*	Chinese							
Course Name	English Engineering Materials Failure Analysis and Manufacturing							
* Credits	4		* Teaching Hours	64 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								
Subject								
y	Name	ID	School		E-mail			
Person in charge								
					200			
				FMEA				
*					CAD			
() Course Description								
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* English Course Description	This course is the experimental and practical teaching system of the School of Materials Science and Engineering. The course has five options. Student of this course can choose one of the platforms to start his/her study. The platforms including State Key Lab of Metal Matrix Composites; National Engineering Research Center of Die & Mold CAD; Shanghai Key Laboratory of Materials Laser Processing and Modification; Institute of Solidification Science and Technology; National Engineering Research Center of Nanoscience and Technology. During the study, the students use their knowledge and skills learned before to design the process and manufacture some examples. Use their own hands, prepare the engineering samples and then the failure analysis of these samples. The students can integrate theory with practice during these practices and then enhance the independent innovation ability						
* () Syllabus	V ∉ek	Content	Hbu	ırs	Format		
	1		2	1			
	2		4				
	3		4				
	4		4				
	5			1			
	6		4				
	7-8		8				
	9-13			0			
	14-15			3			
	16		4				
* English Syllabus	Week	Content	Hours	Form	at		
	1	Course introduction. Five teachers introduced their	4				
	2	own teams; Laboratory safety. Composite materials & forging	1	4 Online teaching			
	3	Welding & nanomaterials	4 Online teach				
	4	Basic knowledge of investment casting, casting process design; Material testing technology	4	Online teaching			
	5	Molecular dynamics simulation, first principles calculation; Fracture mechanics analysis of material failure	4	Online teaching 4			
	6	The error sources of material processing simulation; Introduction to casting simulation.	4	4 Online teaching			
	7-8	Simulation and optimization			ice		
	9-13	Material preparation and processing	20 Practice				
	14-15	Analysis and testing	8				
	16	Report & Grading	4	4 In class teaching			
*		50					
Requirements	10	+ +					
1	I.						

	20%
	20%
	50%
* English Requirements	Attendance, practice, classroom discussion + experimental report, paper + presentation. Attendance 10%, Class discussion 20% Practice 20% Reports and papers 50%
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Resources	
* English Resources	"Investment casting", "engineering materials forming technology foundation ", etc
Note	

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