



課 綱 Course Outline

材料科學與工程學系學士班

中文課程名稱 Course Name in Chinese	材料力學				
英文課程名稱 Course Name in English	Mechanics of Materials				
科目代碼 Course Code	MS__21710	班 別 Degree	學士班 Bachelor' s		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
使修習者能夠獲得材料力學方面的基本知識。 本課程(一)(二)之目的在提供初學者建立材料基本的力學概念，課程(一)將自靜力學簡介開始，著重在力之合成及分解，力系平衡，及斷面性質等觀念建立，進一步在課程(二)引入材料力學相關的基本定義、虎克定律、扭轉、純彎曲、應力應變轉換、樑之受力計算…等。 This course will enable the student to acquire a basic knowledge of the mechanics of materials. The purpose of this course (1) and (2) is to provide the beginner with the basic concepts of material mechanics, starting with an introduction to static mechanics, focusing on the synthesis and decomposition of forces, equilibrium of force systems, and properties of sections. In course (2), we introduce the basic definition of material mechanics, Hooke's law, torsion, pure bending, stress strain transformation, and calculation of stress on beams are further introduced.					
系教育目標 Dept.'s Education Objectives					
1	奠定理論基礎 Set the theoretical foundation				
2	訓練實用技能 Train the practical skill				
3	培養優質人格 Form the positive cher				
4	啟發創新思 Promote creative thinking				
5	開展國際視野 Develop global vision				

系專業能力 Basic Learning Outcomes		課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	具備材料科學所需的物理、化學及數學的知識。 Acquire required basic physical, chemical, and mathematic knowledge for materials science and engineering.	○
B	具備材料科學的專業知識，並能應用於解決工程上之問題。 Acquire required professional knowledge for materials science and engineering, applicable in solving engineering problems.	●
C	具備邏輯思考、實驗執行、報告撰寫與數據解釋之能力。 Equipped with capabilities of logic thinking, execution of experiment, and data interpretation.	
D	具備專業道德及責任感，與良好的溝通及團隊合作的能力。 Acquire professional morality and responsibility, and capability of quality communication and team cooperation	○
E	具備適當的英文能力，應用於學習與交流。 Acquire English capability used for learning and interaction	○
圖示說明Illustration：● 高度相關 Highly correlated ○ 中度相關 Moderately correlated		
課程大綱 Course Outline		
General Principles力學原理 Force Vectors力向量 Force System Resultants Equilibrium of a Rigid Body剛體平衡 Structural Analysis 結構分析 Geometric Properties and Distributed Loadings幾何性質及分佈載重 Internal Loadings內部載		
資源需求評估（師資專長之聘任、儀器設備的配合．．．等） Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)		
1. 具固體力學專長之師資。 2. 投影機 Teachers with expertise in solid mechanics, projectors		
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods		
課堂講授為主 Classroom lectures.		
其他 Miscellaneous		