

* Course Name	Chinese			
	English Fundamentals of Functional Materials			
* Credits	3	* Teaching Hours	48 1 =16	
* Semester	Spring	* Cross-semester?	No	Spanning over Semesters
* Course Type	Program Core Course	* Course Type	Both full & part time students	
* Course Category	Specialized Course	Targeting Students	All graduates	
* Instruction Language	English	Teaching Method	In class teaching	
* Grade	Letter grading	Exam Method	Oral exam	
* School				
Subject				
Person in charge	Name	ID	School	E-mail
				dengtao@sjtu.edu.cn
* () Course Description	200			
* English Course Description	<p>This course covers the fundamental theories, characterizations and applications of various physical properties of functional materials including electrical, magnetic, optical and thermal properties. Topics in this course illustrate the essences of optical, electrical, magnetic and thermal properties by applying theory of quantum mechanics. This course will help student further understand the relationship between performance and structure of functional materials. Based on the understanding of the fundamentals of functional materials, the students will grasp not only the meaning, principle, evaluation and designing method of optical, electrical, magnetic and thermal properties of materials, but also the relationship</p>			

	between the physical properties and structures of materials. Additionally, the course will train the graduate students to study the physical properties of functional materials scientifically. The course will also offer the opportunities for students to know state-of-the-art researches in the materials science and engineering field.																														
* () Syllabus	<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>4</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10</td> <td></td> <td></td> </tr> <tr> <td></td> <td>4</td> <td></td> <td></td> </tr> </table>								4				10				10				10				10				4		
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* Requirements	<p style="text-align: center;">50</p> <p>1. 30%</p> <p>2. 30%</p> <p>3. 40%</p>																														

<p>* English Requirements</p>	<p>1.Home assignments (30%); 2.Quizzes and activity (30%); 3.Final term presentation (40%).</p>
<p>* Resources</p>	<p>1) J. Simmons, K. S. Potter, <i>Optical Materials</i>, Academic Press, 1999 2) R. E. Hummel, <i>Electronic Properties of Materials</i>, Springer, 1985 R. C. O’Handley, <i>Modern Magnetic Materials: Principle and Applications</i>; John Wiley & Sons Inc, 2000.</p>
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<p>Note</p>	