

# Master Degree Programs in Metallurgical Engineering

## ADMISSION

The Metallurgical Engineering department offers master degree in ferrous metallurgy and nonferrous metallurgy and aims to develop the student's innovative ability on carrying out original research projects. Students who want to pursue their master degree in the above mentioned majors of our faculty should:

1. Have the academic qualification admitted by Jiangsu University;
2. Have obtained a bachelor degree in metallurgical engineering or a related engineering major.

## TRAINING OBJECTIVE

Master Degree Candidates should be trained to achieve following objective in order to become qualified personnel:

Having solid basic knowledge of metallurgical engineering and systemic professional knowledge; better understanding research direction; being familiar with new subjects, theories, achievements, and current and future developments in relevant research direction both at domestic and overseas; having strong capabilities of innovation, organizational skills, and cooperation; developing new opinion on scientific researches; being read for doctor degree study or engaging in research, teaching, technological development and administration in metallurgical engineering.

## RESEARCH FIELDS

### 1. Ferrous Metallurgy

- Development, Refining and Quality Control of Advanced Ferrous Materials;
- Metallurgical Process Control and Analog Emulation;
- Metallurgical Resource Comprehensive Utilization and Environmental Protection;
- New Technologies of Continuous Casting.

## 2. Nonferrous Metallurgy

- Design, Fabrication and Application of Metal Matrix Composites;
- Research on Non-ferrous Functional Materials;
- Fabricating Technology of Non-ferrous Materials and Computer Simulation Studies;
- Non-ferrous Metallurgical Resource and Comprehensive Utilization.

## DEGREE REQUIREMENTS

The master degree in Metallurgical Engineering is based on successful completion of a minimum of 34 credits which should include Public Compulsory courses, Core courses, elective, and seminars. Candidate for the master degree must complete a research proposal, published papers, thesis and oral examination in thesis defense.

## CURRICULUM

Courses Category		Course Name	Credit	Term	Remarks
Degree Courses	Public Compulsory	Overview of China	2	1	All
		Chinese	4	1	
	Foundation Theory	Numerical Analysis	3	1	All
		Numerical Statistics	2	1	
	Specialized Courses	Theory and Technique of Nonferrous Metallurgy	2	1	At least 2
		Metallurgical Physical Chemistry	2	1	
		Fundamentals of Transfer	2	2	

		Processes in Metallurgy			
		Introduction of Modern Nonferrous Metallurgical Engineering	2	1	
Compensatory Elective Courses		Ferrous Metallurgy (iron-making )	2	1	Student who got equivalent education level before enrollment or interdisciplinary must select two courses
		Ferrous Metallurgy (steel-making )	2	1	
		Nonferrous Metal Materials and Preparation	2	1	
		Advanced Solidification Technology	2	1	
Elective Courses	Ferrous Metallurgy	Modern Metallurgy	2	1	At least 2
		Introduction of Physical Metallurgy	2	2	
		Metallurgical Technology of Special Steel	2	2	
		Theory and New Technology of Continuous Casting	2	2	
		Ladle Refining Technology	2	2	
		Computer Application Technology in Metallurgical Process	2	2	
		Experimental Techniques of Ferrous Metallurgy	2	2	
		Metallurgical Resource	2	2	

		Engineering and Environmental Protection			
	Nonferrous Metallurgy	Nonferrous Metal Nanomaterials	2	2	At least 2
		Nonferrous Metal Materials and Machining	2	2	
		Metallurgical Electrochemistry	2	2	
		Theories of Solidification	2	2	
		New Technology of Nonferrous Metallurgy	2	2	
		Engineering of Rare Metals	2	2	
		Experimental Techniques of Nonferrous Metallurgy	2	2	
		Modern Material Analysis and Testing Technology	2	1	