

## 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>	材料科学基础现代材料科学与技术前沿讲座 I Seminars on Frontiers of Modern Materials Science and Technology I				
2.	授课院系 <b>Originating Department</b>	材料科学与工程系 Department of Materials Science and Engineering				
3.	课程编号 <b>Course Code</b>	MSE309				
4.	课程学分 <b>Credit Value</b>	1				
5.	课程类别 <b>Course Type</b>	专业基础课 Major Foundational Course				
6.	授课学期 <b>Semester</b>	秋季 Fall				
7.	授课语言 <b>Teaching Language</b>	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) <b>Instructor(s), Affiliation &amp; Contact</b> (For team teaching, please list all instructors)	任富增, 材料科学与工程系, 电子邮箱: renfz@sustc.edu.cn 叶飞, 材料科学与工程系, 电子邮箱: yef3@sustc.edu.cn Fuzeng Ren, Department of MSE, Email: renfz@sustc.edu.cn Fei Ye, Department of MSE, Email: yef3@sustc.edu.cn				
9.	实验员/助教、所属学系、联系方式 <b>Tutor/TA(s), Contact</b>	无 NA				
10.	选课人数限额(可不填) <b>Maximum Enrolment (Optional)</b>	无 NA				
11.	授课方式 <b>Delivery Method</b>	讲授 <b>Lectures</b>	习题/辅导/讨论 <b>Tutorials</b>	实验/实习 <b>Lab/Practical</b>	其它(请具体注明) <b>Other (Please specify)</b>	总学时 <b>Total</b>
	学时数 <b>Credit Hours</b>	16				16

12. 先修课程、其它学习要求 <b>Pre-requisites or Other Academic Requirements</b>	MSE207 材料科学基础, MSE209 材料科学基础实验 MSE207 Fundamentals of Materials Science, MSE209 Experiments for Fundamentals of Materials Science
13. 后续课程、其它学习规划 <b>Courses for which this course is a pre-requisite</b>	无 NA
14. 其它要求修读本课程的学系 <b>Cross-listing Dept.</b>	无 NA

### 教学大纲及教学日历 SYLLABUS

#### 15. 教学目标 Course Objectives

本课程邀请国内外材料领域专家讲座, 基于自身材料研究和开发工作, 讲授材料研究、设计和开发等前沿知识, 从而激发学生对材料科学与工程的兴趣, 拓宽学生知识面, 开阔学生视野, 增进对材料学科新理论、新技术、新工艺和新进展的了解, 以及对材料研究开发和生产应用的相关标准、环境和社会影响的了解。

This course invites domestic and foreign experts in the field of materials science and engineering. They will give lectures based on their experience of material research and development. The frontier knowledge of material research, design and development will be introduced, aiming to stimulate students' interest in materials science and engineering, broaden the knowledge and horizons, and enhance the understanding of new theory, new technology, new process and new progress. It will also enhance the understanding of the related standards of material research, development, production and application, as well as the impact on environment and society.

#### 16. 预达学习成果 Learning Outcomes

1. 开阔学生视野, 拓宽知识面, 增进对材料学科新理论、新技术、新工艺和新进展的了解。
2. 全面了解材料研究开发和生产应用过程对环境和社会的影响, 以及相关标准、健康、法律等影响因素。
3. 理解材料研究和开发项目管理的基本原则和方法。
4. 激发学生对材料科学与工程的学习兴趣和探索精神。

1. To broaden the horizons and knowledge of students, and to enhance the understanding of new theory, new technology, new process and new development.
2. To comprehensively understand the impacts of material research, development and production on environment and society, as well as the related standards, health, legal and other influencing factors.
3. To understand the basic principles and methods of material research, development and project management.
4. To stimulate the interests on learning and exploration in materials science and engineering.

#### 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.)**

以双周讲座报告的形式讲述和讨论材料科学与工程各领域的研究进展，涉及陶瓷、金属、高分子、电子材料、复合材料、能源材料、生物材料等各种材料，着重阐述结构以及它们与力学、电学、光学、磁学、热学以及生物性能的关系。共 8 次讲座，每次 2 个报告，每个报告约 1 小时。

Biweekly seminars on topics of Interest in materials science and engineering. Examples are drawn from ceramics, metals, polymers, electronic materials, and composites. Physical and chemical structures, and their relationship to mechanical, electrical, dielectric, optical, magnetic, thermal and biological properties.

8 seminars, each seminar have two lectures and 1 hour for each lecture.

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

无 NA

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		40		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments				
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		50		



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

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