环境学院

攻读硕士学位留学生培养方案

（适用于留学硕士生）

**一、适用学科、专业**

环境科学与工程（按一级学科授学位）

**二、学分要求**

攻读硕士学位研究生期间，需获得学位要求学分不少于23（其中考试学分不少于13，自学课程学分另计），其中公共必修课程学分4，学科专业课程不少于19（其中必修环节2学分、基础理论课不少于3学分、本学科或相关专业基础理论和专业课程不少于12学分，实践环节2学分）。

**三、课程设置**

1. 公共必修课程（4学分）

初级汉语／汉语 Elementary Chinese／Chinese Language 2学分（考试）

中国文化与社会（英语） Chinese Culture and Society 60610082 2学分（考试）

中国科学技术与社会导论（中文） Introduction to science and technology of China and society 60610112

 2学分（考试）

中国哲学（英语） Chinese Philosophy 60610132 2学分（考试）

中国历史与文化（英语）Chinese History and Culture 60690032 2学分 （考试

汉语课程要求：根据入学时汉语水平测试成绩，选择相应水平的汉语课程。

2. 学科专业课程（≥19学分）

（1）必修环节（2学分）

文献综述与选题报告 Literature Review and Thesis Proposal 69990021 1学分（考查）

学术活动与学术报告 Academic Discussion 69990031 1学分（考查）

文献综述与选题报告要求：按照校系相关规定完成书面和口头报告。

学术活动要求：参加10次以上得以认可且有据可查的学术会议与活动。

（2）基础理论课程（从下列课程中选择≥3学分）

数值分析A Numerical Analysis A 60420044 4学分（考试）（中文授课）

数值分析 Numerical Analysis 60420254 4学分（考试）（英文授课）

或其它数学类的研究生课程

高等环境化学 Advanced Environmental Chemistry 70050323 3学分（考试）

环境生物技术原理 Fundamentals of Environmental Biotechnology 70050313 3学分（考试）

环境学院、化学系、化工系、生物系、水利系、土木系等开设的相关专业研究生基础理论课程

（3）本专业课程或相关专业基础理论和专业课程（≥12学分，外系课程≤4学分）

高级废水处理工程 Advanced Wastewater Treatment 80050233 3学分（考查）

高等给水工程 Advanced Water Supply Engineering 80050203 3学分（考试）

高等管网系统与管理Advanced Water Distribution System & Management 80050193 3学分（考试）

地下水污染防治技术 Groundwater Pollution Control Technology 3学分（考试）

空气污染化学 Air Pollution Chemistry 80050333 3学分（考试）

空气污染控制技术 Air Pollution Control Technology 80050283 3学分（考试）

固体废物综合管理 Integrated Solid Waste Management 80050273 3学分（考试）

危险废物处置技术 Hazardous Waste Disposal Technology 80050263 3学分（考试）

环境管理与政策 Environmental Management and Policy 80050213 3学分（考试）

环境遥感及其应用 Environmental Remote Sensing and Application 80050223 3学分（考试）

恢复生态学及其应用 Restoration Ecology and Application 80050243 3学分（考试）

全球环境问题 Global Environmental Issues 80050253 3学分（考查）生物膜基础与应用 Biofilms: fundamentals to applications 80050422 2学分（考查）

环境学院开设的其他中文或英文研究生课程

化学系、生物系等开设的相关专业研究生课程

人文、社科、经济、管理类课程

（4）实习实践环节（2学分）

专业实践 Internship/Field practice 80050291 1学分（考查）

社会实践 Social Investigation 69990041 1学分（考查）

专业实践要求：经系导师及教学主管的同意，到环境保护企业、机构、设计院等亲身参加生产、科研与管理等工作，累计时间不少于2周，实习结束后以成果汇报的方式进行考查。

社会实践要求：经系导师及教学主管的同意，在中国境内参加各类社会实践活动，累计时间不少于3周，实践结束后以成果汇报的方式进行考查。

3. 自学课程与研究课题有关的专门知识，可由导师指定内容系统地自学，并列入个人培养计划。自学课程学分另计。

4. 补修课程凡在本门学科上欠缺本科层次业务基础的留学硕士研究生，一般应在导师指导下补修有关课程。补修课只记成绩，不计入研究生阶段的总学分。

**四、学位论文工作**

论文的准备工作应尽早开始。论文工作计划与选题报告一般应在第二学期结束前完成，并将选题报告及论文工作计划提交给院教学办公室备案。

留学硕士研究生学位论文可用英语写作完成，但应包含一页汉字的中文摘要。其他要求按学校有关规定执行。

**注**：本培养方案于2015年1月12日由环境科学与工程学位分委员会讨论通过，适用于2015年1月之后入学的留学硕士研究生。

School of Environment Master Program for International Students

Ⅰ Subject and Major

Environmental Science and Engineering

Ⅱ Credits Requirement

During the study for master degree, at least 23 credits are demanded to acquire the degree (no less than 13 credits for examination courses, self-study courses excluded), which includes at least 4 credits for public compulsory courses, no less than 19 credits for subjective specialized courses （containing at least 2 credits for compulsory study, 3 credits for basic theory courses, 12 credits for basic theory and specialized courses of the subject or other relevant major and 2 credits for social practice）.

Ⅲ Curriculum Plan

1. Public Compulsory Courses (4 credits)

|  |  |  |
| --- | --- | --- |
| * Elementary Chinese／ Intermediate  Chinese /  Advanced Chinese
 |  | 2 credits (examination) |
| * Chinese Culture and Society **(taught in English**)
 | 60610082 | 2 credits (examination) |
| * Introduction to science and technology of China and society (taught in Chinese) 60610112 2 credits (examination)
* Chinese Philosophy **(taught in English**) 60610132 2 credits (examination)
* Chinese History and Culture **(taught in English**) 60690032 2 credits (examination)

  |  |  |

Requirement for Chinese courses: level of Chinese courses should be selected based on grade of the Chinese level test taken when entering the university.

2. Subjective Specialized Courses (≥19 credits)

(1) Compulsory study (2 credits)

 Literature Review and Research Proposal 69990021 1 credits (investigation)

 Seminars 69990031 1 credits (investigation)

Requirement for literature review and research proposal: written and oral report should be delivered according to related regulars

Requirement for seminars: attending at least 10 times of approbated and checkable seminars or activities.

(2) Basic theory courses (selection from the following courses ≥3 credits)

 Numerical Analysis A (taught in Chinese) 60420044 4 credits (examination)

 Numerical Analysis (taught in English) 60420254 4 credits (examination)

 Other mathematical graduate courses

 Advanced Environmental Chemistry 70050323 2 credits (examination)

 Fundamentals of Environmental Biotechnology 70050313 3 credits (examination)

 Other relevant basic theory courses offered by chemistry department, chemical engineering department, biology department, department of hydraulic engineering, department of civil engineering etc. for graduate students

(3) Basic theory courses and specialized course of the subject or other relevant subjects (≥12 credits, including ≤4 credits courses from other departments)

 Advanced Wastewater Treatment 80050233 3 credits (examination)

 Advanced Water Supply Engineering 80050203 3 credits (examination)

 Advanced Water Distribution System and Management 80050193 3 credits (examination)

 Groundwater Pollution Control Technology 3 credits (examination)

 Air Pollution Chemistry 3 credits (examination)

 Air Pollution Control Technology 80050283 3 credits (examination)

 Integrated Solid Waste Management 80050273 3 credits (examination)

 Hazardous Waste Disposal Technology 80050263 3 credits (examination)

 Environmental Management and Policy 80050213 3 credits (examination)

 Environmental Remote Sensing and Application 80050223 3 credits (examination)

 Restoration Ecology and Application 80050243 3 credits (examination)

 Global Environmental Issues 80050253 3 credits (investigation)

 Other Chinese or English graduate student courses offered by School of Environment

 Other relevant specialized course for master students in chemistry department and biology department

 Courses in humanities, social science, economics, management

(4) Social Practice (2 credits)

 Internship 80050291 1 credits (investigation)

 Social Practice 69990041 1 credits (investigation)

Demand of internship: with the agreement from supervisor and teaching director of the department, students should take part in the internship in environmental protection enterprises, organizations and designing institutes to experience the production, research and management, which should take at least 2 weeks in total, and report is demanded for investigation of the internship.

Requirement of social practice: with the agreement from supervisor and teaching director of the department, students should take part in the social practice within the territory of China, which should take at least 3 weeks in total, and report is demanded for investigation of the social practice.

3. Self-study courses

Systematic self-study on research topic related specialized knowledge should be developed under the guidance of supervisor, which can be listed into master program.

4. Restudy courses

All master students lack of bachelor level basis to the subject should restudy relevant courses under the guidance of supervisor. Restudy courses could not be listed in the total credits demand.

Ⅳ Thesis

Preparation for thesis should begin as early as possible. Working plan and topic choosing report of the thesis should be fulfilled before the end of the second semester and be submitted to the department teaching office for keeping on record.

Thesis for international master students can be written in English, which should include a Chinese abstract of at least 3000 characters. Other demand conforms to the relevant regulation of the university.

Note: this master program was discussed and approved by degree committee of Department of Environmental Science and Engineering on Jun.19th.2009, and should be applied for international master student who entered school after January .12th.2015.