

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 Course Title	水处理工程 Water Treatment Engineering
2.	授课院系 Originating Department	环境科学与工程学院 School of Environmental Science and Engineering
3.	课程编号 Course Code	ESE303
4.	课程学分 Credit Value	4
5.	课程类别 Course Type	专业核心课 Major Core Course
6.	授课学期 Semester	秋季 Fall
7.	授课语言 Teaching Language	中英双语 English & 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） Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	邓保林，环境和科学工程学院，电话: 0755-88018040，邮箱: dengbl@sustech.edu.cn Baolin Deng, School of Environmental Science and Engineering
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	待公布 To be announced
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	

11. 授课方式 Delivery Method	讲授	习题/辅导/讨论	实验/实习	其它(请具体注明)	总学时
	Lectures	Tutorials	Lab/Practical	Other (Please specify)	Total
学时数 Credit Hours	60	0	0	4(test)	64
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	先选课/Co-requisites: 环境工程原理/ Principles of Environmental Engineering, 环境化学/Environmental Chemistry, 环境监测/ Environment Monitoring				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 N/A				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 N/A				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程教学目标重在培养学生的基本技能、提高学生的理论知识水平和实践能力，激发学生的创新能力，为社会和国家培养环境科学与工程专业人才打好基础。

The purpose of this course is to training students have the basic major skills, to improve the level of theoretical knowledge and the ability of practice, and to stimulate students' ability to innovate.

16. 预达学习成果 Learning Outcomes

本课程通过向本科生全面讲授水和废水处理过程中的主要物化和生化处理单元的原理和特点、工艺的计算方法及其应用范围、主要构筑物的构成和运行特征、典型的水与废水处理工艺以及相关新兴技术的国内外研究进展，为学生今后开展水与废水处理技术的研究、设计和工程管理打下坚实的基础。

After the course , students will be familiar with the principle and characteristics of the main physicochemical and biochemical treatment units in the process of water and wastewater treatment, the calculation method and application, the constitute and operation characteristics of main structures. Be familiar with the typical water and wastewater treatment process and related emerging technologies in domestic and foreign. It will be a foundation for the study, design and engineering management of water and wastewater treatment technology for students.

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.)

教学内容:

第一部分: Water Treatment and Supplies (32 class hours)

Contents	class hours
Intro to Water supply	2
Coagulation and Flocculation	6
Sedimentation	4
Granular Filtration	4
Membrane Processes	6
Disinfection and Fluoridation	4
Water Softening and Stabilization	4
Middle Term	2

第二部分: Wastewater Treatment (32 class hours)

Contents	class hours
Intro: Wastewater and Treatment	4
Primary Treatment	2
2nd Treatment: Suspended Growth Process	6
2nd Treatment: Attached Growth and Hybrid Processes	4
Tertiary Treatment	4
Wastewater Plant Residual Management	4
New Concepts in Wastewater treatment process	6
Final:	2

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

Ref. Books:

Water and Wastewater Engineering – Design Principles and Practice, by Mackenzie L. Davis, McGraw Hill, 2010.

Introduction to Environmental Engineering and Science, 3rd Edition, by Gilbert M. Masters and Wendell P. Ela

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	64	5%		
课堂表现	64	5%		

Class Performance				
小测验 Quiz	4	20%		
课程项目 Projects				
平时作业 Assignments	5times	10%		
期中考试 Mid-Term Test	2	30%		
期末考试 Final Exam	2	30%		
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)				

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