections.		
Program Objectives	Chemical Engineering and Technology is a subject on basic laws of chemical process and physical process in various industries. It includes chemical engineering, chemical technology, biochemical engineering, applied chemistry, industrial catalysis, energy and chemical industry. This program aims to cultivate high-quality talents who are expected to (1) grasp basic theories, specialized knowledge and experiment skills; (2) be fully aware of the development and status quo of the field they study; (3) be rigorous, curious and innovative; (4) be of the ability to undertake research work and solve specialized technical problems; (5) be healthy mentally and physically; and (6) be competent in teaching, researching, developing technology, designing and managing independently.		
Requirements of Research Ability and Other Aspects	Candidates are required to (1) be fully aware of the literature, development and its innovative subjects in the field they engage in; (2) be equipped with experiment skills and testing methods; (3) be of the ability to observe, record, analyze experiments and experiment results, and the ability to detect and solve problems; (4) be of the ability to design experiments and to summarize experiment findings. To apply for a master/doctor degree, candidates shall publish papers according to relevant regulations on thesis defense of the College of Chemistry and Chemical Engineering of Xiamen University.		

Curriculum

(*SP-Spring semester; FA-Fall semester; SU-Summer semester; C-Compulsory; O-Optional)

Category	Course Code	Course Name	Credit	Semester	Master	PhD	Remarks
General Courses: Master 4 credits, PhD 2 credits	000010101	China's Marxism and Contemporary	2	FA		C	
	000010102	Study on the Theory and Practice of Socialism with Chinese Characteristics	1	FA	C		
	000010104	Nature Dialectics	1	FA	C		

	000010201	First Foreign Language	2	FA	C	O	
Compulsory Courses: Master ≥ 12 credits, PhD ≥ 6 credits	100210001	Transport Phenomena	3	FA	O	O	Masters of 081701-081705 shall select at least 3 courses
	100210002	Advanced Thermodynamics	3	FA	O	O	
	100210003	Advanced Applied Mathematics	3	FA	O	O	
	100210004	Advanced Biochemical Engineering	3	SP	O	O	
	100210005	Advanced Chemical Reaction Engineering	3	SP	O	O	
	100210006	Frontiers of Chemical and Biochemical Engineering	3	SP	O	O	
	330030323	Energy Chemistry and Chemical Engineering	3	FA	O	O	Energy
Optional Courses	100010001	Basic Research Manners and Safety	2	FA	O	O	C for candidates of 081701-081705
	100220002	Process System Engineering	2	FA	O	O	
	100220003	Products engineering	2	FA	O	O	
	100220004	Catalysis Engineering	2	FA	O	O	
	100220005	Metabolic Engineering	2	FA	O	O	
	100220006	Environmental Biotechnology	2	SP	O	O	
	100220007	Topics on Applied Chemistry	2	FA	O	O	
	330030320	Introduction to Energy Systems Engineering	2	FA	O	O	Energy
	330030304	Energy Technology and Engineering	2	FA	O	O	Energy
	390020009	Inorganic synthesis and preparative chemistry for functional materials	2	FA	O	O	Micro-nano
	390020010	Modern Analysis and Characterization for Micro-Nano Materials	2	FA	O	O	Micro-nano
		Other related curriculum	2		O	O	Under the guidance of supervisors
Other Requirements	1. Candidates shall select courses under the guidance of the supervisor. The study plan shall be submitted to the college for the record after it is approved by the supervisor with signature. Courses selected or quitted will						

	not be valid without the supervisor's approval. 2. Courses completed in the master studies with scores reaching the standard for PhDs can be exempted in the doctoral studies when the application gets approved by both the supervisor and the college.

Other Academic Sections (C-Compulsory; O-Optional)

Category	C or O	Credit	Requirements	Evaluation (Ways and time)
Academic Lectures	C	0.5 credit for masters, 1 credit for PhDs	Masters shall attend at least 12 academic lectures/reports, and PhDs at least 20; reports about lectures/reports attended are required.	It is evaluated prior to the thesis defense.
Literature Review and Thesis Proposal, and Research Report	C	1	1. Subjects chosen shall get approved by the candidate's supervisor before he/she starts working on it. The research submect for the thesis shall be decided no later than the end of the second semester of the first academic year. 2. Candidates are required to work out the schedule, reading reports and thesis proposal in time. Candidates are required to report the above information to the supervisor team orally and get it approved. Candidates who do not pass the thesis proposal report are allowed a second chance within 2 months. Candidates who are absent from the thesis proposal report and candidates who fail twice will be deprived of the right to apply for a scholarship and the right to apply for a thesis defense. The assessment committee are authorized to advise candidates under the above condition to quit school by providing written materials to the college and the Postgruanduate School of Xiamen University for examination and approval. Candidates who are abroad or off-campus for joint study during the thesis proposal report time shall negotiate with the supervisor about the time for their thesis proposal report.	It shall be completed in the summer term of the first academic year, or the first week of the second academic year.

Mid-term Assessment	C	1	The mid-term assessment shall be held in the summer term of the second academic year. Those who fail will be deprived of the right to apply for a scholarship and the right to apply for a thesis defense. 1. Each master/PhD shall submit a mid-term progress report along with a PPT to the supervisor, and take in the mid-term assessment. Each master shall deliver a progress report of at least 15 minutes, and each PhD at least 20 minutes. The whole process will be taped for the record.Supervisors shall evaluate masters/PhDs according to their comprehension of their subject, research outcomes and workload, their grasp of the basic theories and specialized knowledge of their chosen field, and other factors. 2. Candidates who fail the assessment are allowed second chance. Those who fail the mid-term assessment twice along with those who are absent from the mid-term assessment, will be deprived of the right to apply for a scholarship and the right to apply for a thesis defense. The assessment team is authorized to advise the above-mentioned candidates to quit school, PhDs (including PhDs under the Master-PhD program) will be degraded to master study or advised to quit school. Those who are abroad shall negotiate with the supervisor for the time of their mid-term assessment.	Mid-term assessment shall be held in the summer term of the second academic year.
Teaching Practice	C for masters	1	Masters (including masters under the Master-PhD program) are required to conduct teaching practice.	
Thesis	1. The literature review shall contain a description of the development of the fields relevant to the subject at home and abroad, scientific analysis and an objective evaluation of previous research outcomes, and existing problems. 2. Initial data from experiments, spectrograms, and results of analyses shall all be standardized and submitted to the research group for safe keeping. Data shall be authentic and reliable. Analyses shall be reasonable. 3. There shall be innovative outcomes out of the thesis research. Candidates are required to publish in time obtained academic outcomes under the guidance of the supervisor. 4. Candidates shall have the thesis approved by the supervisor before the submission for thesis review and thesis			

	defense. 5. Thesis review, thesis defense and degree granting shall be conducted according to regulations set by the Provisional Regulations on Academic Degree Granting of the People's Republic of China, and the Regulations on Postgraduates' Academic Degree Granting of Xiamen University. Thesis review and thesis evaluation shall be conducted according to relevant regulations formulated by the Graduate School of Xiamen University.

Major References and Journals (C-Compulsory; O-Optional)

No.	Title	Author	Evaluation*	Remarks (C or O)

Evaluation ways：1. Examination: Knowledge of references and journals to be covered on the examination;
2. Examination on thesis proposal or comprehensive examination;
3. Reading Report;
4. Other specific ways.