

* Course Name	Chinese			
	English Surfaces and Interfaces of Materials			
* Credits	2	* Teaching Hours	1 =16	
* Semester	Spring	* Cross-semester?	No	Spanning over Semesters
* Course Type	Program Frontier Course	* Course Type	For full-time students	
* Course Category	Specialized Course	Targeting Students	Master Level	
* Instruction Language	Chinese	Teaching Method	In class teaching	
* Grade	Letter grading	Exam Method	Essay	
* School	School of Materials Science and Engineering			
Subject	Materials Science			
Person in charge	Name	ID	School	E-mail
				zhangwl@sjtu.edu.cn
* () Course Description	200			
* English Course Description	<p>The main contents of this course include six parts: surface atomic structure, surface electronic structure, surface thermodynamics, surface adsorption, surface analysis method as well as surface and interface effect. It covers basic concepts of two-dimensional crystallography, atomic arrangement of surfaces, relaxation and reconstruction, surface defects, surface and interfacial states as well as surface tunneling effects, surface space charge layers and surface conductance, interface and grain boundary characteristics, the basic theory of surface thermodynamics, surface tension and surface energy, macroscopic and microscopic theories of surface adsorption, surface analysis methods as well as phenomena and their applications related to surface and interface theories. The</p>			

	prerequisite includes Materials Science Foundation Metallurgy or Introduction to Solid State Physics.			
* () Syllabus		Content	Hours	Format
			4	
			6	
			6	
			4	
			4	
			6	
			4	
* English Syllabus		Content	Hours	Format
		Chapter 1: Introduction	4	Teaching
		Chapter 2: Surface atomic structure	6	Teaching
		Chapter 3: Surface electronic structure	6	Teaching
		Chapter 4: Surface thermodynamics	4	Teaching
		Chapter 5: Surface adsorption	4	Teaching
		Chapter 6: Surface analysis methods	6	Teaching
		Chapter 7: Effects of surface and interface	4	Teaching
* Requirements	1	50		
	2	4	20% +	80%
* English Requirements	1 Homework For the course, totally four homework should be done. The homework will be taken from the four parts including surface atomic structure, surface electronic structure, surface thermodynamics and surface adsorption corresponds one homework.			

	2 Examination: Attendance and Homework 20% +course papers 80%
* Resources	1 1993 2 1995.1
* English Resources	1. Surface and interface physics. Lvbing Zhu, 1993 2 Surface and interface physics of semiconductors, Si chou Q u, 1995
Note	