

 **國立東華大學**
教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	鋼鐵冶煉學			學年/學期 Academic Year/Semester	114/1
課程名稱(英文) Course Name in English	Steel metallurgy				
科目代碼 Course Code	MS_56090	系級 Department & Year	碩士	開課單位 Course-Offering Department	材料科學與工程學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/紀渥德				
先修課程 Prerequisite					
課程描述 Course Description					
The class will give a basic knowledge about metallurgy of steel and non-ferrous metals. The class will help students who would like to work in steelmaking company.					
課程目標 Course Objectives					
希望藉由冶金實例，培養學生對冶金熱力學之演算能力，並藉由互動課程設計，增加學生之參與及對課程的理解。					
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					
授課進度表 Teaching Schedule & Content					
週次Week	內容 Subject/Topics				備註Remarks
1	Introduction				
2	Metals and alloys				
3	Fire proof materials and metallurgical fuels				
4	Pig iron				
5	Pig iron				
6	Steel metallurgy				

7	Steel metallurgy	
8	Steel metallurgy	
9	期中考試週 Midterm Exam	
10	Grey steel	
11	Grey steel	
12	Non-ferrous metallurgy - Al	
13	Non-ferrous metallurgy - Pb	
14	Non-ferrous metallurgy - Zn	
15	Non-ferrous metallurgy - Cu	
16	Powder metallurgy	
17	Metals working	
18	期末考試週 Final Exam	

教學策略 Teaching Strategies

- ☒ 課堂講授 Lecture
 ☐ 分組討論 Group Discussion
 ☐ 參觀實習 Field Trip
☐ 其他 Miscellaneous:

教學創新自評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

- ☐ 問題導向學習(PBL)
 ☒ 團體合作學習(TBL)
 ☒ 解決導向學習(SBL)
☐ 翻轉教室 Flipped Classroom
 ☐ 磨課師 Moocs

社會責任(Social Responsibility)

- ☐ 在地實踐 Community Practice
 ☐ 產學合作 Industry-Academia Cooperation

跨域合作(Transdisciplinary Projects)

- ☐ 跨界教學 Transdisciplinary Teaching
 ☐ 跨院系教學 Inter-collegiate Teaching
☐ 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments									
配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績(含出缺席) General Performance (Attendance Record)	15%								
期中考成績 Midterm Exam	20%								
期末考成績 Final Exam	25%								
作業成績 Homework and/or Assignments	15%								
其他 Miscellaneous (presentations)	25%								
評量方式補充說明 Grading & Assessments Supplemental instructions									
教科書與參考書目(書名、作者、書局、代理商、說明) Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)									
課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址) Teaching Aids & Teacher's Website(Including online teaching information. Personal website can be listed here.) The course material will be uploaded.									
其他補充說明 (Supplemental instructions)									