Master and Doctor of Materials Science and Engineering

■ Program Overview

Materials Science and Engineering (MSE) of Shanghai Jiao Tong University, as the first level discipline, is one of the first national key subjects. It is composed of three second level disciplines: materials science, materials processing engineering, and materials physics and chemistry. Among them, materials science and materials processing engineering are national key subjects, distributing over School of Materials Science and Engineering (SMSE), School of Chemistry and Chemical Engineering, Research Institute of Micro/Nano Science and Technology, etc.

Exploring new approaches to collaborating with the world's leading universities is an integral part of the SMSE's mission to enhance its education and research capacities. Under the guidance of the Teaching Steering Committee, the school has established the postgraduate core curriculum system and full-English teaching courses. Up until now, nine full-English courses have already been initiated. At present, our school carried out high-level cooperative education with more than ten leading universities, established dual degree programs with Northwestern University, The Ohio State University and Institute National Polytechnique de Grenoble, and conducted exchange programs with Johns Hopkins University, University of Bremen, Norwegian University of Science and Technology, and University of Manchester.

The School of Materials Science and Engineering is authorized to provide the following degree programs:

- Ph.D. program in materials science and engineering, program length is 4 years;
- M.Sc. program in materials science and engineering, program length is 2.5 years;
- M.Eng. program in materials engineering, program length is 2.5 years.

The international graduate programs in SMSE aim to provide students professional knowledge and comprehensive training on Materials Science and Engineering systematically and to train high-level talents with higher academic or utility value skills, innovation capabilities for the industry, scientific research, and government authorities. In the last three years, the MSE programs have enrolled 26 students from 8 different countries, and graduated 7 international students.

■ Main Courses Given in English

No.	COURSE NAME	中文名称	CREDITS	CREDIT HOURS
1	Fracture of Engineering Materials	工程材料的断裂机理	2	32
2	Multiscale Materials Modeling and Simulation	多尺度材料模拟与计算	3	48
3	Thermodynamics and Kinetics of Materials	材料热力学与动力学	3	48
4	Fundamentals of Solidification	金属凝固原理	3	48
5	Nonlinear Constitutive Models and	非线性材料本构及	2	32

	Applications in Forming	其在成形中的应用		
6	Smart Polymeric Materials	智能高分子材料及应用（英文）	2	32
7	Principles and Technologies of Powder Materials Processing and Consolidation	粉末材料加工和固结原理及技术	2	32
8	Fundamentals of Supramolecular Material and Biomedical Materials	超分子材料及其生物医学应用	2	32
9	Properties of Functional Materials	功能材料的物理性能	3	48