Ph.D. Program in Chemical Technology

1. Introduction to Major

Chemical Technology is a green-chemical-product-targeted engineering science, providing technologically advanced and economically reasonable approaches, principles, equipments and technologies for chemical industry. Chemical Technology, as a second-grade discipline, is of great significance in the first grade discipline "Chemical Engineering and Technology", directly facing the national economy, national defense construction and social development. The main research areas of Chemical Technology include energy chemical engineering, materials chemical engineering, organic chemical engineering, environmental chemical engineering, polymer chemical engineering and inorganic chemical engineering, etc. It not only covers the traditional basic areas, but also keeps cultivating new branches through integration with other disciplines including materials, energy, biotechnology, medicine and environment. Chemical Technology is such a discipline that has a long history and has made great contributions to science, technology and economic development. It is also an indispensable discipline full of vitality in the new century.

Research Fields:

（1）C1 chemistry and technology;

（2）Green production of functional chemicals and new materials;

（3）Biomass energy and chemical processing of biomass.

2. Objectives

The object of the course is to cultivate skills as follows. Have a firm and comprehensive grasp of basic theories and systematic specialized knowledge in the field of chemical technology. Understand the history, current situation, development trends and international academic frontiers in depth and systematically. Have the ability to carry out innovative research and practical work in chemical technology. Have the strict scientific attitude to explore the truth from facts. Be proficient with chemical technology theory and practice knowledge to solve actual problems. Master a foreign language for reading, writing, listening and oral expression. Be with excellent morals and academic skills to be capable of teaching, doing scientific research and technology management in higher educational institutions, scientific research institutions, and relevant departments.

3. Duration

The duration of PhD students is 4 years, and course leaning time is 0.5 years.

4. Courses and Credits

Student must complete a total of no less than 16 credit points, in which at least 6 cpts are degree courses, at least 3 cpts compulsory courses, and at least 7 cpts electives.

Course Type	Course code	Course Name	Hours	Points	Note
Degree Courses	B131G002	Marxism in contemporary China	36	2	
	B207G001	Frontiers of catalysis science and engineering	20	1	
	B207G003	Chemical technology progress	60	3	
Compulsory Courses		Lectures on academic frontiers and academic ethics		1	5 times
	B207R001	Academic reports		0.5	4 times
		International academic communication		0.5	
Compulsory Courses		English communication and application		1	
Optional Courses	B131GF05	Public English	60	2	choose one
		Catalysis and Reaction Engineering	64	4	
		Scientific thesis writing in English	60	2	
	B131E002	Selected Readings of Marxist classics	18	1	
	B131R001	Nonlinear mathematics（part one）	32	1.5	
	B131R002	Nonlinear mathematics（part two）	32	1.5	
	B131R003	Applied stochastic processes	32	1.5	
	B131R005	Selected scientific computation	60	3.0	
	B131R007	Applied multivariate statistical analysis	60	3.0	
	B131E001	Modern physics and advanced technology	40	2.0	
	B207E007	Catalytic reaction kinetics and chemical reaction progress	40	2.0	
	B207E008	Green chemical process and technology	40	2.0	
	B207E009	Fundation of novel separation technology	40	2.0	
		Molecular Thermodynamics of Multicomponents Fluid Phase Equilibrium	40	2.0	

5. Dissertation

Please describe the disciplinal requirements of doctor degree dissertation, and that of thesis publication.