國立東華大學

課　　綱　Course Outline

材料科學與工程學系國際組

中文課程名稱 Course Name in Chinese	奈米材料科技				
英文課程名稱 Course Name in English	Nanometer-Scale Materials Science and Engineeing				
科目代碼 Course Code	MS__M0120	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

students can have an in-depth understanding of nanostructured materials and nanotechnology to facilitate their research work.

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

1. Nanomaterials and nanotechnology
2. Physics and chemistry of nanomaterials
3. Structure and properties of nanomaterials
4. Preparation and synthesis of nanomaterials
5. Analysis and detection of nanomaterials
6. Development and application of nanomaterials related to various fields (photocatalysts, carbon materials, solar cells...)

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.)

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

其他
Miscellaneous