國立東華大學

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	物理冶金（一）				
英文課程名稱 Course Name in English	Physical Metallurgy （I）				
科目代碼 Course Code	MS__21000	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	無				

課程目標
Course Objectives

讓學生在修習此一課程後，能對物理冶金的基本理論有全面的了解，以利材料科學知識的建立。
This course will enable students to gain a comprehensive understanding of the basic theories of physical metallurgy for the building of knowledge in materials science.

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

物理冶金（一）主要是介紹金屬之結構、晶體缺陷、退火、固溶現象、析出強化、擴散、相圖
Physical metallurgy (I) is mainly to introduce the structure of metals, crystalline defects, annealing, solid solution phenomena, precipitation strengthening, diffusion, phase diagram.

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.)

以具有所開課程專長之教師擔任授課；資料整理所需之電腦、影印機；討論所需之投影機、幻燈機等教學設備。
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

以指定教材按預訂進度進行教學。教學以講授及討論為主，必要時以相關文獻資料加以補充。
The course will be taught according to the scheduled of the assigned materials. Teaching is based on lectures and discussions, supplemented by relevant literature when necessary.

其他
Miscellaneous