

碩士學分班第 24 期(106 學年度第一學期)課程大綱表

上課時間/地點	課程名稱	授課教師	課程大綱	學分數
106/9/18~107/1/19 每週一 18:20~21:00	固態熱力學	呂福興老師	01. Syllabus (Class begins) 02. Introduction- heat and work 03. Laws of thermodynamics 04. Laws of thermodynamics 05. Laws of thermodynamics 06. Property relations 07. Property relations 08. Equilibria-phase transition 09. Prelim 10. Equilibria-chemical reactions 11. Equilibria-solid solutions 12. Equilibria-surface/interface 13. Statistical thermodynamics 14. Statistical thermodynamics 15. Equilibrium defects 16. Equilibrium defects 17. Final remark and summary 18. Final exam	3 學分 (54 小時)
106/9/18~107/1/19 每週二 18:20~21:00	金屬材料與製程	宋振銘老師	01.課程介紹 02.序論 03.金屬材料總論 / 報告 04.鐵和鋼 05.鋼的熱處理 06.碳鋼	3 學分 (54 小時)

			<ul style="list-style-type: none"> 07.合金鋼 08.工具鋼 09.期中考 10.鑄鐵,鑄鐵的熱處理 11.鑄鐵的種類 12.鋼的表面硬化 13.滲碳與滲氮 14.非鐵金屬材料 15.其他金屬合金 16.複合材料 17.機械工業用主要複合材料 18.期末考 	
<p>106/9/18~107/1/19</p> <p style="color: red;">每週三</p> <p>18:20~21:00</p>	<p>奈米材料性能 檢測</p>	<p>林克偉老師</p>	<ul style="list-style-type: none"> 01. Introduction 02. Optical methods 03. Interferometry 04. Ellipsometry 05. Mechanical techniques 06. Scanning electron microscopy 07. Transmission electron microscopy 08. X-ray Diffraction 09. Scanning probe microscopy 10. Midterm exam 11. Auger electron spectroscopy 12. X-ray photoelectron spectroscopy I 13. X-ray photoelectron spectroscopy II 	<p style="color: blue;">3 學分</p> <p>(54 小時)</p>

			<p>14. Rutherford backscattering</p> <p>15. Secondary-ion mass spectroscopy</p> <p>16. X-ray energy dispersive analysis</p> <p>17. Final presentation I</p> <p>18. Final presentation II</p>	
<p>106/9/18~107/1/19</p> <p>每週四</p> <p>18:20~21:00</p>	<p>高等物理冶金</p>	<p>劉恒睿老師</p>	<p>01. Crystal Structures</p> <p>02. Introduction to Dislocations</p> <p>03. Dislocations and Plastic Deformation</p> <p>04. Grain Boundaries</p> <p>05. Vacancies</p> <p>06. Annealing Homework</p> <p>07. Solid Solutions</p> <p>08. Phases</p> <p>09. Midterm Examination</p> <p>10. Binary Phase Diagrams</p> <p>11. Substitutional Diffusion</p> <p>12. Interstitial Diffusion</p> <p>13. Solidification of Metals</p> <p>14. Nucleation and Growth Kinetics</p> <p>15. Precipitation Hardening</p> <p>16. Deformation Twinning</p> <p>17. Martensite Reactions</p> <p>18. Final Examination</p>	<p>3 學分</p> <p>(54 小時)</p>