國立東華大學

課　　綱　Course Outline

材料科學與工程學系一般組

中文課程名稱 Course Name in Chinese	材料機械性質				
英文課程名稱 Course Name in English	Mechanical Behaviors of Materials				
科目代碼 Course Code	MS__50300	班 別 Degree	碩士班 Master’s		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標 Course Objectives
This course equips students with a comprehensive understanding of the mechanical properties of materials, preparing them for future careers and research.

系教育目標 Dept.’s Education Objectives	
1	建立專業知識基礎 Set the professional knowledge foundation
2	培養專業實驗技能 Train the professional experimental skill
3	養成獨立研究能力 Insure capability of independent research
4	養成優質社會人格 Form the positive social character
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進階物理、化學及數學的知識。 Acquire required advanced physical, chemical, and mathematic knowledge for materials science and engineering.	○
B	具備材料科學的進階專業知識，並能應用於解決工程上之問題。 Acquire required advanced professional knowledge for materials science and engineering, applicable in solving engineering problems	●

C	具備獨立研究之能力。 Equipped with capabilities of independent research.	
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	具備進階的英文能力，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
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Courses in the mechanical behavior of materials are standard in both mechanical engineering and materials science/engineering curricula. These courses are taught, usually, at the junior or senior level. This course provides an introductory treatment of the mechanical behavior of materials with a balanced mechanics--materials approach, which makes it suitable for both mechanical and materials engineering students. It covers metals, polymers, ceramics, and composites and contains more than sufficient information for a one-semester course. It therefore enables the instructor to choose the path most appropriate to the class level (junior- or senior-level undergraduate) and background (mechanical or materials engineering).

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.)

Teachers with expertise in the courses offered; computers for data organization, copy machines, projectors.

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

Lecture/Group Discussion

其他
Miscellaneous