

Zhejiang Sci-Tech University
Research Master ' s Degree Program Outline
Mechanical Engineering

080200

The history of the Mechanical Engineering (ME) education dates back to 1959 at Zhejiang Sci-Tech University. The bachelor major in silk machinery and master major in textile machinery started enrolling students in 1974 and 1983, respectively. In 2006, it was granted the right to confer doctorate degree in mechanical design and theory, as well as the first-level discipline master in mechanical engineering. In 2010, it gained the conferring right for doctorate degree in mechanical engineering first-level discipline. Two years later, the post-doctoral research station in mechanical engineering was established.

Mechanical design and theory discipline became the Zhejiang Provincial Key Disciplines in 2003, and then the Zhejiang Provincial Top Key Discipline in 2008. Mechanical engineering discipline turned to the Zhejiang Provincial Top Key First-Level Discipline in 2012 and Zhejiang Provincial First Class Discipline (Category A). Since 2008, the discipline has obtained more than 100 million RMB funding from Central Government Financial Support Local Colleges and Universities, Provincial Discipline Establishment, Collaborative Innovation Center and Key Laboratory. It was awarded national prize of progress in science and technology (one second prize and one third prize), and four national second prize of technological invention (the project coordinator organization for one prize in 2003 and two prizes in 2007).

There are 90 faculty members in the discipline, including 25 professors (13 doctoral supervisors), 36 associate professors and 74 has doctoral degrees. It boasts 1 MOE Yangtze River distinguished professor, 1 winner of The National Science Fund for Distinguished Young Scholars, 1 national expert of "hundreds of Thousands of Talents Program", 1 MOE "New Century Top Talent Support Program" professor, 1 provincial "Thousands of Talents Program" expert, 1 "Qianjiang River Scholar" distinguished professor, 1 provincial outstanding contributions middle-young aged experts, 21 experts of provincial "New Century 151 Talent Program" (including 4 key level and 5 first level experts), 6 provincial distinguished youngsters, 7 provincial middle-young aged discipline leading personals, 7 Zhejiang province young scientist cultivation program experts. In addition, the discipline if the coordinator for one MOE innovation team and three Zhejiang provincial key technology innovation teams.

This subject in our university has solid basis and is of high level as a whole. It aims the frontier of key scientific problems in the majoring, carries out researches on fundamental theory and

application of industries, combines together the research and engineering applications, and transports talents for national economic construction.

I. Objectives

1. Abide the laws and regulations of China, have good moral character and academic integrity as well as strong spirit to be devoted to academic career.
2. Master and get trained in basic theory and special technical knowledge, obtain practical techniques and necessary research skills in science and engineering. To be familiar with the current situation and development trend of mechanical engineering disciplines, have certain ability to independently undertake works in scientific research, product development and technology management.
3. Have a good health and good mentality.

II. Research Areas

1. Mechanical Manufacture and Automation

1. Modeling methods for advanced manufacturing systems

Research advanced manufacturing model and its theory, complex manufacturing system modeling and analysis method, networked manufacturing system management operation method, complex product modeling theory and method.

2. Modern logistics and supply chain management

Research on modeling and optimization control theory of modern logistics and supply chain, operation mode and method of third-party logistics, electronic business logistics theory, supply chain management theory based on Internet of things.

3. Enterprise informatization and management

Based on computer technology and information management science of manufacturing enterprises, this paper studies enterprise information system architecture, enterprise data integration, internal data analysis, enterprise knowledge decision-making optimization theory and implementation technology under network environment, and develops enabling tools and software for information management of manufacturing enterprises.

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 5 years.

IV. Credit Requirements

The course-learning phase of the master's degree program adopts credit system. Students majored in science and engineering are required to take at least 33 credits, with at least 20 credits of degree courses; while students majored in arts, economics, management, law and education are required to take at least 34 credits, with 21 credits of degree courses.

V. Curriculum

Course Classification		Course Code	Course Name	Hour/ Credit	Semester			Notes
					I	II		
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	MC11052	Friction Stri Welding Technology	48/3				C
		MC11053	Finite Element Analysis	48/3				C
		MC11062	Computer integrated manufacturing system	48/3				C
		MC11064	Numerical solution of partial differential equations*	48/3				C
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

1. Dissertation is an important part of training program. Graduate students should be actively involved in the scientific research projects which have important academic application value undertook by supervisors.

2. Under the guidance of supervisors, students should determine the research direction and research topic through information retrieval, data collecting and investigation and study.

Literature review (at least 50 literatures, including 20 literatures in foreign languages) and dissertation proposal are required to complete before the third mid-term (normally in 9th ~10th week). All students are required to give a dissertation proposal report that illustrates the research background, topic selection intention, significance of the research, research status at home and abroad, literature review, research objects, research methods, research route, basic framework and research progress. Many related disciplines experts are invited to attend the report and will give some suggestions. Students can carry out dissertation work after approved by the experts. And the dissertation proposal report is organized by the steering committee of academic disciplines.

3. Dissertations must be completed independently under the guidance of supervisor. In general, the dissertation includes the significance of the research, research status at home and abroad, theoretical basis, research hypothesis, research methods, research results, research conclusion and discussion, reference and appendix etc.

4. Students should meet the requirements of the university that academic papers should be published before dissertation rejoining. The specific provision sees "The Regulations of Academic Paper Published for Master Degree of Zhejiang Sci-Tech University".

5. Dissertation must be edited and output by computer. The specific format provision sees "The

Regulations of Dissertation for Master Degree of Zhejiang Sci-Tech University".

VII. Teaching Format

1. Students and supervisors will take a two-way selection.
2. By the direction of college leaders and master degree program, the supervisors take the all-round responsibilities for students training.
3. The programme implements the principles that curriculum study and dissertation pays equal importance to students. So the programme integrates systematic theory study and in-depth scientific research for the students.
4. In the first term after registration, students should determine the research direction and make the training plan under the guidance of the supervisor. An intermediate inspection will be taken after all courses finished. Students who pass the intermediate inspection will get into dissertation stage as planned.

VIII. Graduation & Degree Conferment

Students who attain the standards of graduation, having completed the required courses, passed the examinations within the study duration and successfully defended their thesis will be awarded the graduation certificate; those who attain the standards of academic degree conferment and are approved by the university academic degree evaluation committee, will be conferred the corresponding degree.

IX. References

None

Signature of Program Director:

Signature of Director of School Academic Degree Committee:

Date: