环境工程专业国际硕士研究生培养方案

一级学科名称（代码）：环境科学与工程（0830）

二级学科名称（代码）：环境工程（083002）

Master Program in Environmental Engineering

First-level discipline(code):Environmental Science and Engineering（0830）

Second-level discipline(code): Environmental Engineering（083002）

一、学科简介

本学科以水污染控制及资源化理论与技术、环境规划与管理、环境监测分析技术为主要研究方向，以高浓度有机废水处理技术、污水脱氮除磷技术、受污水体生态修复技术、生态区域规划与建设理论、循环经济、生态环境安全与风险评价、环境污染物监测分析等主要研究特色。

承办 2026 级环境工程专业硕士项目的环境科学与工程学院现有环境工程、环境科学、给排水科学与工程、建筑环境与能源应用工程、环境生态工程 5 个本科专业。学院拥有环境科学与工程一级学科硕士点、市政工程和供热、供燃气、通风及空调工程两个二级学科硕士点，在校硕士研究生 500 余人，国际留学硕士生 80 多人。环境科学与工程先后入选“十二五”江苏省重点学科和江苏高校优势学科一、二、三期建设项目。环境工程及给排水科学与工程专业分别于 2017 年、2019 年通过了工程教育认证；环境工程、环境科学、给排水科学与工程专业为国家一流专业和江苏省品牌专业、建筑环境与能源应用工程为江苏省一流专业，2021 年、2022 年环境工程被遴选为首批江苏省高校国际化人才培养品牌专业和产教融合品牌专业。

学院现有专任教师 115 人，其中教授 27 人，副教授 45 人，博士 110 人，拥有“杰青”、国家“万人计划”领军人才、教育部教学指导委员会委员等在国内有知名度和影响力的学术带头人；多人获国家和部省级科研奖励，过半数教师主持过国家级科研项目，近 60%有海外工作或学习经历，近 85%具有博士学位。拥有“水污染控制新技术与资源化”江苏省科技创新团队、江苏省“双创”团队、江苏省高校“青蓝工程”优秀教学团队等创新群体。

本学科以江苏省优势学科、江苏省重点学科、国家一流专业和江苏省品牌为学科和专业依托、以国家地方联合工程实验室、江苏省环境科学与工程重点实验室等平台为研究依托基地。

1.Introduction

The main research direction of this master program include water pollution control theory and technology, environmental planning and management, environmental monitoring analysis technology as , and some of the particular research areas that have been established consist of high concentration organic wastewater treatment technology, sewage denitrification and phosphorus removal technology, the sewage ecological restoration technology, ecosystem area planning and construction theory, the circular economy and ecological environment security, risk assessment and environmental pollutant monitoring .

School of Environmental Science and Engineering, who administrating this master program, has five undergraduate programs: Environmental Engineering, Environmental Science, Water Supply and Sewerage, Building Environment and Energy, Environmental Ecology. The current

number of full-time undergraduates and postgraduates within the school are 2000 and 500 respectively. There are 144 full-time faculty staff, including 27 professors, 45 associate professors, 110 PHD background staffs. More than 30% of our staff have overseas experience, such as studying, visiting, undertaking research or attending academic conferences. Among our staff, two members have been awarded the national outstanding young scholars title, two members receive state Council government special allowance, many have won national, provincial and municipal honors and titles, and our staff are acting as leaders in various disciplines and academic fields, such as members of the National College Discipline And Specialty Steering Committee and the National College Discipline and Specialty Evaluation Committee.

The discipline is supported by the superior disciplines of Jiangsu Province, the Key Disciplines of Jiangsu Province, the National First-class Specialty and the Brand of Jiangsu Province, replying on various distinguished platforms including the national and local Joint Engineering Laboratory, Jiangsu Provincial Key Laboratory of Environmental Science and Engineering.

二、培养目标

环境工程领域国际硕士专业学位是与环境工程领域任职资格相联系的专业性学位，为各国培养应用型、复合式高层次工程技术和工程管理人才，具体要求如下：

1、基本知识培养目标：系统掌握本学科的基础理论知识和专业知识，包括了解和认识中国的基本概况，学习和掌握中文的基础知识、本专业基础理论知识，以及其它相关学科理论知识。

2、基本素质培养目标：具备较高科学素养和良好的学风；要具有环境保护的社会责任感；要具备实事求是的科学精神；要树立法制观念，保护知识产权，尊重他人研究成果。

3、基本能力培养目标：具备获取知识能力，包括良好的信息查询能力、学术交流能力和自学能力等；要对环境领域研究方法、研究过程，以及研究成果的科学性和价值具有判断能力；要具备良好的科学研究能力，能够运用科学方法客观地分析问题、解决工程实践能力的能力；要具备外语能力和计算机技能等。

2. Training objectives

This international Master degree in Environmental Engineering is a professional degree required for undertaking professional duties in the field of environmental engineering, designed to cultivate application-oriented and versatile high-quality talents in engineering technology and engineering management for different countries. The specific requirements are as follows:

2.1 Basic knowledge training objective: To systematically master the basic theoretical knowledge and professional knowledge of the discipline, including understanding the basic situation of China, learning and mastering the basic knowledge of Chinese language, basic theoretical knowledge of the major, and theoretical knowledge of other relevant disciplines.

2.2 Basic quality training objective: To have high scientific accomplishment and good style of study, have a sense of social responsibility of devoting themselves to environmental protection and serving the society. To have the scientific spirit of seeking truth from facts, establish a legal concept, protect intellectual property rights and respect the research results of others.

2.3 Basic ability training objectives: Have the ability to acquire knowledge, including good information query ability, academic communication ability and self-study ability; To be able to judge the scientific nature and value of research methods, research process, and research results in the new field; To have good scientific research ability, can use scientific methods to objectively

analyze problems, the ability to solve engineering practice and so on.

三、研究方向

01 水污染控制与理论

本研究方向重点研究水体的污染机制和修复技术、废水处理理论与工艺技术、受污染地表水体水质恢复的技术途径。

02 环境监测与管理技术

本研究方向紧跟学科领域国际前沿发展动态，重点进行液相微萃取、基质固相分散萃取等简易、快速、无二次污染的环境友好样品前处理与监测方法的技术研究。并开展环境影响评价、清洁生产审核、生命周期评价、环境规划、碳减排等理论和技术方法的研究。

03 固体废物处理与资源化技术

本研究方向针对我国垃圾增长迅速，环境危害严重的环境问题，探讨了实现固体废物减量化、资源化、无害化的关系与可行性，提出了以污染控制和资源化为主要研究目标和研究方向，开展了土壤重金属修复、城市生活垃圾及典型工业固体废物的处理与资源化利用技术研究。

3. Research Directions

01 Water pollution control and theory

This research focuses on the water pollution mechanism and remediation technology, wastewater treatment theory and technology, and the technical approach to the restoration of polluted surface water quality.

02 Environmental monitoring and analysis technology

This research focus on liquid phase microextraction, matrix solid phase dispersion extraction, solid phase extraction, purge - capture technology and other simple, rapid, no secondary pollution environmental friendly sample pretreatment technology research.

03 Solid waste resource recovery technology

This research focuses on emerging environmental issues posing great environmental and ecological risks, such as solid waste treatment , discussing the implementation of solid waste reduction, resource utilization, recycling, proposing pollution control and resource utilization as the main research objective and research direction, and carrying out soil heavy metal remediation, resource utilization technology for municipal solid waste and typical l industrial solid waste.

四、学习年限

1、硕士研究生学制为 3 年。从入学到毕业，最长在校学习年限为 4 年。

2、提前完成培养计划的优秀研究生，可申请提前答辩，但提前时间不超过 1 年；申请提前答辩的毕业（学位）论文的开题也相应提前进行，并在学位论文开题前 2 周提出申请，经导师同意、所在学院审核、研究生部批准，办理相关手续后执行。

3、未能在规定学制内完成培养计划者，经学校批准，在规定的学习年限内，可适当延长学习时间 1 年；延长学习时间者应在正常学制（或延长学习时间内）最后一个学期结束前 2 周提出申请，经导师同意、所在学院审核、研究生部批准，办理相关手续后执行，并按当年标准缴纳相关费用。休学期间计入在校学习年限。

4.Years of Study

1.The duration of master study is 3 years. The maximum length of study from entry to graduation is 4 years.

2. Excellent graduate students who have completed the training plan in advance can apply for the defense in advance, but the advance time is not more than one year; The thesis proposal of the graduation (degree) thesis that applies for defense in advance should also be carried out in advance, and the application should be submitted 2 weeks before the thesis proposal, with the consent of the supervisor, the school and the graduate Department, and the relevant procedures shall be carried out.

3. Students who fail to complete the training plan within the prescribed schooling period can extend their learning time by 1 year upon the approval of the university. Applicants should apply for the extension of study time 2 weeks before the end of the last semester of the normal schooling period (or the extension of study time), with the consent of the supervisor, school and graduate department, go through relevant procedures, and pay the relevant fees according to the current year standard. The period of suspension is counted as the length of schooling

五、培养方式

培养方式实行导师负责制，鼓励团队培养方式，开展校-校和学、研、产联合培养，争取国际合作培养。采取“1.0+0.5+1.5”培养模式。实行因材施教，课程教学分类实施，充分发挥研究生的个人才能和特长（见附注）。

5. Cultivating method

The training pattern implements a tutorial system, each student will be assigned a tutor/supervisor based on mutual agreement. We also encourage training patterns such as research team based talent developing mode, inter-universities or joint training by university , research institute and industry , as well as internarial joint training pattern if feasible. Adopt "1.0+0.5+1.5" cultivation mode (see remarks in Section 9). Each student’s talent and skills will be fully taken into account during the training process, including teaching design and implementation.

六、学分要求

硕士研究生的课程学习采用学分制。研究生学分的基本要求：总学分不少于 36 学分，同时满足公共课、学科基础课、专业基础课、选修课、必修环节的学分要求；在中期考核之前必须修完不少于 30 学分；在申请学位论文答辩前必须完成个人培养计划规定的全部内容，并符合专业培养方案的规定。

6.Credits requirements

Credit system is adopted for master courses. The basic requirements of master credits: the total credits are no less than 32 credits and no more than 36 credits. No less than 20 credits must be completed before the mid-term assessment; Before applying for dissertation defense, all the contents of personal training plan must be completed and conform to the provisions of program plan.

七、课程设置与要求

（一）课程设置

课程设置表

7.Courses setting and requirements

7.1Courses setting

Course Setting Table

类别 Category		课程编号 Course Code	课程名称 Courses Name	学时 Credit hours	学分 Credits	开课学期 Semester			考核方式 Assessment	备注 Remarks
						1	2	3		
学位课 Degree courses	公共课 General courses	1001	基础汉语（会话与听力）Chinese Language (I)	64	4	√			考试 Exam	公共 12 学分 General course (12 credit points)
		1002	基础汉语（阅读与写作）Chinese Language (II)	32	2		√		考试 Exam	
		1003	中国概况 Introduction to China	32	2	√			考试 ExamE	
		1004	概率论与数理统计 Probability Theory and Mathematical Statistics	32	2		√		考试 Exam	
		1005	汉字与中国文化 Chinese Characters and Chinese Culture	32	2		√		考试 Exam	
	学科基础课 Discipline Foundation	2001	高等环境化学 Advanced environmental chemistry	32	2	√			考试 Exam	学科基础课 4 学分 Discipline foundation courses (4 credit points)
		2002	高等微生物学 Advanced Environmental microbiology	32	2	√			考试 Exam	
	专业基础课 Specialized Foundation	2003	环境科学原理 Principle of environmental science	32	2	√			考试 Exam	专业基础课 6 学分 Professional foundation courses (6 credits points)
		2004	环境工程学 Environmental Engineering	32	2	√			考试 Exam	
		2005	环境规划与管理 Environmental planning and management	32	2	√			考试 Exam	

非学位课 Non-Degree courses	选修课 Optional Courses	3001	现代环境监测技术 Advanced environmental monitoring	32	2		√		考试 Exam	专业选修课不少于12学分 Optional Courses (12 credit points should be completed)
		3002	环境生态工程 Ecological engineering of Environment	32	2		√		考试 Exam	
		3003	环境影响评价 Environmental impact assessment	32	2		√		考试 Exam	
		3004	环境风险评估与管理 Environmental risk assessment and management	32	2		√		考试 Exam	
		3005	废水生物处理新技术 New Biological Waste water Treatment Technology	32	2		√		考试 Exam	
		3006	地表水环境修复技术 Environmental Remediation Technology for Surface Water	32	2		√		考试 Exam	
		3007	废水深度处理物化技术 Advanced Physico-chemical Treatment Technology of Wastewater	32	2		√		考试 Exam	
		3008	固体废弃物资源化技术 Recycling Technology for Solid wastes	32	2		√		考试 Exam	
		3009	饮用水水源保护与利用 Protection and Utilization of drinking water sources	32	2		√		考试 Exam	
		3010	给排水处理技术与应用 Water Supply and Waste-water Treatment Technology and Application	32	2		√		考试 Exam	
		3011	安全饮用水保障技术 Safeguarding Technology for Drinking Water Supply	32	2		√		考试 Exam	
		3012	碳达峰与碳中和策略与技术 Carbon Peaking and carbon neutrality strategies and technologies	32	2		√		考试 Exam	

（二）课程要求

学位课必须达到 70 分及以上，非学位课必须达到 60 分及以上，必修环节必须达到 70 分及以上。

7.2 Courses Requirements

Degree courses must have a score of 70 or above and non-degree courses must have a score of 60 or above

（三）学习时长

原则上，所有课程需要在一年内完成

7.3 Education Arrangement

In principle, all courses should be completed within 1 year

八、学位论文要求

学位论文是研究生培养工作的重要内容，包括论文的选题、开题报告、撰写、中期检查、预答辩、论文评阅和答辩等环节。论文工作中的各环节须分别按照《苏州科技大学硕士学位论文选题与开题报告的规定（试行）》、《苏州科技大学硕士学位论文中期检查的规定（试行）》、《苏州科技大学硕士学位论文预答辩的规定（试行）》和《苏州科技大学硕士学位授予工作细则（试行）》等文件的相关规定执行。

学位论文须在指导教师的指导下进行，学位论文应紧密结合研究领域的学科前沿问题进行选题，应具有一定的实际应用价值和学术理论意义，由研究生本人独立开展完成。学位论文须满足所规定的工作量，符合相关的选题要求，用于论文研究工作的时间不少于 1 年。论文书写必须符合《苏州科技大学硕士学位论文基本格式及相关要求》。

硕士学位论文答辩按照《中华人民共和国学位条例暂行实施办法》和《苏州科技大学硕士学位授予工作细则》进行。

附注：

（1）“1.0+0.5+1.5”培养模式

采取“1.0+0.5+1.5”培养模式。研究生在第一学年（1、2 学期）（1.0 年）完成学位课程及部分非学位课程的学习；第二学年第 1 学期（0.5 年）开展“科研训练”必修环节的工作，完成论文选题、开题、文献阅读等工作；自第二学年第 2 学期开始（1.5 年）进入研究生论文工作阶段，学生进入相关企业开展与工程实际紧密结合的研究工作，完成学位论文，时间不少于 1 年。(提前完成学位论文等各项所规定的工作且成绩优异者，经本人申请，符合规定，办理相关手续后，可提前答辩，但提前时间一般不超过半年)。

（2）课程教学分类实施

学位课程中学位公共课、学位基础课的教学应以系统讲授为主；学位方向课的教学以重点讲授和专题研讨相结合方式进行，重点强调理论和方法的深度、研究和发展的现状，充分结合专业研究和技术领域，发挥研究生的个人才能和特长；非学位课程应主要以专题讨论和交流为主要教学方式，并利用学术报告、方法探讨、理论分析和案例教学等，开展多种形式的互动教学，以拓展学生的相关专业知识，了解发展前沿、掌握科研方法和满足学生开展研究所需要的特殊基础知识。

8.Thesis Requirements

The master’s thesis is an essential component of graduate training and includes topic selection, proposal, thesis writing, mid-term review, pre-defense, external review, and final defense. Each stage shall be carried out in accordance with the relevant university regulations, including: Regulations on Master’s Thesis Topic Selection and Proposal (Trial), Regulations on Master’s Thesis Mid-term Review (Trial), Regulations on Master’s Thesis Pre-defense (Trial), and Detailed Rules for the Conferral of Master’s Degrees (Trial) of Suzhou University of Science and Technology.

The thesis shall be completed under the supervision of the advisor. The topic should closely align with frontier issues in the research field, and demonstrate practical applicability and academic significance. The thesis must be conducted and completed independently by the student, meet the required workload, and comply with topic requirements. The time devoted to thesis research shall be no less than one year. The thesis format shall conform to the Basic Format and Related Requirements for Master’s Theses of Suzhou University of Science and Technology.

The thesis defense shall be conducted in accordance with the Interim Measures for the Implementation of the Regulations of the People's Republic of China on Academic Degrees and the university's Detailed Rules for the Conferral of Master's Degrees.

Notes

(1) "1.0 + 0.5 + 1.5" Training Model

The program adopts a "1.0 + 0.5 + 1.5" model. In the first academic year (Semesters 1–2) (1.0 year), students complete degree courses and some non-degree courses. In the first semester of the second year (0.5 year), students undertake the compulsory "Research Training" component, including topic selection, proposal preparation, and literature review. From the second semester of the second year onward (1.5 years), students enter the thesis research stage. Students will undertake research closely aligned with engineering practice in relevant enterprises and complete the thesis; the thesis research period shall be no less than one year. Students who complete all required work ahead of schedule with excellent performance may apply for an early defense in accordance with regulations; the early defense period is generally no more than six months.

(2) Differentiated Course Teaching Approaches

For degree courses, public and foundational courses shall be delivered mainly through systematic lectures. Direction-specific degree courses shall combine focused lectures with seminar-style discussions, emphasizing depth in theories and methods, current research status and trends, and integration with professional research and technical fields to develop students' strengths. Non-degree courses shall primarily adopt seminars and discussions, supplemented by academic talks, methodological workshops, theoretical analysis, and case-based teaching, to broaden disciplinary knowledge, understand frontier developments, master research methods, and meet the specialized foundational needs for thesis research.