

New Graduate Course Application Form, SJTU

Basic Information				
* Course Name	Chinese			
	English Additive Manufacturing Technologies			
* Credits	3	* Teaching Hours	48 1 16	
* Semester	Fall	* Cross-semester?	No	Spanning over Semesters
* Course Category	Specialized Course	* Course Type	For full-time students	
* Instruction Language	Chinese	Teaching Method	In class teaching	
* Grade	Letter grading	Exam Method	Essay	
* School				
Subject				
Person in charge	Name	ID	School	E-mail
				fengkai@sjtu.edu.cn
Extended Information				
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* English Course Description	<u>Additive Manufacturing (AM) is one of the fastest developing manufacturing technologies in recent years. Corresponding applications have been conducted to various manufacturing industry areas such as aviation, aerospace, automotive and medical instrument. As a professional elective course, "Additive Manufacturing" focuses on and significantly meaningful to bringing up</u>			

	<p>students' creative thinking, deepening students' understanding of innovative manufacturing technology, and improving students' engineering innovation and comprehensive practice capabilities.</p> <p>The present course clarifies the AM technologies via multi angles including technique category, metal/polymer AM and AM material characteristics. Such arrangements aim to teach the students fundamental theories, knowledge and skill of AM concept and instruments, therefore letting the course participants acquire the capabilities of categorizing the AM techniques and choosing the appropriate AM technique to solve the specific problem.</p> <p>The course targets are listed as follows:</p> <ol style="list-style-type: none"> 1. Acquiring the AM fundamental theory, knowledge and skill, thus to bring up the students' interdisciplinary innovative thinking ability; 2. Understanding the material processing procedures of different AM techniques, being able to operate corresponding AM instruments and being informed of the cutting-edge AM applications in industries; 3. Guiding the students to solve real industrial problems using the learned AM technologies by experimental classes and small research projects; 4. Letting the students understand the impact of AM technologies on manufacturing industry and human daily life by professional knowledge learning and AM instruments practicing, therefore leading the students be aware of social services. 																																																
<p>* () Syllabus</p>	<table border="0"> <tr><td>1.</td><td>3</td><td></td></tr> <tr><td>2.</td><td>3</td><td></td></tr> <tr><td>3.</td><td>3</td><td></td></tr> <tr><td>4.</td><td>3</td><td></td></tr> <tr><td>5.</td><td>3</td><td></td></tr> <tr><td>6.</td><td>3</td><td></td></tr> <tr><td>7.</td><td>3</td><td></td></tr> <tr><td>8.</td><td>3</td><td></td></tr> <tr><td>9.</td><td>3</td><td></td></tr> <tr><td>10.</td><td>3</td><td></td></tr> <tr><td>11.</td><td>3</td><td></td></tr> <tr><td>12.</td><td></td><td>3</td></tr> <tr><td>13.</td><td>3</td><td></td></tr> <tr><td>14.</td><td>3</td><td></td></tr> <tr><td>15.</td><td>3</td><td></td></tr> <tr><td>16.</td><td></td><td>3</td></tr> </table>	1.	3		2.	3		3.	3		4.	3		5.	3		6.	3		7.	3		8.	3		9.	3		10.	3		11.	3		12.		3	13.	3		14.	3		15.	3		16.		3
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	<p>14. Experiment 2: Basic procedures and operations of Laser metal deposition process 3 Lab</p> <p>15. Experiment 3: Basic procedures and operations of wire-arc additive manufacturing process 3 Lab</p> <p>16. Open task 2: Summary of experiment 3 Presentation</p>
* Requirements	<p>20% + 30% + 50% + 50%</p>
* English Requirements	<p>Attendance 20% +Experiments 30% +Reports 50%</p>
Resources	<p>1. 3D 2017</p> <p>2. Wöhlers T., Wöhlers report 2016 executive summary. America: Wöhlers Associates, Inc, 2016.</p> <p>3. Gibson I., Rosen D.W, Stucker B., Additive Manufacturing Technologies, Springer, 2010.</p>
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