

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	高分子材料 Polymer Materials				
2.	授课院系 Originating Department	材料科学与工程 Department of Materials Science and Engineering				
3.	课程编号 Course Code	MSE313				
4.	课程学分 Credit Value	3				
5.	课程类别 Course Type	专业核心课 Major Core Courses				
6.	授课学期 Semester	春季 Spring				
7.	授课语言 Teaching Language	英文 English				
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)	孙大陟 副教授 Prof. Dazhi Sun 材料科学与工程系 Department of Materials Science and Engineering, 0755-88018577 sundz@sustc.edu.cn				
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	48	0	0	0	48

12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	MSE001 材料科学与工程基础 Fundamentals of Materials Science and Engineering
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	N/A
14. 其它要求修读本课程的学系 Cross-listing Dept.	N/A

教学大纲及教学日历 SYLLABUS

15. **教学目标 Course Objectives**

1. Understand the fundamentals of polymer structure-property relationship.
 2. Learn the methods of polymer synthesis.
 3. Understand the properties of polymer solid state and solution.
 4. Understand the processing methods for thermoplastics, elastomers, and thermosets.
- Learn the basic applications of polymers and composites.

16. **预达学习成果 Learning Outcomes**

Undergraduate students who have passed this course are expected to learn the fundamentals of all aspects of polymers including polymer synthesis, polymer solution, polymer solid state properties, polymer processing and various applications based on polymeric 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.)



- Lecture 1 (3 Credit hours) : Introduction
- Lecture 2 (3 Credit hours) : Synthesis of Polymers
- Lecture 3 (3 Credit hours) : Polymer Solutions
- Lecture 4 (6 Credit hours) : Solid State Properties of Polymers
- Lecture 5 (3 Credit hours): Polymer Blends and Composites
- Lecture 6 (6 Credit hours): Viscoelasticity
- Lecture 7 (3 Credit hours): Degradation and Failure of Polymers
- Lecture 8 (3 Credit hours): Adhesives
- Lecture 9 (3 Credit hours): Polymer Fibers
- Lecture 10 (3 Credit hours): Coatings
- Lecture 11 (3 Credit hours): Membranes
- Lecture 12 (3 Credit hours): Polymer Processing: Thermoplastics
- Lecture 13 (3 Credit hours): Polymer Processing: Elastomers
- Lecture 14 (3 Credit hours): Polymer Processing: Thermosets

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

- (1). Polymer Science and Technology Joel R. Fried, 2nd edition, Prentice Hall, ISBN 0133429946.
- (2). Introduction to Polymer Materials (高分子材料导论, 双语教学用) 李坚等, 化学工业出版社.
- (3). 高分子材料科学导论. 张德庆等. 哈尔滨工业大学出版社.

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				
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		30		

期末考试 Final Exam		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

