

## 教學計畫書 Syllabus

課號	EM3520	學分 Credit	2	時數 Hour	2
中文課名	機械製造		Course	Manufacturing engineering	
授課教師 Instructor	葉豐賓(Yeh, Feng-Bin, D204)		選/必修 Selection	必修 Required Course	
類別	中文		英文		
學校教育使命與本課目的關係	<ol style="list-style-type: none"> <li>1. 科技知識：機械製造理論</li> <li>2. 明晰的思維邏輯：分析情境、解題</li> <li>3. 思考創造能力：分析情境、解題</li> </ol>		<ol style="list-style-type: none"> <li>1. Sci-Tech knowledge : manufacturing engineering content</li> <li>2. Clear reasoning logics : context analysis &amp; problem solving</li> <li>3. Creative thinking : context analysis &amp; problem solving</li> </ol>		
本課程可培養學生之核心能力	<ol style="list-style-type: none"> <li>1. 具備艦船工程及動力系統基礎學理</li> <li>2. 理解艦船工程及動力系統相關數學、基礎科學及工程知識的能力</li> <li>3. 運用艦船工程及動力系統相關知識，發掘、分析與解決問題的能力</li> </ol>		<ol style="list-style-type: none"> <li>1. Acquiring an understanding of the disciplines on naval architecture and power system</li> <li>2. Understanding naval architecture and power system on a foundation of math, science and engineering knowledge</li> <li>3. Applying knowledge of naval architecture and power system to identify, formulate and solve problems</li> </ol>		
課程目標	<p>建立學生機械製造方面的基本知識與邏輯分析能力，使能夠運用相關的原理原則來處理或解決製造工程上的問題。</p>		<p>Establish the ability to understand fundamental knowledge and apply logical analysis within the manufacturing engineering field, emphasizing the solution to manufacturing engineering problems using proper principles and practical approaches</p>		
先修科目	普通物理學		Physics		
課程大綱	背景知識、基本概念與定義 金屬鑄造加工 成型及成形過程 材料去除加工法 材料接合方法		Introductory Comments, Basic Concepts and Definitions Metal-Casting Processes Forming and Shaping Processes Material-Removal Processes Material-joining Processes		
指定用書	機械製造 精簡版 王海、林秀賢 等譯		Manufacturing Engineering and Technology, Brief Version		

	全華圖書	Serope Kalpakjian Steven Schmid	
參考書籍	機械製造程序 原著：Amstead, Ostwald and Begeman 毛迪等譯 科技圖書		
教學方式	講解、研討、作業、測驗	Instruction, Discussion, Homework, Quiz	
教學進度	1-2	Ch.1 金屬鑄造的基本原理 Ch.2 金屬鑄造法	Ch.1 Fundamentals of Metal Casting Ch.2 Metal-Casting Processes
	3-5	Ch.4 金屬的軋軋 Ch.5 金屬的鍛造 第一次小考	Ch.4 Rolling Ch.5 Forging Quiz #1
	6-7	Ch.6 金屬的擠製和抽拉 Ch.7 板金成形製程	Ch.6 Extrusion and Drawing Ch.7 Sheet-Metal Forming
	8	Ch.8 金屬粉末的製程	Ch.8 Powder Metallurgy)
	9	期中考	Midterm Exam.
	10-11	Ch.10 機械加工基本原理 Ch.11 切削刀具材料與切削液	Ch.10 Fundamentals of cutting Ch.11 Cutting-Tool Materials and Cutting Fluids
	12-13	Ch.15 先進加工製成 Ch.16 熔解焊接法	Ch.15 Nontraditional Machining Processes Ch.16 Fusion Welding Processes
	14-15	第二次小考 Ch.17 固態焊接方法	Quiz#2 Ch.17 Solid-State Welding Processes
	16-17	Ch.18 硬焊、軟焊、粘著接合與機械緊固方法 Ch.19 表面處理、塗層與清潔	Ch.18 Brazing, Soldering, Adhesive Bonding, and Mechanical Fastening Processes Ch.19 Surface Treatment, Coating, and Cleaning
	18	期末考	Final Exam.
成績評核方式	小考一.....15% 小考二.....15% 期中考.....30% 期末考.....40%	Quiz#1.....15% Quiz#2.....15% Midterm.....30% Final.....40%	
教學評量工具	評量工具說明： 由授課教師訂定。	Assessment tools description: To be determined by professor	
諮詢	教師們在課堂上自行宣佈之	Declared by professor	

時間		
----	--	--