Zhejiang Sci-Tech University
Research Master ’s Degree Program Outline
Materials Science and Engineering
080500

The discipline of "Material Science and Engineering (MSE)" is developed on the basis of the disciplines such as raw silk fiber and textile materials. The MSE is now the key and preponderant discipline approved by Zhejiang Province. Since 2012, Material Science has been ranked among the Top 1% in Essential Science Indicator (ESI). It was authorized to offer Master ’ s degree and Doctoral degree on MSE in 2006 and 2018, respectively. 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, the "National Thousand Talent Plan", awardees and innovation leaders of the "National Ten-Thousand Talents Plan", 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 700 SCI academic papers in Adv. Mater., Angew. Chem. Int. Ed. and other journals, and authorized more than 270 invention patents.

I. Objectives

1. Abide by laws and disciplines, have good moral character and rigorous style of study; have noble scientific morality, dedication to science, spirit of cooperation and innovation, and actively serve economic construction and social development.

2. 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.

3. Be proficient in reading Chinese and English materials of this major, and have good writing and communication skills in both Chinese and English.
4. Have good psychological quality, humanistic cultivation and healthy physique.

II. Research Areas

1.Polymer materials and processing engineering

(1) Fiber preparation and modification; (2) polymer matrix composite preparation and performance; (3) engineering fiber preparation and application; (4) polymer reaction engineering; (5) plastic and rubber modification and processing

2.Materials

(1) Functional polymer materials; (2) organic and inorganic nano hybrid materials; (3) biomass and biomimetic materials; (4) intelligent biomedical materials; (5) cultural relics protection materials

3.Material physics and chemistry

(1) Advanced ceramic materials; (2) structure and performance of nano materials; (3) semiconductor materials and devices; (4) energy and catalytic materials; (5) synthesis of functional materials; (6) flexible electronic materials and devices

III. Length of Study

The normal study length for full-time research postgraduates is 3 years. Students who finish their courses ahead of schedule and attain the standards of degree conferment can, after approval, apply for the degree at an earlier time (not earlier than 3 years), while the maximum length of schooling is 4 years.

IV. Credit Requirements

The course-learning phase of the master ' s degree program adopts credit system. Students majored in materials science and engineering are required to take at least 33 credits, with at least 20 credits of degree course.

V. Curriculum

Course Classification		Course Code	Course Name	Hour/ Credit	Semester			Notes
					I	II	III	
Degree courses	General degree courses	FL10015	The Outline of China*	36/2	√			(Entirely in English)
		CC10009	Basic Chinese (I)	54/3	√			(For beginners of Chinese language among foreign graduate students)

		CC10010	Basic Chinese (II)	36/2		√		(For beginners of Chinese language among foreign graduate students)
		FL10026	English Writing of Academic Paper	16/1	√			
		IF10001	Education on China's National Conditions for International Students A	16/1	√			
	Major-related degree courses	ME11001	Frontiers of Materials燃cience	48/3	√			
		MT11040	Material structure and performance	48/3	√			
		MT11041	Contemporary Instrumental analysis	48/3	√			
		MT11042	Technology for Materials Manufacturing*	48/3	√			
		SC11049	Mathematics Statistics*	48/3		√		
Non-degree courses			All optional courses in the university curriculum are open to students of this program.					
Additional courses								For students without an equivalent bachelor ' s degree
Others		Academic Seminar		/1	separated			
		Academic Report		/1	separated			
		Practical Training			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.			
		Thesis Proposal			The 3rd semester			
		Thesis Writing			The 3rd-6th semester			

C=Compulsory, O=Optional

* Students can decide whether to take this optional course or not according to their different research area.

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.

2. Mid-term inspection

The mid-term examination is generally arranged about one year after the opening of the examination, and is organized centrally 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.

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 1 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. Requirements for paper publication

A master's degree candidate who meets one of the following conditions may apply for dissertation defense:

(1) Take the graduate student as the first author or mentor (or assistant mentor) as the first author and the second author of the graduate student, and ZSTU as the first signed unit, publish or accept 1 paper in SCI, CSSCI, EI, SCD, second-level journal or above journals;

(2) Authorized one national invention patent in China (graduate students must be ranked first);

(3) The top three graduate students have won the provincial first prize and one of the above prizes in the China Graduate Innovation Practice Series Competition;

(4) The top three postgraduates have published or accepted one SCI TOP journal paper (there must be an independent part of the work, and it is reflected in their degree thesis; the contribution of the graduate student reviewed by the supervisor must be provided).

VII. 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.

VIII. Graduation & Degree Conferment

Graduate students who have completed the courses and other links specified in the training plan, passed the examination,passed the Chinese Proficiency Test (HSK) and obtained the Level 3 Certificate, passed the dissertation defense, and met the graduation requirements are allowed to graduate; those who meet the conditions for degree granting are approved by the university degree evaluation committee, and then awarded the degree.

Signature of Program Director:

Signature of Director of School Academic Degree Committee:

Date: