

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	晶体学 Crystallography				
2.	授课院系 Originating Department	材料科学与工程系 Department of Materials and Engineering				
3.	课程编号 Course Code	MSE203				
4.	课程学分 Credit Value	2				
5.	课程类别 Course Type	专业基础课 Major Foundational Courses				
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)	程春, 副教授, 材料科学与工程系 Dr. Chun Cheng, Associate Professor, Dept. of Materials Science and Engineering, SUSTC 0755-88018568 cheng.c@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	32				32

12. 先修课程、其它学习要求
Pre-requisites or Other Academic Requirements

MA102B 高等数学 (下) A Calculus II A
MA103B 线性代数 I B Linear Algebra I B
PHY105B 大学物理 (下) B General Physics II B

13. 后续课程、其它学习规划
Courses for which this course is a pre-requisite

14. 其它要求修读本课程的学系
Cross-listing Dept.

教学大纲及教学日历 SYLLABUS

15. 教学目标 **Course Objectives**

Crystallography is an important basic course of MSE and also Physics, Chemistry and Biology. This course provides undergraduate level students basic theories and knowledge of crystallography. The purpose of this course is to provide fundamental knowledge for further learning of courses such as Solid Physics, Modern Material Characterization and Analyzing Techniques, Materials Physics, etc. Fundamental topics such as the concept of crystal, the symmetry of crystal the properties of crystal, and some crystal characterization technologies will be introduced.

16. 预达学习成果 **Learning Outcomes**

The students are expected to:

Grasp the basic principles of structure of materials, crystallography and crystal defects.

Understand the physics and application of XRD diffraction and TEM.

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.)

Week	Lectures	Instructor
1	Crystal	C. CHENG
2-3	The Formation and Defects of Crystal	C. CHENG
4	Crystal Projection	C. CHENG
5-6	Crystal Symmetry	C. CHENG
7	Crystal Orientating & Crystallographic Symbols	C. CHENG
8	Ideal Crystal Morphology	C. CHENG
9	Regular Grouping of Crystal	C. CHENG
10-11	Crystal Internal Structure and Space Group Symmetry	C. CHENG
12	Crystal Structural Variety	C. CHENG
13	Crystal Chemistry	C. CHENG
14	Crystal Physics	C. CHENG
15-16	Crystal Characterization Technologies: X-ray Diffraction	C. CHENG

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

1. 晶体学基础, 2004年9月第1版, 秦善, 北京大学出版社, ISBN 9787301075180;
2. 现代晶体化学, 2001年8月第一版, 陈敬中, 高等教育出版社, ISBN 7040099241
3. 现代晶体学(第1卷)晶体学基础; 现代晶体学(第2卷)晶体的结构, 2011年7月第一版; B·K伐因斯坦(Vainshtein B. K.) , 中国科学技术大学出版社, ISBN 9787312027826 (此书有中、英及俄文版本)
4. Giacobozzo, C., ed. Fundamentals of Crystallography. Oxford: Oxford University Press, 1992. ISBN: 9780198555780.

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		7		
课程项目 Projects		35		
平时作业 Assignments		8		
期中考试 Mid-Term Test				
期末考试 Final Exam		40		
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