

## Kphqt o cvkqp "Hqt o "hqt"ULVW" I t c f w cvg "Rtqhguukqp" Eqwtugu"

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* Course Name	Chinese			
	English			
* Credits	2	* Teaching Hours	32 1 =16	
* Semester	Spring	* Cross-semester?	No	°óñÔ g S °Program CoreG Course
			For full-time students	
* Course Category	Specialized Course	Targeting Students	Doctoral Level	
* Instruction Language	Chinese	Teaching Method	In class teaching	
* Grade	Letter grading	Exam Method	Essay	
* School				
Subject				
Person in charge	Name	ID	School	E-mail
				luweijie@sjtu.edu.cn
Gzvpgfgf "Kphqt o cvkqp"				
* ( ) Course Description	200			
* English Course Description	<p>This course is a professional course for graduate students majoring in composite materials in School of Materials Science and Engineering. This course is the study of composite interfaces, involving the key scientific issues, like the formation and characteristics of interfaces, effect on the mechanical properties, and the optimizing control to improve the composite performance. The main contents include: the concept of composite interface, the microstructure and characterization of composite interface, effect of interface structure on micro and macro performance, the relationship between composite components and interface structure, the stability of interface, interface reaction and its control, the optimizing design of interface and effective optimization methods. After completing this course, students are expected</p>			

	to systematically grasp the specialized knowledge of composite interface, be able to control the microstructure and mechanical properties of composite materials based on interface optimization and finally optimally design composites. This course can also help students systematize the professional knowledge and lay the foundation of materials science research. It can also serve as a reference for other second-grade majors in SMSE and mechanic major.		
* ( ) Syllabus			

* English Syllabus			
	Introduction: A general introduction to the course arrangement, the main lecture content, assessment content, etc.		Teaching
	Combined with the National Award PPT to teach the content and methods of composite interface research		Teaching
	Microstructure and characterization of composite interface		Teaching
	Effect of interface structure characteristics on micro and macro performance		Teaching
	Relationship between interface structure and composite material composition		Teaching
	Stability of composite interface		Teaching
	Interface reaction and its control method		Teaching
	Optimized design and effective ways to optimize interface		Teaching

	Visit the laboratory to understand melting, isothermal forging of titanium matrix composites and discuss the effect of manufacturing process on performance		visit and observe
	Submit papers		
* Requirements	50		
* English Requirements	Write a relevant research report. The report does not limit the number of words, but it is required to write in conjunction with domestic and foreign developments and your own scientific research practice, not a simple summary report. Finally, the scores are comprehensively evaluated based on the course participation.		
* Resources			
* English Resources	Composite Material Interface, Chemical Industry Press, 2010, Xugang Yang Composite Materials Science, Chemical Industry Press, 2011, Yihe Zhang Introduction to Metal Matrix Composites Design, Science Press, 2016, Gaohui Wu Composite Material Technology, Chemical Industry Press, 2018, Huazhen Wei, Hengchun Li, Yulong Zhang Interface Technology of Advanced Composite, Aviation Industry Press, 2017, Baoyan Zhang		
Note			