

明志科技大學四技部 109學年度入學 材料工程系 課程總表

109/09/01校課程會議審議通過
109/08/24院課程委員會審議通過
系課程會議審議通過

| 學分 | 科目名稱 | 第一學期 | | 第二學期 | | 第三學期 | | 第四學期 | | 第五學期 | | 備註 | | | | |
|---|---|-------------------------------|-----|------|-----|------|----|------|----|------|-------------------|-------------------|-------------------|----|----|---|
| | | 學分 | 節數 | 學分 | 節數 | 學分 | 節數 | 學分 | 節數 | 學分 | 節數 | | | | | |
| 共同必修 | 經典教育與社會實踐(Classical Education and Social Practice) | 1 | 1 | | | | | | | | | | | | | |
| | 文學鑑賞與情感表達(Appreciation of Literature and Emotional Expression) | 2 | 2 | | | | | | | | | | | | | |
| | 藝文通識與社會參與(Art Literacy and Social Participation) | | | 2 | 2 | | | | | | | | | | | |
| | 英文(English) | 3 | 3 | 3 | 3 | | | | | | | | | | | |
| | 體育(Physical Education) | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | | | | | | | |
| | 全民國防教育軍事訓練一(All-out Defense Education Military Training 1) | 0 | 2 | | | | | | | | | | | | | |
| | 全民國防教育軍事訓練二(All-out Defense Education Military Training 2) | | | 0 | 2 | | | | | | | | | | | |
| | 英語聽講(Aural-Oral English) | | | | | 1 | 2 | 1 | 2 | | | | | | | |
| | 英文實務(一)「二」(Practical English I, Practical English II) | | | | | 0 | 2 | 0 | 2 | | | | | | | |
| | 英文實務(三)「四」(Practical English III, Practical English IV) | | | | | | | | | 0 | 2 | 0 | 2 | | | |
| 合計 | 7 | 10 | 6 | 9 | 2 | 6 | 2 | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |
| 核心課程 | 大學之道(The Goal of University Education) | 1 | 2 | | | | | | | | | | | | | |
| | 設計思考(Design Thinking) | | | 1 | 1 | | | | | | | | | | | |
| 校內必修 | 勤勞教育(Labor Education) | 0 | 0.5 | 0 | 0.5 | | | | | | | | | | | |
| | 合計 | 1 | 2.5 | 1 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 專業必修 | 實習前職場素養訓練(Professionalism Prior to Practical Training) | | | | | | | | | 1 | 1 | | | | | |
| | 上讀自學英文(Self-Study English During Vocational Practice) | | | | | | | | | 1 | 2 | | | | | |
| | 上讀實務實習一(Practical Training Curriculum (1)) | | | | | | | | | 4 | | | | | | |
| | 上讀實務實習二(Practical Training Curriculum (2)) | | | | | | | | | 4 | | | | | | |
| | 上讀實務實習三(Practical Training Curriculum (3)) | | | | | | | | | 4 | | | | | | |
| | 上讀實務實習四(Practical Training Curriculum (4)) | | | | | | | | | 4 | | | | | | |
| | 合計 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 10 | 0 | 0 | 0 | 0 |
| | 專業必修 | 普通化學(General Chemistry) | 3 | 3 | 3 | 3 | | | | | | | 基礎領域 | | | |
| | | 普通化學實驗(General Chemistry Lab) | 1 | 3 | | | | | | | | | 基礎領域 | | | |
| | | 微積分(Calculus) | 3 | 3 | 3 | 3 | | | | | | | 基礎領域 | | | |
| 普通物理(General Physics) | | 3 | 3 | 3 | 3 | | | | | | | 基礎領域 | | | | |
| 普通物理實驗(General Physics Lab) | | 1 | 3 | 1 | 3 | | | | | | | 基礎領域 | | | | |
| 材料科學導論(Introduction to Materials Science) | | 3 | 3 | 3 | 3 | | | | | | | 基礎領域 | | | | |
| 材料熱力學(Thermodynamics of Materials) | | | | | | 3 | 3 | 3 | 3 | | | 基礎領域 | | | | |
| 工程數學(Engineering Mathematics) | | | | | | 3 | 3 | 3 | 3 | | | 基礎領域 | | | | |
| 物理冶金(Physical Metallurgy) | | | | | | 3 | 3 | 3 | 3 | | | 基礎領域 | | | | |
| 基礎材料實驗(Fundamental Experiments in Materials Science) | | | | | | | | 1 | 3 | | | 材料分析領域 | | | | |
| 材料機械性質(Mechanical Properties of Materials) | | | | | | | | | 3 | 3 | 基礎領域 | | | | | |
| 材料物理性質(Physical Properties of Materials) | | | | | | | | | 3 | 3 | 基礎領域 | | | | | |
| 「X光繞射導論」(Introduction to X-ray Diffraction) | | | | | | | | | 3 | 3 | 材料分析領域 該學分學程必修 | | | | | |
| 工程倫理與實務講座 (Discussion on Engineering Ethics and Professional Practice) | | | | | | | | | | 1 | 3 | 基礎領域 | | | | |
| 材料專題(Capstone Project) | | | | | | | | | 1 | 2 | 1 | 2 | 材料別論 | | | |
| 合計 | 14 | 18 | 13 | 15 | 9 | 9 | 10 | 12 | 10 | 11 | 0 | 0 | 2 | 5 | 1 | 2 |
| 專業必修 | 歷史思想(Historical Thinking) | | | | | | | | | | | 3 | | | | |
| | 憲政與法治(Constitutionalism: Rule of Law) | | | | | | | | | | | 3 | | | | |
| 專業必修 | 廣石專題(Capstone project) | | | | | | | | | | | 1 | 3 | | | |
| | 合計 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 |
| 專業必修 | 數理基礎先修課程(Pre-math & science) | 1 | 3 | | | | | | | | | 基礎領域 | | | | |
| | 材料製程概論(Introduction to Materials and Manufacturing) | | | 3 | 3 | | | | | | | 材料製程 | | | | |
| | 計算機應用實務(Computer Science and Practical Applications in Materials Engineering) | | | 3 | 3 | | | | | | | 基礎領域 | | | | |
| | 普通化學實驗(General Chemistry Lab) | | | 1 | 3 | | | | | | | 基礎領域 | | | | |
| | 材料分析概論(Introduction to Material Analysis) | | | | | 3 | 3 | | | | | 材料分析領域 該學分學程選修 | | | | |
| | 高分子材料(Polymeric Materials) | | | | | 3 | 3 | | | | | 材料別論 該學分學程選修 | | | | |
| | 電磁學在(Electromagnetism) | | | | | 3 | 3 | | | | | 基礎領域 | | | | |
| | Python機器學習(Python Machine Learning) | | | | | 3 | 3 | | | | | 材料別論 該學分學程選修 | | | | |
| | 光電材料製程實務(Practice of Optoelectronic Materials) | | | | | 3 | 3 | | | | | 材料製程 | | | | |
| | 生醫材料製程實務(Practice of Biomedical Materials) | | | | | 3 | 3 | | | | | 材料製程 | | | | |
| 真空技術與實務(Vacuum Technology and Practice) | | | | | 3 | 3 | | | | | 材料別論 該學分學程選修 | | | | | |
| 材料力學(Mechanics of Materials) | | | | | | | 3 | 3 | | | 基礎領域 該學分學程選修 | | | | | |
| 能源材料製程實務(Practice of Energy Materials) | | | | | | | 3 | 3 | | | 材料製程 | | | | | |
| 防護材料製程實務(Practice of Protective Film Materials) | | | | | | | 3 | 3 | | | 材料製程 | | | | | |
| 電子材料(Electronic Materials) | | | | | | | 3 | 3 | | | 材料別論 | | | | | |
| 金屬材料(Metallic Materials) | | | | | | | 3 | 3 | | | 材料別論 該學分學程選修 | | | | | |
| 陶瓷材料(Ceramic Materials) | | | | | | | 3 | 3 | | | 材料別論 該學分學程選修 | | | | | |
| 近代物理(Modern Physics) | | | | | | | | | 3 | 3 | 基礎領域 該學分學程必修 | | | | | |
| 相變化(Phase Transformations) | | | | | | | | | 3 | 3 | 基礎領域 該學分學程必修 | | | | | |
| 材料化學性質(Chemical Properties of Materials) | | | | | | | | | 3 | 3 | 基礎領域 | | | | | |
| 電化學方法與應用實務(Electrochemical Methods and Practical Applications) | | | | | | | | | 3 | 3 | 材料製程 該學分學程選修 | | | | | |
| 材料表面工程(Surface Engineering of Materials) | | | | | | | | | 3 | 3 | 材料製程 | | | | | |
| 半導體製程(Semiconductor Processing) | | | | | | | | | 3 | 3 | 材料製程 | | | | | |
| 材料選擇與設計(Material Selection and Design) | | | | | | | | | 3 | 3 | 材料別論 該學分學程選修 | | | | | |
| 奈米製程與材料(Nano-Fabrication and Materials) | | | | | | | | | | 3 | 3 | 材料製程 | | | | |
| 奈米科技概論(Introduction to Nanotechnology) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 生醫材料(Biomedical Materials) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 薄膜製程(Thin Film Processing) | | | | | | | | | | 3 | 3 | 材料製程 | | | | |
| 薄膜製程實驗(Experiments on Thin Film Processing) | | | | | | | | | | 1 | 3 | 材料製程 | | | | |
| 電漿製程(Plasma Processing) | | | | | | | | | | 3 | 3 | 材料製程 | | | | |
| 電漿製程實驗(Experiments on Plasma Processing) | | | | | | | | | | 1 | 3 | 材料製程 | | | | |
| 光電薄膜混成製程(Optoelectronic Hybrid Thin Films Processing) | | | | | | | | | | 3 | 3 | 材料製程 | | | | |
| 固態物理導論(Introduction to Solid State Physics) | | | | | | | | | | 3 | 3 | 基礎領域 該學分學程選修 | | | | |
| 電子顯微鏡分析(Electron Microscope Analysis) | | | | | | | | | | 3 | 3 | 材料分析領域 該學分學程選修 | | | | |
| 奈米檢測分析(Nano-Characterization) | | | | | | | | | | 3 | 3 | 材料分析領域 該學分學程選修 | | | | |
| 鋼鐵製程與處理(Making and Treatment of Iron and Steel) | | | | | | | | | | 3 | 3 | 材料製程 該學分學程選修 | | | | |
| 材料破壞與分析(Failure Analysis of Engineering Materials) | | | | | | | | | | | 3 | 3 | 材料分析領域 該學分學程選修 | | | |
| 奈米檢測分析實驗(Experiments on Nano-Characterization) | | | | | | | | | | 1 | 3 | 材料分析領域 | | | | |
| 光電薄膜混成製程實驗(Experiments on Optoelectronic Hybrid Thin Films Processing) | | | | | | | | | | 1 | 3 | 材料製程 | | | | |
| 光電半導體材料(Optoelectronics & Semiconductor Materials) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 再生能源材料(Materials for Renewable Energy Generation) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 儲能材料實務(Materials for Energy Storage and Practical Applications) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 奈米材料特論(Carbon Nano-Materials) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 腐蝕與防蝕(Corrosion and Corrosion Control) | | | | | | | | | | 3 | 3 | 基礎領域 | | | | |
| 生醫應用實務(Biomedical Materials and Practical Applications) | | | | | | | | | | 3 | 3 | 材料別論 該學分學程選修 | | | | |
| 非鐵合金製程與處理(Processing and Treatment of Non-ferrous Alloys) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 高分子物理性質(Polymer Physics and Chemistry) | | | | | | | | | | 3 | 3 | 材料別論 | | | | |
| 合計 | 1 | 3 | 7 | 9 | 21 | 21 | 18 | 18 | 21 | 6 | 6 | 20 | 30 | 29 | 33 | |

1 修畢第二專長學分學程者，最低畢業學分結構調整為共同必修 39 學分，共同選修 3 學分，通識選修至少 8 學分(五類型，任選四類各 2 學分)，專業必修 39 學分，專業選修 39 學分，合計 148 學分；已修畢第二專長學分學程外學分，採計為系專業選修學分。
 2 修畢跨領域學分學程者，最低畢業學分結構調整為共同必修 39 學分，共同選修 3 學分，通識選修至少 8 學分(五類型，任選四類各 2 學分)，專業必修 39 學分，專業選修 39 學分，合計 148 學分；已修畢之跨領域學分學程外學分，採計為系專業選修學分。
 3 中心申請環境資源學院實務菁英班者，須符合菁英班各項畢業學分要求且修畢菁英班之化工或材料或環安衛專業選修至少 30 學分。
 4 本系大一至大三，未通過本系基礎數理測驗者，必須修習數理先修課程，環境學院實務菁英班除外。
 5 任何微積分課程必須至少修過一，(需取得學分，環境學院實務菁英班除外)。
 6 光電材料製程實務、生醫材料製程實務、能源材料製程實務、防護材料製程實務，必須至少四選二。(需取得學分，環境學院實務菁英班除外)。
 7 「金屬材料」、「陶瓷材料」、「高分子材料」、「材料分析概論」、「X光繞射導論」等課程列為系上必修選修課程，五選三。(其中「材料分析概論」、「X光繞射導論」至少選一門，環境學院實務菁英班除外)。
 8 「上讀實務實習(一)」「(四)」及「上讀自學英文」為三下必修，另外可選修進修學程。
 9 每學期選課上限為 27 學分，一至二年級不得少於 16 學分，三至四年級不得少於 9 學分。
 10 上課時間每週以 4 節為限，以 4 節為限。
 11 取得本系系務儀器證 4 張(或 4 張以上)始得畢業，請參照「材料工程系專業能力畢業門覽及輔導要點」。
 12 已修畢之系專業學分學程院必修學分(科技英文除外)，採計為系專業選修學分。