ECUT Master Program for IAEA
Master's Program in Environmental Science and Engineering For Graduate Students

(First-level discipline code: 0830/0776)

1. Discipline Introduction

The Environmental Science and Engineering was founded on the basis of radiation Environmental Monitoring and the Applied Chemistry (major in environmental chemistry). Environmental Engineering was established in 1998. The master's degree of Environmental Engineering and Environmental Science was granted in 2004 and 2006 respectively. In 2010, the master's degree of Environmental Science and Engineering was authorized. The research field of the discipline covers mine environmental treatment and restoration, mining and metallurgy environmental biotechnology, environmental purification materials, radionuclide migration and transformation.

2. Discipline Directions

The master's program in Environmental Science and Engineering covers three secondary disciplines:

(1) Environmental Science

(2) Environmental Engineering

(3) Green recycling of waste resources

3. Educational Objectives

Academic graduate students are trained to be advanced professionals in environmental science and engineering with all-round development.

Students are required to have good professional ethics and professionalism, with scientific rigor and pragmatic learning attitude. During the master's study, the students should master the basic theories, advanced technical methods and means in the field of Environmental Science and Engineering. Students should have the ability to independently engage in scientific research in related fields of environmental science and engineering or undertake specialized technical and management work.

4. Schooling Length and Credit Requirements

The schooling length for the academic master's program is 3 years, with a maximum study period not exceeding 5 years.

Graduate students must accumulate a minimum of 27 credits, among which the total credits shall not be less than 23 credits for coursework (including a minimum of 13 credits for degree courses and a minimum of 10 credits for non-degree courses within the discipline). Compulsory components must amount to at least 4 credits.

5. Educational Methodology

The program combines coursework study, research training, and academic exchanges, implementing a mentor system. Supervisors are responsible for devising the graduate students training plan, mid-term assessments, guiding scientific research. They also have the responsibility to guide, demonstrate, and supervise the academic competence and ethical conduct of the graduate students.

6. Course Arrangement

Course Category	Course	Hour	credit	Term			Remarks
				1	2	3	

Degree Courses	Public Basic Course	Basic Chinese language	48	3	√			5 credits
		Overview of Chinese Culture	32	2		√		
	Major required course	Frontiers of Theory and Practice of Ecological Civilization Construction	32	2	√			4 courses 8 credits
		Modern environmental biotechnology	32	2	√			
		Advanced Environmental Chemistry	32	2	√			
		Environmental Toxicology and Health Risks	32	2	√			
Non-degree course	Major elective Courses	Sewage treatment and resource utilization theory and technology	32	2		√		At least 10 credits (5-8 courses, based on research field)
		Advanced solid waste management	32	2		√		
		Soil and groundwater pollution control project	32	2		√		
		Advanced Air Pollution Control Engineering	32	2		√		
		Modern instrument analysis	32	2		√		
		Environmental materials science	32	2		√		
		Radioactive pollution and its prevention	32	2		√		
		Principles and Technology of Environmental Remediation	32	2		√		
Compulsory		Literature Review		1			√	4 credits (cannot apply

Components	Thesis proposal		1			√	for thesis defense if any component is incomplete)
	Academic Activity		1			√	
	Teaching and Scientific Research Practice		1				

Total Required Credits for Graduation: 27

7. Compulsory Components

(1) Literature Review (1 credit)

Graduate students should extensively read articles in the corresponding semester. Literature reading is assessed and recorded by an expert group organized by a discipline before the commencement of dissertation.

(2) Academic Report (1 credit)

In order to broaden the academic horizon of graduate students, the school encourages graduate students to attend international conferences or national high-level academic conferences during their studies and to read their academic papers and exchange speeches at the conference.

(3) Proposal Report (1 credit)

The report of topic selection should be carried out and included in postgraduate course study. Under the guidance of the supervisors, students need to clarify the research field and the topic, then develop a plan for their thesis.

(4) Teaching and research practice (1 credit)

Students are required to actively participate in various practical activities such as scientific research, engineering design, technological development, and teaching assistance under the guidance of the supervisor.

8. Basic Degree Requirements

The relevant requirements should be implemented in accordance with the *Regulations of East China University of Technology*.