

附件 1：申报专业培养方案

Zhejiang Sci-Tech University Doctoral Degree Program Outline

Materials Science and Engineering (080500)

(For International Students)

At present, the faculties has a quality team of faculties and a solid network of facilities and instruments. The faculties have received many honours and awards from the Chinese governments at provincial and national levels: MOE Innovation Team, board member of the Academic Review Committee of the State Department, National level leading talents , Provincial Senior Specialist, winner of the "National New Century Talents Project", "MOE New Century Excellent Talents Supporting Plan", "Qian Jiang Scholar". The faculties are highly educated, most of whom have overseas study or work experience. The college has 3 national teaching and scientific research platforms, 6 provincial scientific research platforms and 8 innovation service platforms (centers) in Zhejiang Province. In the recent years, the faculties have been in charge of many research projects, supported by the Natural Science Foundation of China and Ministry of Science and Technology of China, etc, and have won 3 National Prizes and more than 80 provincial-level prizes. In the past five years, the college has published more than 1000 SCI academic papers in Adv. Mater., Angew. Chem. Int. Ed. and other journals, and authorized more than 270 invention patents.

I. Objectives

1. Enhance professional research capabilities in specialized fields.
2. Achieve proficiency in Chinese, enabling the ability to read scientific and technical literature and engage in professional communication in Chinese.
3. Cultivate international students in China who "understand and befriend China" by studying and gaining insights into China's system, society, and culture.
4. Master solid and broad basic theories and systematic and in-depth professional knowledge in the discipline field, and master the development trend of the discipline field. Strong innovation ability, high comprehensive quality, with international vision and the ability to independently engage in scientific research and technological development, and make creative achievements in the field of science or special technology.

II. Research Areas

1. Polymer Materials Processing Engineering

(1) Preparation and application of fibers for engineering; (2) Polymer reaction engineering; (3) Functional polymer materials; (4) Polymer based composite materials.

2. Materials Science

(1) Functional biomaterials; (2) Biomedical and biomimetic materials; (3) Environmental catalytic and purification materials (4) Ceramic fibers and composite materials; (5) Smart and Biomimic Materials (6) Semiconductor materials and devices.

3. Material Physics and Chemistry

(1) New energy materials; (2) Catalytic materials; (3) Functional material synthesis; (4) Structure and properties of nanopolymers; (5) Design and preparation of separation membrane materials; (6) Polymer surface interface chemistry and physics.

III. Educational system & Length of Study

Adopting a full-time learning approach

The learning style is full-time. The normal length of the doctoral degree program is 4 years, while the maximum length of study is 7 years.

IV. Teaching Format

1. The system of tutor's responsibility is implemented in postgraduate training, which combines tutor's individual guidance and guidance group's collective guidance.

2. The cultivation of academic graduate students adopts the combination of course learning and thesis research, pays attention to the study of basic theory, the training of research methods, and the cultivation of innovation ability. Through the course study and thesis research, we can systematically master the theoretical knowledge of the subject area, and form the corresponding ability to analyze and solve problems.

V. Curriculum and Credit Requirements

The course-learning phase of the doctoral degree program is normally 1 year, adopting credit system.

Students are required to take at least 17 credits during their degree studies; Among them, course credits should be at least 15 credits, including Public Compulsory Courses 6 Credits,

Major Compulsory Courses 4 Credits, Major Elective Courses at least 4 Credits ,
Public Elective Courses at least 1 Credits., and 2 credits for academic activities.

“ Education on China's National Conditions for International Students B ”
(IF20001) of public elective courses is Recommended.

course nature	Course Code	Course Name	Hour/ Credit	Semester	course type	Notes
Public Compulsory Courses	FL20004	The Outline of China	36/2	1		(Entirely in English)
	CC10009	Basic Chinese (I)	54/3	1		(For beginners of Chinese language among foreign graduate students)
	FL10026	English Writing of Academic Paper	16/1	1		
Major Compulsory Courses	MT21010	Progress in Material Research	48/3	1	The academic frontier class	
	MT21011	Experimental safety education	16/1	1		
Major Elective Courses	MT21012	Advanced material analysis methods	32/2	1	Research methods	At least 1 course required
	MT21013	Structure and properties of polymers	32/2	1		
	MT21014	Introduction of Modern Organic Synthesis	32/2	1		
	MT21015	Thermodynamics and kinetics of materials	32/2	1		
	MT22017	Polymer Rheology	32/2	1		At least 1 course required
	MT22018	New fiber materials	32/2	1		
	MT22019	Composites	32/2	1		
	MT22021	Biomass Materials	32/2	1		
	MT22022	Biomedical Materials	32/2	1		
	MT22023	Theory and method of material synthesis	32/2	1	Research methods	
MT22024	Energy Materials	32/2	1			
Public Elective Courses	IF20001	Education on China's National Conditions for International Students B	16/1	1		Required
Others		Academic Activities	/2	Students are required to attend at least 4 academic meetings within the study duration and present academic reports in at least 10 seminars.		

		Practical Training	0	Students are required to take at least 2 weeks practical training, participate in at least one social investigation, and write relevant report. Normally the training should be completed in the first academic year.
		Dissertation		Not less than 2 years

VI. Dissertation Requirement

Thesis work is the main task of graduate students, and it is an important link to cultivate their scientific research ability and innovation ability. The dissertation should be a complete and systematic academic paper, which can show that the author has the ability to engage in scientific research independently, make innovative achievements in the discipline or special technology, have certain theoretical significance and practical value for China's social development and economic construction, and make contributions to the development of the discipline. In the process of paper work, departments and tutors should pay attention to the following aspects:

1. Opening report

Graduate students should complete the opening report before the end of the third semester after enrollment, and form an expert group to answer the opening report of graduate students, and modify and improve the opening report in combination with expert opinions. The evaluation results of the opening report are divided into "pass" and "fail". The results and disposal measures of the opening evaluation shall be implemented in accordance with the "Regulations on Graduate Education at Zhejiang University of Technology (Revised in 2025)".

2. Mid-term inspection

The mid-term examination for doctoral students should be completed within one year after the proposal is approved. The mid-term examination should be completed before the end of the fifth semester and is organized by various disciplines. The mid-term inspection shall summarize the progress, publication and periodical achievements of the dissertation; the mid-term inspection shall submit a written summary report as an integral part of the thesis defense and degree application materials. The results of the mid-term inspection are divided into "pass" and "fail". The mid-term inspection results shall be implemented in accordance with the "Regulations on Graduate Education at Zhejiang University of Technology (Revised in 2025)".

3. Thesis writing

In order to ensure the quality of postgraduate dissertation, the time for postgraduate to engage in scientific research and thesis work shall not be less than 2 year from the date of opening. In this paper, we should make a detailed exposition of our own innovative achievements and clarify the previous achievements and contributions in this field.

4. The innovative achievements required for the application defense

For academic doctoral students, the requirements for innovative achievements to apply for a degree shall comply with the "Requirements and Review Procedures for Innovative Achievements of Graduate Students Applying for Degrees in the School of Materials Science and Engineering"; The review and assessment of these innovative achievements shall be conducted in accordance with the same document.

VII . Graduation & Degree Conferment

Within the specified time, the doctoral student must complete the required courses, pass the examinations, has the required credits, and complete their doctoral dissertation, successfully defended. The doctoral students who attain the standards of graduation will be awarded the graduation certificate, who attain the standards of academic degree conferment and are approved by the university academic degree evaluation committee, will be conferred the doctoral degree.

The doctoral students who fail to pass the vote of the defense committee or the degree evaluation subcommittee have one and only one opportunity to reapply their defense within two years. Those who pass the defense will be awarded the graduation certificate, who attain the standards of academic degree conferment and are approved by the university academic degree evaluation committee, will be conferred the doctoral degree. Those who fail to pass the defense will be considered as completion and will be awarded the certificate of completion.

VIII . Other notes

1.The Chinese language proficiency of oversea PhD graduates must reach at least Level 3 of the International Standards of Chinese.

Director of the Materials Science and Engineering Graduate Education
Guidance Committee:

the Chairman of Degree Evaluation Subcommittee of School of Materials
Science and engineering:

Date: Year-MM-DD