

## 课程详述

### COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 <b>Course Title</b>	环境工程原理 <b>Principles of Environmental Engineering</b>
2.	授课院系 <b>Originating Department</b>	环境科学与工程学院 School of Environmental Science and Engineering
3.	课程编号 <b>Course Code</b>	ESE204
4.	课程学分 <b>Credit Value</b>	2
5.	课程类别 <b>Course Type</b>	专业基础课 Major Fundamental Courses
6.	授课学期 <b>Semester</b>	秋季 Fall
7.	授课语言 <b>Teaching Language</b>	中文 Chinese
8.	授课教师、所属学系、联系方式（如属团队授课，请列明其他授课教师） <b>Instructor(s), Affiliation &amp; Contact (For team teaching, please list all instructors)</b>	授课教授：史江红，环境科学与工程学院，13801015026 Professor: Jianghong Shi, School of Environmental Science and Engineering, Tel:13801015026
9.	实验员/助教、所属学系、联系方式 <b>Tutor/TA(s), Contact</b>	待公布 To be announced
10.	选课人数限额(可不填) <b>Maximum Enrolment (Optional)</b>	

11. 授课方式 <b>Delivery Method</b>	讲授	习题/辅导/讨论	实验/实习	其它(请具体注明)	总学时
	<b>Lectures</b>	<b>Tutorials</b>	<b>Lab/Practical</b>	<b>Other (Please specify)</b>	<b>Total</b>
学时数 <b>Credit Hours</b>	24	2	0	6(小组报告/Group Report)	32
12. 先修课程、其它学习要求 <b>Pre-requisites or Other Academic Requirements</b>	先修课 Pre-requisites: 大学物理 General Physics, 化学原理 General Chemistry				
13. 后续课程、其它学习规划 <b>Courses for which this course is a pre-requisite</b>	水处理工程 Water Treatment Engineering, 大气污染与防治 Atmospheric Pollution Prevention and Control, 固体废弃物处理处置与资源化 Solid Waste Treatment, Disposal and Recycling				
14. 其它要求修读本课程的学系 <b>Cross-listing Dept.</b>	无 N/A				

### 教学大纲及教学日历 SYLLABUS

15. 教学目标 **Course Objectives**

<p>1. 介绍环境工程的基本理论与技术原理，在此基础上，阐述这些理论与原理在污染控制与修复相关的科学研究与工程实践中的应用。</p> <p>2. 通过本课程，使学生具备良好的科学素质和工程素质，主要表现在如下几个方面：获取知识的能力、应用知识的能力、以及创新能力。</p> <p>1. The basic theory and technical principle of environmental engineering are introduced. Then, the application of these theories and principles in scientific research and engineering practice related to pollution control and rehabilitation is expounded.</p> <p>2. After this course, students should have good scientific and engineering quality, mainly in the following aspects: the ability to acquire knowledge, the ability to apply knowledge, as well as the innovative ability.</p>
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16. 预达学习成果 **Learning Outcomes**

<p>通过讲述环境工程中的水污染控制、空气污染控制以及危险废物的环境污染修复实践，将理论与应用进行了很好的结合。在课程中融入学科前沿及研究方法等内容，从环境工程原理出发研究实际环境问题，为后续的专业课程学习打下良好的基础。</p> <p>Theories and applications are well integrated through the introduction of water pollution control, air pollution control and environmental pollution restoration of hazardous waste in environmental engineering, By integrating cutting-edge disciplines and research methods, the students can study practical environmental problems based on the environmental engineering principles, and lay a good foundation for the following major courses.</p>
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17. 课程内容及教学日历（如授课语言以英文为主，则课程内容介绍可以用英文；如团队教学或模块教学，教学日历须注明主讲人）  
**Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)**

序号 NO.	内容 Content	学时安排 Hours				学时汇总 Sub-total
		理论 Theoretic Teaching	实验 Experiment	实践 Exercise	上机操作 Computer Operation	
1	绪论 Introduction	2				2
2	转化过程 Transformation Processes	6				6
3	迁移现象 Transport Phenomena	4				4
4	迁移和转化模型 Transport and Transformation Models	4				4
5	水质问题及其相关法规 Water Quality and Relevant Laws and Regulations	2				2
6	水质工程中的应用 Application in Water Quality Engineering	2				2
7	空气质量工程中的应用 Application in Air Quality Engineering	4				4
8	危险废物减量化与处理技术 Hazardous Waste Minimization and Treatment	2				2
9	小组报告 Group Report	0		4		4
10	复习答疑 Review and Answer Questions	0		2		2
Total		26		6		32

#### 18. 教材及其它参考资料 Textbook and Supplementary Readings

##### 1. 课程教材/Teaching Materials or Textbooks

威廉 W.纳扎洛夫, 莉萨·阿尔瓦雷斯-科恩. 环境工程原理 [M]. 化学工业出版社, 2006.

Nazaroff W W, Alvarez-Cohen L. Environmental engineering science [M]. Wiley, 2001.

##### 2. 主要参考书目/ References for Further Reading

(1) 戴维斯, 马斯滕, 王建龙,等. 环境科学与工程原理[M]. 清华大学出版社, 2007.

(2) 施瓦岑巴赫. 环境有机化学[M]. 化学工业出版社环境科学与工程出版中心, 2004.

Schwarzenbach R P, Gschwend P M, Imboden D M. Environmental Organic Chemistry [M]. J. Wiley, 2001.

**课程评估 ASSESSMENT**

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		10%		
课堂表现 Class Performance				
小测验 Quiz				
课程项目 Projects		20%		
平时作业 Assignments		20%		
期中考试 Mid-Term Test				
期末考试 Final Exam		50%		
期末报告 Final Presentation				
其它（可根据需要 改写以上评估方式） Others (The above may be modified as necessary)				

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20. 记分方式 GRADING SYSTEM

A. 十三级等级制 Letter Grading  
 B. 二级记分制（通过/不通过） Pass/Fail Grading

**课程审批 REVIEW AND APPROVAL**

21. 本课程设置已经过以下责任人/委员会审议通过  
 This Course has been approved by the following person or committee of authority

