

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	环境材料学 Environmental Materials Science
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	ESE314
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业选修课 Major Elective Courses
6.	授课学期 Semester	秋季 Fall
7.	授课语言 Teaching Language	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） Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	陈洪，环境科学与工程学院，邮箱：chenh3@sustech.edu.cn，电话：1368254801 Hong Chen, ESE, Email: chenh3@sustech.edu.cn, cell phone: 13682546801
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 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
学时数 Credit Hours	45	3	0	0	48
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 N/A				
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

系统的介绍各类环境材料及材料学基本内涵，使学生全面掌握材料在开发、应用、制备、加工、再生等过程中与自然环境之间的相互影响，在此基础上了解环境材料在相关领域中的应用与环境效应情况。

Systematically introduce different class of environmental materials and the basic concept of material science. Help the students to gain basic knowledge on the environmental effects introduced during the material design, application, preparation and fabrication process. Based on the aforementioned gained knowledge, further introduce the environmental materials applications in environmental friendly area.

16. 预达学习成果 Learning Outcomes

完成本课程的学习，学生具备以下基本知识：

1. 了解不同材料在其服役周期内对环境可能造成的危害；
2. 具备使用和制备环境友好材料的基本知识方法。

After finishing this course, the students should have the following basic knowledge:

1. Understand the environmental effects introduced by different types of materials;
2. Obtain basic knowledge on preparation and application of environmental friendly materials.

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.)

章节 Chapter	主要内容 Main Contents	各教学环节学时分配 Session Distribution
1	环境材料学绪论 Introduction to Environmental Material Science	3
2	材料对环境的影响 Materials' Environmental Effects	4
3	材料环境影响的评价技术 Evaluation Techniques of Materials' Environmental Effects	4
4	材料的资源效率理论 Materials' Resources Effects	2
5	材料的生态设计 Ecology Design of Materials	3
6	材料的环境友好加工及制备 Materials Environmental Friendly Processing Techniques	3
7	材料工业生态学 Ecology of Material Industry	3
8	环境治理材料 Environmental Remediation Materials	3
9	固体废弃物中有价元素的回收利用技术 Techniques for Recycling Valuable Elements in Solid Wastes	2
10	有毒有害元素的替代技术 New Techniques for Replacing Hazardous Elements	2
11	纯天然材料 Natural Materials	3
12	仿生物材料 Biomimetic Materials	3
13	环境降解材料 Environmental Decomposable Materials	3
14	绿色包装材料 Green Package Materials	3
15	生态建材 Ecology Building Construction Materials	4
16	总复习 Summary	3

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

教材：《环境材料学》第二版，清华大学出版社，翁瑞、冉瑞、王蕾主编。

Textbook: *Environmental materials science*, Rui Weng, Rui Ran, *etal.* 2nd, Tsinghua University Press

参考资料：《环境材料》，孙胜龙主编，化学工业出版社 2002 年。

Reference: *Environmental materials science*, Shenglong Sun, Chemical Industry Press, 2002.

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		5%		
课堂表现 Class Performance		5%		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments				
期中考试 Mid-Term Test		20%		
期末考试 Final Exam		60%		
期末报告 Final Presentation		10%		
其它（可根据需要 改写以上评估方式） Others (The above may be modified as necessary)				

University
and

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

