

环境科学与工程(083000)全日制硕士培养方案

Environmental Science and Engineering

一、基本信息 Basic Information

院系名称 School	(160) 环境科学与工程学院 School of Environmental Science & Engineering			适用年级 Grade	2025
适用专业 Major	环境科学与工程(083000) Environmental Science and Engineering				
项目类型 Program Type	全日制硕士				
最低学分 Min Credit	23	最低GPA学分 Min GPA Credit	14	最低GPA Min GPA	2.7

二、学科简介 Introduction

1984年获准不凝化学硕士点，开始培养不凝硕士点生，1988年调整为环境工程硕士点，同年又获准不凝半学硕士点，2000年获准环境工程二级学科博士点，2008年获准不凝科学与工程一级学科博士点，同年设立环境科学与工程博士后流动站。在流体力学控制、区域大气污染控制、废弃物资源化、环境功能材料、土壤地下水污染治理、环境化学与毒理学、环境管理、海洋不凝等方面，具有鲜明的特色与厚重的积累。学院拥有完善的教学与科研体系和先进分析测试平台，承担着大量的国家级、省部级、国际合作以及企业委托的科研项目。

As early as the 1984 we began to cultivate the master's students in environmental field. It was adjusted to the master degree of environmental engineering in 1998. The environmental science master station was established at the same year. In 2000, a second-rate discipline of environmental engineering for doctor-degree program was established. The first-rate discipli of environmental science and engineering for doctor-degree program was established in 2003. The school was approved to have post-doctoral mobile center of first class discipline of Environmental Science and Engineering in 2003. The major research fields are regional water pollution control, regional air pollution control, solid waste treatment and disposal, environment function materials, soil and groundwater remediation, environmental chemistry and toxicology, environmental management, marine environment, etc. The school has advanced teaching and research system, and the public servic platform, the center laboratory, guarantees the advanced analysis and test. The school also undertakes many national, international and industrial scientific research projects.

三、培养目标 Program Objective

培养德、智、体、美、劳全面发展，热爱祖国、遵纪守法、品行端正，具有艰苦奋斗、为人民服务 and 为社会主义建设事业献身的精神，具有扎实的基础理论与系统的专门知识，熟练掌握英语，能够撰写研究论文，具备批判思维、创新能力、实践能力与全球视野，具有较强的解决和探索环境污染控制、生态文明建设等问题的能力，具有从事科学研究工作或担负专门技术工作能力的环境科学与工程领域的卓越人才。

We will cultivate all-round development of morality, intelligence, body and beauty, love the motherland, abide by the law, and behave in a proper manner. We will have the spirit of hard work, serving the people and dedicating ourselves to the cause of socialist construction. We love the environmental cause and master the solid and broad environmental engineering of this discipline. The theoretical foundation and systematic in-depth expertise, proficiency in English, proficiency in reading English literature and writing English papers, and a certain international academic exchange ability, familiar with the history, current situation and trend of environmental discipline development at home and abroad, Have good critical thinking, innovative ability and practical ability, have strong ability to solve and explore environmental pollution control problems, have the ability to independently engage in scientific research, management, and practical work, and can make in environmental science or expertise. Creative achievements, high-level talents with a global environmental perspective.

四、培养方式及学习年限 Training Mode and Study Duration

本项目学制3年，采用全日制学习、导师制培养模式；新生入学后两周内经师生互选确定导师；硕士生最长可延长学年。

This program requires a full-time study for 3 years under a supervisor. For those unable to graduate on time, upon approval of the application, the maximum period of study can be extended by one year.

五、课程学习要求 Course Requirement

课程类别 Course Type	学分要求 Min Credits	GPA 学分要求 Min GPA Credit	备注 Note
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公共基础课 General Fundamental Courses	7.5	5	
专业基础课 Program Core Courses	9	9	
专业前沿课 Program Frontier Courses	6		
专业选修课 Program Elective Courses	3		

六、培养过程要求 Training Requirement

- 一、课程学习:课程原则上要求在第一学年完成。
- 二、开题报告:由导师(课程组)组织,一般在第三学期进行,参加开题报告时,硕士生应已基本完成培养计划中规定的课程学习,并成绩合格,GPA≥2.7。学生在交我办(myjiaoban)发起申请并完成在线建档,附件须完备。
- 三、中期检查:由学院集中组织,一般在第四学期进行,最晚应在学位论文送审前3个月进行,参加中期检查时,硕士生应已完成培养计划中规定的课程学习,并成绩合格,GPA≥2.7;学位论文开题已通过。学生在交我办(myjiaoban)发起申请并完成在线建档,附件须完备。
- 四 论文答辩:由学院集中组织,一般在第六学期进行。

- 1. Course Learning
Time of completion: In principle, course learning should be completed in the first academic year.
- 2. Thesis Proposals
Time and organizing: The thesis-proposal is organized by the supervisor and is generally conducted in the third semester.
Prerequisites: When participating in the thesis-proposal, master students should have basically completed the course study specified in the training plan and passed the grade with a GPA ≥ 2.7.
Filing: Students should apply and file on my.sjtu.edu.cn with complete reports and reviewing procedure.
- 3. The Mid-term Examination
Time and organizing: The mid-term examination is held by the school collectively and is generally conducted in the fourth semester or should be conducted 3 months before the dissertation is submitted for review.
Prerequisites: When participating in the mid-term examination, the master student should have completed the course study specified in the training plan and passed the grade with a GPA ≥ 2.7, and the thesis-proposal has been approved as well.
Filing: Students should apply and file on my.sjtu.edu.cn with complete reports and reviewing procedure.
- 4. Thesis Defense:
Time and organizing: Thesis defense presentation is held by the school collectively before the end of the sixth semester.

七、学术成果要求 Requirement on Academic Achievements

- 学术型硕士学位申请者应满足以下条件之一:
- 1)以第一作者或排名第一的共同第一作者发表或录用一篇CSSCI论文(导师应为作者之一),或导师为第一作者、学生为第二作者发表篇A及以上高水平学术论文(高水平学术论文认定参照《上海交通大学环境科学与工程学部代表性期刊分类目录》)。第一作者单位应为上海交通大学。
 - 2)以第一发明人(导师为责任人)或第二发明人(导师为第一发明人)申请国际专利并进入国家阶段实质审查状态或中国发明专利获得授权,第一专利权人应为上海交通大学。
 - 3)完成份英文项目报告(仅限于国际双学位学生)。
 - 4)经学院学位评定委员会认定的其他创新性科研成果。
 - 5)对于在学术前沿、颠覆性技术或领域或替心从事基础性、创新性或尖端生研究,力争经过长期攻关取得突破性、颠覆性科研成果的硕士生,若答辩前暂无成果发表的,须通过学院规定的申请认定程序。

- Applicants for an academic master's degree should meet one of the following criteria:
- 1. Publish or accept 1 SCI/SSCI paper as the first author or the first co-first author (the supervisor should be one of the authors), or the supervisor is the first author and the student is the second author to publish 1 3A or above high-level academic paper (refer to the "Classification Catalogue of Representative Journals of the School of Environmental Science and Engineerin Shanghai Jiao Tong University" for the recognition of high-level academic papers). The first author's affiliation should be Shanghai Jiao Tong University.
 - 2. If the first inventor (the tutor is the responsible person) or the second inventor (the tutor is the first inventor) applies for an international patent and enters the national phase substant examination status or the Chinese invention patent is authorized, the first patentee shall be Shanghai Jiao Tong University.
 - 3. Complete 1 project report in English (only for international double degree students).
 - 4. Other forms of innovative achievements recognized by the Academic Degree Evaluation Committee of the college.
 - 5. For master's students who are engaged in basic, innovative or cutting-edge research in the frontier of science, disruptive technologies or fields, and strive to achieve breakthrough and disruptive scientific research results through long-term research, if there are no achievements published before the defense, they must go through the application and recognition procedures stipulated by the college.

八、学位论文 Thesis/dissertation work

规范性要求硕士学位论文撰写格式按照《上海交通大学博士、硕士学位论文撰写指南》,学位论文答辩与学位申请按照《上海交通大学关于申请授予硕士学位的规定》执行。

质量要求硕士学位论文必须对所研究的课题在基本理论和专门技术等某一方面有新的见解,或用已有理论及最新科技手段解决本学科的实际问题,在学术上有一定的理论意义或应用价值。

1. Normative Requirements The writing format of thesis for master degree is in accordance with the Master's Degree Thesis Writing Guide. Thesis defense and degree application are in accordance with the Regulation of Master's Degree Application
2. Quality Control Master degree thesis of the study must contain new ideas in a certain aspect of basic theory and specialized technology. Or using the theory and the latest achievements to solve the practical problems of this subject. A certain theoretical significance and application value in the academic is required.

九、课程设置 Courses

详见下页 Please refer to the next page.

撰稿人签字:

日 期:

校稿人签字:

日 期:

审核人签字:

日 期:

主管院长签字:

院系公章

日期:

课程类别 Category	课程代码 Course Code	课程名称 Course Name		学分 Credit	授课语言 Language	开课学期 Semester	是否必修 Compusory	可以计算 GPA	必须计算GPA	备注 Note	多选组 Course Group
		中文Chinese	English 英文								
任意选修课 Elective Courses	GE6007	大学生心理健康	Mental Health for College Students	2	中文	春秋季	是	否	否	“好大学在线”慕课学习	
公共基础课 General Fundamental Courses	FL6001	学术英语	English for Academic Purposes	2	英文	秋季	是	是	是		
	MARX6001	新时代中国特色社会主义思想理论与实践	Theory and Practice of Socialism with Chinese Characteristics in the New Era	2	中文	春季	是	是	是		
	MARX6003	自然辩证法概论	Introduction to Dialectics of Nature	1	中文	春季	是	是	是		
	GE6001	学术写作、规范与伦理	Scientific Writing, Integrity and Ethics	1	中英并行开班	春秋季	是	否	否	秋季中文班，春季英文班	
	GE6003	实验室安全教育	Laboratory Safety Education	0.5	中文	春秋季	是	否	否	“好大学在线”慕课学习	
	GE6011	学术报告会	Academic Lectures	1	中文	春秋季	是	否	否		
专业基础课 Program Core Courses	MATH6004	计算方法	Numerical Analysis	3	中英并行开班	春秋季	是	是	是		最少1门、最低3分
	MATH6005	矩阵理论	Matrix Theory	3	中英并行开班	春秋季	是	是	是		最少1门、最低3分
	MATH6015	最优化方法	Optimization Method	3	中英并行开班	春秋季	是	是	是		最少1门、最低3分
	STAT6001	基础数理统计	Fundamental Mathematical Statistics	3	中英并行开班	春秋季	是	是	是		最少1门、最低3分
	ENVR7001	分子生物学与环境生物工程	Molecular Biology and Environmental Bioengineering	2	中文	秋季	否	是	否		
	ENVR7005	大气污染控制理论与技术	Theories and Technology of Air Pollution Control	2	中文	秋季	否	是	否		
	ENVR7101H	高等环境化学	Advanced Environmental Chemistry	3	英文	秋季	否	是	否		
	ENVR7110	环境能源技术	Environmental Energy Technology	2	英文	秋季	否	是	否		
	ENVR7002	环境生态工程	Environmental Ecological Engineering	2	中文	春季	否	是	否		
	ENVR7003	现代环境分析技术	Modern Environmental Analytical Technology	2	中文	春季	否	是	否		
	ENVR7004H	水污染控制理论与技术	Theory and Technology for Water Pollution Control	3	中文	春季	否	是	否		
	ENVR7006	废弃物的处理与资源化	Solid Waste Disposal And Recvcling	2	中文	春季	否	是	否		
	ENVR7020	环境学科人工智能应用实践	Artificial Intelligence in Environmental Science	2	中文	春季	否	是	否	AI+课程	
	ENVR7102H	环境管理	Environmental Management	2	英文	春季	否	是	否		
专业前沿课 Program Frontier Courses	ENVR6101	土壤—地下水污染修复	Soil and Groundwater Pollution Remediation	2	中文	秋季	否	否	否		
	ENVR7019	饮用水深度处理	Advanced Treatment of Drinking Water	2	中文	秋季	否	否	否		
	ENVR7103	产业生态学	Industrial Ecology	2	英文	秋季	否	否	否		
	ENVR8101	环境科学与工程进展	Advances in Environmental Science and Engineering	2	英文	秋季	是	否	否		
	ENVR7021	碳中和人工智能	AI for Carbon Neutrality	2	中文	春季	否	否	否	AI+课程	
	ENVR7105	可持续能源技术	Technologies for Sustainable Energy	2	英文	春季	否	否	否		
专业选修课 Program Elective Courses	ENVR6013	城市矿产资源循环技术与实践	Technology and Practice of Urban Mines Recvcling	2	中文	秋季	否	否	否		
	ENVR6015	环境传感技术及原理	Environmental Sensing Technology and Principles	2	中文	秋季	否	否	否	AI+课程	
	ENVR6017	全球化学品管理	Global Chemical Management	2	中文	秋季	否	否	否		

专业选修课 Program Elective Courses	ENVR7010	高级氧化技术	Advanced Oxidation Process	2	中文	秋季	否	否	否		
	ENVR7013	水体富营养化	Water Eutrophication	2	中文	秋季	否	否	否		
	ENVR7014	环境电化学	Environmental Electrochemistry	2	中文	秋季	否	否	否		
	ENVR7015	大气化学	Atmospheric Chemistry	2	中文	秋季	否	否	否		
	ENVR7018	环境地球化学	Environmental Geochemistry	2	中文	秋季	否	否	否		
	ENVR7104	环境经济学	Environmental Economics	2	英文	秋季	否	否	否		
	ENVR7106	环境微生物技术与应用	Environmental microbiology: technology and application	2	中文	秋季	否	否	否		
	ENVR7011	现代环境化工技术	Modern Technology of Environmental Chemical Engineering	2	中文	春季	否	否	否		
	ENVR7111	环境催化原理与应用	The Principles and Application of Environmental Catalysis	2	英文	春季	否	否	否		