

系統工程與科技學士學位學程

Bachelor Degree Program of System Engineering and Technology

111學年度 (Academic Year 2022)111.11修訂

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|--|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|---------------------|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 國文(含孫子兵法) Chinese | 6 | 3 | 3 | | | | | | | |
| 中華民國憲法與立國精神 The Constitution and Founding Spirit of the ROC | 3 | | | 3 | | | | | | |
| 法學概論(含國際法概論) Introduction to Law | 2 | | 2 | | | | | | | |
| 中國現代史(含國軍建軍史) Chinese Modern History | 3 | | | 3 | | | | | | |
| 大陸問題研究 Studies on Mainland China | 3 | | | | 3 | | | | | |
| 心理學 Psychology | 2 | | | | | 2 | | | | |
| 哲學概論 Introduction to Philosophy | 2 | | | | | 2 | | | | |
| 軍事倫理學 Military Ethics | 2 | | | | | | 2 | | | |
| 通識必修學分小計 | 23 | | | | | | | | | |
| 「文史領域」、「社會領域」、「管理領域」、「自然領域」、「國防領域」等五大領域共修習 10 學分。 | 10 | | | | | | | | | |
| 通識選修學分小計 | 10 | | | | | | | | | |
| 資訊科學概論 Introduction to Information Science | 2 | 2 | | | | | | | | |
| 微積分 Calculus | 8 | 4 | 4 | | | | | | | 原為8小時6學分，調整為8小時8學分。 |
| 普通化學 General Chemistry | 3 | 3 | | | | | | | | |
| 普通化學實驗 General Chemistry Laboratory | 2 | | 2 | | | | | | | 原為2小時1學分，調整為2小時2學分。 |
| 普通物理 General Physics | 6 | 3 | 3 | | | | | | | |
| 普通物理實驗 General Physics Laboratory | 4 | 2 | 2 | | | | | | | 原為4小時2學分，調整為4小時4學分。 |

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| 基礎科學講座與實驗 Seminar and Lab | 0 | 0 | | | | | | | | 3 小時週 六上課 (上課時間視 情況調整) |
| 基礎科學必修學分小計 | 25 | | | | | | | | | |
| 英文 English | 6 | 3 | 3 | | | | | | | |
| 「語文領域」選修一門課 | 2 | | | | | | | | | |
| 外國語言領域學分小計 | 8 | | | | | | | | | |
| 服務學習 Service Learning | 0 | | 0 | 0 | | | | | | 各 1 小時 |
| 導師輔導(1)~(7) Tutor Guidance | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 每學期每週 各 2 小時 |
| 體育 (1)~(7) Physical Education | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 每學期每週 各 2 小時 |
| 其它必修課程學分小計 | 0 | | | | | | | | | |
| 學程共同必修學分總計 | 66學分 | | | | | | | | | |
| 其它專業課程學分總計 (依P6-P40各組規定辦理) | 62學分 | | | | | | | | | |
| 學程最低畢業學分 | 128 學分 | | | | | | | | | |

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| 英文鑑測條件 | <p>1.基礎學院大學部學生於修畢英文必修 6 學分(6 小時)後，未持有下列任一項英文鑑測合格之成績證明者，必須加修「中級英文」(Intermediate English)。英文鑑測標準如下：</p> <p>(1)「全民英檢」中級複試及格(含)以上。</p> <p>(2)「多益測驗」650 分(含)以上。</p> <p>(3)「網路化托福(IBT)」61 分(含)以上。</p> <p>(4)「雅思」5 分(含)以上。</p> <p>2.出示英文鑑測成績，申請免修基礎英文於每學期第 17 週週五前截止。</p> <p>3.學生於第四學期結束後，未通過任一項英文鑑測標準門檻者，自第五、六學期必須加修「中級英文(一)」2 學分、「中級英文(二)」2 學分。加修期間，若通過英文鑑測標準者，得於次一學期免修。惟加修學分不得列入最低畢業 128 學分內。</p> |
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系統工程與科技學士學位學程-學程共同選修

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|---|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|------------|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 微積分輔導 Calculus Tutor | 0 | 0 | 0 | | | | | | | 各 3 小時 |
| 普通物理輔導 General Physics Tutor | 0 | 0 | 0 | | | | | | | 各 3 小時 |
| 普通化學輔導 General Chemistry Tutor | 0 | 0 | | | | | | | | 3 小時 |
| 程式語言輔導 Programming Language Tutor | 0 | | 0 | | | | | | | 3 小時 |
| 程式語言概論 Int. to Programming Languages | 1 | | 1 | | | | | | | |
| 工程倫理 | 2 | | | | | | | 2 | | |

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| Ethics in Engineering | | | | | | | | | | |
| 學程共同選修課程學分小計 | 3 | | | | | | | | | |

系統工程與科技學士學位學程-選修實習課程

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|---|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|------------|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 領導統御 Leadership | 3 | | | | | | | | 3 | |
| 領導統御實作 Leadership Practice | 3 | | | | | | | | 3 | |
| 專業實習 Professional Internship Program | 3 | | | | | | | | 3 | |
| 選修實習課程學分小計 | 9 | | | | | | | | | |

通識選修-語文領域(須至少選修1門課程)

General Knowledge Elective – Field of Language

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|--------------------------------------|--------------|-----------------------------------|--------------|-----------------------------|--------------|
| 實用英文 Practical English | 2 | 翻譯與文化 Translation and Cultural | 2 | 英文寫作 English Composition | 2 |
| 基礎軍事英文 Basic Military English | 2 | 通俗英文 English in Pop Culture | 2 | 日文一~四 Japanese | 2 |
| 英語聽講練習 English Listening Practice | 2 | 英文聽力 English Listening | 2 | 法文一~四 French | 2 |
| 新聞英文 Journalistic English | 2 | 英文會話 English Conversation | 2 | 德文一~四 German | 2 |
| 財經英文 Financial English | 2 | 英文閱讀 English Reading | 2 | 西班牙文一~四 Spanish | 2 |

通識選修-文史領域

General Knowledge Elective – Field of History

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|--|--------------|---|--------------|---|--------------|
| 台灣古蹟與文物 Monuments and Historical Relics in Taiwan | 2 | 應用文 Practical Text | 2 | 邏輯與創意思考 Logic and Creative Thinking | 2 |
| 大陸古蹟與文物 Monuments and Historical Relics in Mainland China | 2 | 法律與文學 Law and Literature | 2 | 哲學經典導讀 Introduction to Classical Philosophy Clsaaics | 2 |
| 小說與電影 Fiction and Film | 2 | 音樂與人生 Music and Life | 2 | 哲學諮商 Philosophical Counseling | 2 |
| 美學與人生 Aesthetics and Life | 2 | 西洋影劇名著 Western Entertainment Masterpiece | 2 | 老莊哲學 Philosophy of Laozi and Zhuangzi | 2 |

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|--|---|---|---|--|---|
| 戲劇與人生 Drama and Life | 2 | 哲學與人生 Philosophy and Life | 2 | 文學鑑賞 Appreciation of Literature | 2 |
| 小說寫作 Novel Writing | 2 | 古典詩詞賞析 Classical Poetry | 2 | 傳記文學賞析 Biographical Literature | 2 |
| 拉丁美洲史 Latin American History | 2 | 英美文學導讀 Introduction of British and American Literature | 2 | 台灣史 History of Taiwan | 2 |
| 人文精神中的性別議題 Gender Issues in the Humanistic Spirit | 2 | 歷史思維與創意思考 Historical and Creative Thinking | 2 | 明清小說 Readings In Ming and Ching Fiction | 2 |
| 現代文學 Modern Literature | 2 | 台灣發展經驗 The Developmental Experience of Taiwan | 2 | 科幻文學賞析 Analysis and Appreciation of the Science Fiction | 2 |
| 英美短篇小說選讀 British and American short Stories | 2 | 世界文明概論 Introduction of World Civilizations | 2 | | |

通識選修-社會領域

General Knowledge Elective – Field of Society

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|--|--------------|---|--------------|--|--------------|
| 國際關係 International Relations | 2 | 性別教育 Gender Education | 2 | 人群關係 Human Relations | 2 |
| 美國研究 American Studies | 2 | 生死學 The Study of Death | 2 | 團體活動 Group Activities | 2 |
| 人際關係與溝通 Interpersonal and Communication | 2 | 心靈開發與自我成長 Spiritual Development and Self-Growth | 2 | 當代政治思潮 Modern Politics Thought | 2 |
| 歷史與領導 History and Leadership | 2 | 心理適應與社會影響 Personal Adjustment and Social Influence | 2 | 生命教育 Life Education | 2 |
| 壓力管理與生涯規劃 Pressure Management and Career Planning | 2 | 創意思考 Creative Thinking | 2 | 自我探索與人際關係 Self-exploration and Interpersonal Relationship | 2 |
| 婚姻與家庭 Marriage and Family | 2 | 創造力訓練 Training of Creative Ability | 2 | 壓力調適與情緒管理 Stress Management and Crisis Intervention | 2 |

通識選修-管理領域

General Knowledge Elective – Field of Management

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|------------------------------|--------------|----------------------------|--------------|--|--------------|
| 財務管理 Financial Management | 2 | 專案管理 Project Management | 2 | 生活中的統計學 Statistics in Life | 2 |
| 危機管理 Crisis Management | 2 | 品質管理 Quality Management | 2 | 組織理論管理 Organizational Theory and Management | 2 |
| 談判技術 | 2 | 管理學概論 | 2 | 組織行為 | 2 |

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|-----------------------------|---|--|---|------------------------------|---|
| Skill of Negotiations | | Introduction to Management | | Organizational Behavior | |
| 生涯規劃 DIY Career Planning | 2 | 資訊科技與社會 Information Technology and Society | 2 | 領導學 The Art of Leadership | 2 |
| 禪式管理 Zen's Management | 2 | 資訊素養與倫理 Information Literacy and Ethics | 2 | | |

通識選修-自然領域
General Knowledge Elective – Field of Nature

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|--|--------------|--|--------------|---|--------------|
| 生命科學與生命教育 Life Sciences and Education | 2 | 自然科學概論 Introduction of Natural Science | 2 | 科技與未來生活 Technology and the Future Life | 2 |
| 運動科學概論 Introduction to Kinematics | 2 | 地球科學概論 Introduction of Earth Science | 2 | 生物能場概論 Introduction of Bio-energy field | 2 |
| 體適能與健康 Fitness and Health | 2 | 生態學導論 Introduction of Ecology | 2 | 環境保護 Environmental Protection | 2 |
| 生命科學概論 Introduction of Life Science | 2 | 生物科技概論 Introduction of Biotechnology | 2 | 腦波與意識 Brainwave and Consciousness | 2 |

通識選修-國防領域
General Knowledge Elective – Field of National Defense

| 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit | 科目名稱 Course Name | 學分 Credit |
|---------------------------------------|--------------|--------------------------------------|--------------|--|--------------|
| 近代戰爭史 History of Modern War | 2 | 世界戰爭史 History of World War | 2 | 國際軍事議題導讀 Introduction to International military Issues | 2 |
| 孫子兵法與人生 The Art of War and Life | 2 | 戰爭與社會變遷 War and Social Change | 2 | 全民國防概論 Introduction to All-out National Defense | 2 |
| 中國兵書選讀 Chinese Military Literature | 2 | 軍事思想史 History of Military Thought | 2 | 軍事教育與生涯發展 Military Education and Career Counseling | 2 |
| 戰爭與文學 War and Literature | 2 | 國防產業發展 Defense Industry | 2 | 防災科學 Disaster Prevention Science | 2 |

資訊工程組必修科目表

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|--|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|--|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 程式設計 Programming Design | 3 | | 3 | | | | | | | 資訊工程組 必修 |
| 物件導向程式設計 Object Oriented Programming | 3 | | | 3 | | | | | | |
| 離散數學 Discrete Mathematics | 3 | | | 3 | | | | | | |
| 資料結構 Data Structure | 3 | | | 3 | | | | | | |
| 數位電路設計 Digital Circuit Design | 3 | | | 3 | | | | | | |
| 網路技術與實務(1) Network Technology and Practice(1) | 3 | | | 3 | | | | | | |
| 計算機網路 Computer Networks | 3 | | | | 3 | | | | | |
| 計算機組織 Computer Organization | 3 | | | | 3 | | | | | |
| 線性代數 Linear Algebra | 3 | | | | 3 | | | | | |
| 演算法概論 Introduction to Algorithms | 3 | | | | 3 | | | | | |
| 機率與統計 Probability and Statistics | 3 | | | | | | 3 | | | |
| 作業系統概論 Introduction to Operating Systems | 3 | | | | | 3 | | | | |
| 組共同必修學分小計 | 36 | | | | | | | | | |
| 密碼學概論 Introduction to Cryptography | 3 | | | | | 3 | | | | 網路攻防族 群必修 (資訊系統族 群列為選修) |
| 網路安全 Network Security | 3 | | | | | 3 | | | | |
| 網路攻防實務 Practical Network Defense | 3 | | | | | | 3 | | | |
| 資訊安全專題實作 (Capstone 課程) Information Security Practice | 3 | | | | | 1 | 1 | 1 | | 1. 左列5項專 題實作課程 「網路攻防 組」須擇 1 項課程修 習，並依本 組專題實作 實施規定辦 理。 2. 資訊系統 |
| 網路攻防專題實作 (Capstone 課程) Networks Defense Practice | 3 | | | | | 1 | 1 | 1 | | |
| 系統安全專題實作 (Capstone 課程) System Security Practice | 3 | | | | | 1 | 1 | 1 | | |
| C4ISR 系統專題實作 (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |

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| C4ISR System Practice | | | | | | | | | | 族群得跨族群選課列為族群必修課程。 |
| 密碼工程專題實作 (Capstone 課程) Cryptography Engineering Practice | 3 | | | | | 1 | 1 | 1 | | |
| 網路攻防族群必修學分小計 | 12 | | | | | | | | | |
| 軟體工程 Software Engineering | 3 | | | | 3 | | | | | 資訊系統族群必修 (網路攻防族群列為選修) |
| 行動裝置軟體設計與實驗 Software Design and Practice for Mobile Devices | 3 | | | | 3 | | | | | |
| 資料庫系統 Database Systems | 3 | | | | | 3 | | | | |
| 智慧系統專題實作 (Capstone 課程) Intelligent Systems Practice | 3 | | | | | 1 | 1 | 1 | | 1 左列 7 項 專題實作課程「資訊系統組」須擇 1 項課程修習，並依本系專題實作實施規定辦理。 2 網路攻防族群得跨族群選課列為族群必修課程。 |
| 圖形識別系統專題實作 (Capstone 課程) Pattern Recognition Practice | 3 | | | | | 1 | 1 | 1 | | |
| 資料庫專題實作 (Capstone 課程) Database Practice | 3 | | | | | 1 | 1 | 1 | | |
| 資訊系統工程專題實作 (Capstone 課程) Information System Practice | 3 | | | | | 1 | 1 | 1 | | |
| 電腦網路專題實作 (Capstone 課程) Computer Networks Practice | 3 | | | | | 1 | 1 | 1 | | |
| 多媒體設計專題實作 (Capstone 課程) Multimedia Design Practice | 3 | | | | | 1 | 1 | 1 | | |
| 物聯網系統專題實作 (Capstone 課程) IoT System Practice | 3 | | | | | 1 | 1 | 1 | | |
| 資訊系統族群必修學分小計 | 12 | | | | | | | | | |
| C4ISR 系統概論 Introduction to C4ISR System | 3 | | | | | | | 3 | | 國防特色專業選修 須擇 1 選修 |
| 資訊戰概論 Introduction to Information Warfare | 3 | | | | | | | 3 | | |
| 基礎數論 Elementary Number Theory | 3 | | | 3 | | | | | | 資訊安全類 專業選修 |
| 資訊安全 Information Security | 3 | | | 3 | | | | | | |
| 資訊確保 Information Assurance | 3 | | | | | 3 | | | | |
| 軟體安全 Software Security | 3 | | | | | 3 | | | | |

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| 網路安全防護 Computer Network Defense | 3 | | | | | 3 | | | |
| 資訊作戰 Information Operation | 3 | | | | | 3 | | | |
| 組合語言與逆向工程 Assembly Language and Reversed Engineering | 3 | | | | | 3 | | | |
| 多媒體安全 Multimedia Security | 3 | | | | | 3 | | | |
| 電腦攻擊與防禦 Attacks and Defenses in Computing | 3 | | | | | 3 | | | |
| 虛擬化技術與資安應用 Virtualization Technology and Information Security Applications | 3 | | | | | 3 | | | |
| 弱點評估 Vulnerability Assessment | 3 | | | | | | 3 | | |
| 網頁安全與滲透測試 Web Security and Penetration Testing | 3 | | | | | | 3 | | |
| 數位鑑識 Digital Forensics | 3 | | | | | | 3 | | |
| 數位內容實務與安全 Practice and Security of Digital Contents | 3 | | | | | | 3 | | |
| 軟體需求分析 Software Requirements Analysis | 3 | | | | 3 | | | | |
| 軟體架構 Software Architecture | 3 | | | | | 3 | | | |
| 軟體專案管理 Software Project Management | 3 | | | | | | 3 | | 軟體工程類 專業選修 |
| 系統工程 Systems Engineering | 3 | | | | | | 3 | | |
| 軟體測試 Software Testing | 3 | | | | | | | 3 | |
| 計算機圖學 Computer Graphics | 3 | | | | 3 | | | | |
| 作業研究 Operation Research | 3 | | | | | 3 | | | 程式模擬類 專業選修 |
| 模式模擬與兵棋 Modeling, Simulation, and Wargame | 3 | | | | | | 3 | | |
| 網路技術與實務(2) Network Technology and Practice(2) | 3 | | | | 3 | | | | |
| 資料通訊與保密 Data Communications and confidentiality | 3 | | | | | 3 | | | 網路工程類 專業選修 |
| 網路程式設計 | 3 | | | | | | 3 | | |

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| Network Programming | | | | | | | | | | |
| 無線通訊與網路 Wireless Communication and Network | 3 | | | | | | 3 | | | |
| 電信網路概論 Introduction to Telecommunication Networks | 3 | | | | | | 3 | | | |
| 網路管理 Network Management | 3 | | | | | | 3 | | | |
| 網路通訊協定模擬與設計 Simulation and Design of Network Communication Protocols | 3 | | | | | | | 3 | | |
| 行動方式計算法 Mobile Computing | 3 | | | | | | | 3 | | |
| 物聯網技術與應用 IoT Technology and Applications | 3 | | | | | | | 3 | | |
| 資料探勘 Data Mining | 3 | | | | | 3 | | | | |
| 資訊擷取與檢索 Information Extraction and Retrieval | 3 | | | | | | 3 | | | |
| 巨量資料分析 Big Data Analysis | 3 | | | | | | 3 | | | |
| 機器學習 Machine Learning | 3 | | | | | | | 3 | | 人工智慧類 專業選修 |
| 人工智慧 Artificial intelligence | 3 | | | | | | | 3 | | |
| 計算機圖學 Computer Graphics | 3 | | | | 3 | | | | | |
| 使用者介面設計 User Interface Design | 3 | | | | 3 | | | | | |
| 影像處理 Digital Image Processing | 3 | | | | | 3 | | | | |
| 虛擬實境導論 Introduction to Virtual Reality | 3 | | | | | 3 | | | | 影像處理類 專業選修 |
| 多媒體系統設計 Multimedia Information System | 3 | | | | | | 3 | | | |
| 計算機視覺 Computer Visualization | 3 | | | | | | | 3 | | |
| 視窗程式設計GUI Programming | 3 | | 3 | | | | | | | |
| 資訊系統應用實務 Information System Practice | 3 | | | | 3 | | | | | |
| 工程數學(1) Engineering Mathematics (I) | 3 | | | | 3 | | | | | 其他 專業選修 |
| 計算機數學 Computer Mathematics | 3 | | | | 3 | | | | | |
| 程式語言 | 3 | | | | 3 | | | | | |

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|--|---|--|--|--|---|---|---|---|--|
| Programming Language | | | | | | | | | |
| 系統程式 System Programming | 3 | | | | 3 | | | | |
| 電子電路 Electronic Circuits | 3 | | | | | 3 | | | |
| 工程數學(2) Engineering Mathematics (II) | 3 | | | | | 3 | | | |
| 微算機原理與實驗 Micro-Processor Theory and Experiment | 3 | | | | | | 3 | | |
| 作業系統實務 Operating System Practice | 3 | | | | | | 3 | | |
| 數值方法 Numerical Methods | 3 | | | | | | 3 | | |
| 圖形理論 Graph Theory | 3 | | | | | | 3 | | |
| 編譯器理論 Compiler Theory | 3 | | | | | | | 3 | |
| 計算機結構 Computer Architecture | 3 | | | | | | | 3 | |
| 程式設計實習(1) Programming Design Practice (I) | 3 | | | | | 3 | | | |
| 程式設計實習(2) Programming Design Practice (II) | 3 | | | | | | 3 | | |
| 備考 | <ol style="list-style-type: none"> 1. 最低畢業學分為128學分。 2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程。 3. 網路攻防族群與資訊系統族群須修畢該組(族群)必修課程，選修課可由「學程共同選修課程」、「跨族群必修課程」或「專業選修課程」中選擇，至少選修24學分，須通過其中14學分以達畢業門檻。 4. 須選修「程式語言概論」及「工程倫理」。 5. 選修課開課學期得視需要由本組調整。 6. 學生必須取得大學程式能力檢定(CPE)兩題(含)以上，或選修課程「程式設計實習(1)」及「程式設計實習(2)」之期中考與期末考考試結果，將比照CPE考試認列通過標準，以符本組畢業標準。 | | | | | | | | |

化學及材料工程組

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|--|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----------------------------------|----------------|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 質能均衡 Mass and Energy Balances | 2 | | 2 | | | | | | | 化學及材料 工程組必修 |
| 工程數學(1) Engineering Mathematics(1) | 3 | | | 3 | | | | | | |
| 有機化學(1) Organic Chemistry(1) | 3 | | | 3 | | | | | | |
| 有機化學實驗(1) Organic Chemistry Lab.(1) | 1 | | | 1 | | | | | | |
| 儀器及分析化學(1) Analytical Chemistry(1) | 3 | | | 3 | | | | | | |
| 儀器及分析化學實驗(1) Analytical Chemistry Lab.(1) | 1 | | | 1 | | | | | | |
| 材料科學導論 Introduction to Materials Science | 3 | | | 3 | | | | | | |
| 物理化學(1) Physical Chemistry(1) | 3 | | | | 3 | | | | | |
| 物理化學實驗(1) Physical Chemistry Lab. (1) | 1 | | | | 1 | | | | | |
| 單元操作與輸送現象(1) Unit Operation & Transport Phenomena(1) | 3 | | | | 3 | | | | | |
| 材料實驗 Experiments on Materials | 1 | | | | 1 | | | | | |
| 單元操作實驗(1) Unit Operation Lab.(1) | 1 | | | | | 1 | | | | |
| 物理冶金(1) Physical Metallurgy(1) | 3 | | | | | 3 | | | | |
| 火藥學(1) Explosives(1) | 3 | | | | | 3 | | | | |
| 化學反應工程 Chemical Reaction Engineering | 3 | | | | | | 3 | | | |
| 核生化防護 Nuclear, Chemical, and Biological Defense | 2 | | | | | | 2 | | | |
| 工業安全及衛生 Industrial Safety and Hygiene | 2 | | | | | | 2 | | | |
| 火藥學實驗 Explosives Lab. | 1 | | | | | | 1 | | | |
| 程序設計 Process Design | 3 | | | | | | | 3 | | |
| 火炸藥專題實作 Special Project on Explosive (capstone 課程) | 3 | | | | | 1 | 1 | 1 | 專題實作課 程擇其中1項 課程修習， 修滿3學期 | |
| 核生化防護專題實作 Special Project on Nuclear, | 3 | | | | | 1 | 1 | 1 | | |

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|--|-----------|--|--|--|---|---|---|---|--|-----------------------|
| Biological and Chemical Defense (capstone 課程) | | | | | | | | | | 始取得學分。 |
| 材料科學與工程專題實作 Special Project on Materials Science & Engineering (capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 電化學專題實作 (capstone課程) Special Project on Electrochemistry | 3 | | | | | 1 | 1 | 1 | | |
| 超臨界萃取專題實作 (capstone課程) Special Project on Supercritical Fluid Extraction | 3 | | | | | 1 | 1 | 1 | | |
| 半導體專題實作 (capstone課程) Special Project on Semiconductor | 3 | | | | | 1 | 1 | 1 | | |
| 表面處理專題實作 (capstone課程) Special Project on Surface Treatment | 3 | | | | | 1 | 1 | 1 | | |
| 創/儲能電池專題實作 (capstone課程) Special Project on Energy Conversion/ Storage Batteries | 3 | | | | | 1 | 1 | 1 | | |
| 合金設計材料專題實作 (capstone課程) Special Project on Alloy Design | 3 | | | | | 1 | 1 | 1 | | |
| 功能性鍍膜專題實作 (capstone課程) Special Project on Functional Coatings | 3 | | | | | 1 | 1 | 1 | | |
| 功能性陶瓷專題實作 (capstone課程) Special Project on Functional Ceramics | 3 | | | | | 1 | 1 | 1 | | |
| 組共同必修學分小計 | 45 | | | | | | | | | |
| 工程數學(2) Engineering Mathematics(2) | 3 | | | | 3 | | | | | 化學工程 (火炸藥) 族群必修 |
| 化工熱力學 Chemical Engineering Thermodynamics | 3 | | | | | 3 | | | | |
| 單元操作與輸送現象(2) Unit Operation & Transport Phenomena(2) | 3 | | | | | 3 | | | | |
| 火炸藥族群必修學分小計 | 9 | | | | | | | | | |

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|---|----------|--|---|--|---|---|---|--|--|-------------------------|
| 無機化學 Inorganic Chemistry | 3 | | | | 3 | | | | | 化學工程 (核生化防護) 族群必修 |
| 物理化學(2) Physical Chemistry(2) | 3 | | | | | 3 | | | | |
| 毒物偵檢與防護 Detection and Decontamination of Poison Agents | 3 | | | | | | 3 | | | |
| 核生化防護族群必修學分小計 | 9 | | | | | | | | | |
| 材料熱力學(1) Thermodynamics of Materials(1) | 3 | | | | 3 | | | | | 材料工程 族群必修 |
| 結晶繞射概論 Elements of X-ray Diffraction | 3 | | | | 3 | | | | | |
| 物理冶金(2) Physical Metallurgy(2) | 3 | | | | | | 3 | | | |
| 材料工程族群必修學分小計 | 9 | | | | | | | | | |
| 普通化學(2) General Chemistry(2) | 3 | | 3 | | | | | | | 專業選修 |
| 有機化學(2) Organic Chemistry(2) | 3 | | | | 3 | | | | | |
| 有機化學實驗(2) Organic Chemistry Lab.(2) | 3 | | | | 3 | | | | | |
| 儀器及分析化學(2) Analytical Chemistry(2) | 3 | | | | 3 | | | | | |
| 化工數學 Chemical Engineering Mathematics | 3 | | | | | 3 | | | | |
| 核子放射化學 Nuclear Radiation Chemistry | 3 | | | | | 3 | | | | |
| 儀器及分析化學實驗(2) Analytical Chemistry Lab.(2) | 3 | | | | | 3 | | | | |
| 高分子導論 Introduction to Polymer | 3 | | | | | 3 | | | | |
| 基礎生物學 Fundamental Biology | 3 | | | | | 3 | | | | |
| 材料機械性質 Mechanical Behavior of Materials | 3 | | | | | 3 | | | | |
| 材料光電磁性質 Optical, Electronic, and Magnetic Properties of Materials | 3 | | | | | 3 | | | | |
| 材料熱力學(2) Thermodynamics of Materials(2) | 3 | | | | | 3 | | | | |
| 光電工程概論 Introduction to Optoelectronic Engineering | 3 | | | | | 3 | | | | |
| 材料動力學 Kinetics of Materials | 3 | | | | | 3 | | | | |
| 陶瓷材料 Ceramic Materials | 3 | | | | | 3 | | | | |

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|---|---|--|--|--|--|---|---|---|--|
| 電子材料 Electronic Materials | 3 | | | | | 3 | | | |
| 物理化學實驗(2) Physical Chemistry Lab.(2) | 3 | | | | | | 3 | | |
| 單元操作實驗(2) Unit Operation Lab.(2) | 3 | | | | | | 3 | | |
| 單元操作與輸送現象(3) Unit Operation & Transport Phenomena(3) | 3 | | | | | | 3 | | |
| 環境化學 Environmental Chemistry | 3 | | | | | | 3 | | |
| 有機材料 Organic Materials | 3 | | | | | | 3 | | |
| 材料破損分析 Failure Analysis of Materials | 3 | | | | | | 3 | | |
| 材料力學 Material Mechanics | 3 | | | | | | 3 | | |
| 半導體材料與製程導論 Introduction to Semiconductor Materials and Process | 3 | | | | | | 3 | | |
| 火藥學(2) Explosives(2) | 3 | | | | | | 3 | | |
| 火藥(化)工廠設計 Explosive(Chemical) Plant Design | 3 | | | | | | 3 | | |
| 有機金屬化學 Organo-metallic Chemistry | 3 | | | | | | 3 | | |
| 核子放射防護與消除 Protecting and Clean Technology of Radiochemistry | 3 | | | | | | 3 | | |
| 材料特性分析 Characterization of Materials | 3 | | | | | | 3 | | |
| 奈米材料學導論 Introduction to Nanotechnology | 3 | | | | | | 3 | | |
| 熱處理學 Heat Treatment of Steel | 3 | | | | | | 3 | | |
| 污染防治 Pollution Control | 3 | | | | | | | 3 | |
| 程序控制 Process Control | 3 | | | | | | | 3 | |
| 生物化學 Biochemistry | 3 | | | | | | | 3 | |
| 觸媒化學 Catalysis Chemistry | 3 | | | | | | | 3 | |
| 有機分析及有機光譜學 Organic Analysis & Spectroscopy | 3 | | | | | | | 3 | |
| 固態物理 | 3 | | | | | | | 3 | |

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|---|---|--|--|--|--|--|--|---|--|
| Solid-State Physics | | | | | | | | | |
| 系統工程 Systems Engineering | 3 | | | | | | | 3 | |
| 彈藥學 Ammunition Theory | 3 | | | | | | | 3 | |
| 推進劑學 Rocket Propellants | 3 | | | | | | | 3 | |
| 程序模擬 Process Simulation | 3 | | | | | | | 3 | |
| 新能源概論 Introduction to New Energy | 3 | | | | | | | 3 | |
| 消防基本概論 Introduction to Fire Fighting | 2 | | | | | | | 2 | |
| 量子化學 Quantum Chemistry | 3 | | | | | | | 3 | |
| 化學動力學 Chemical Kinetics | 3 | | | | | | | 3 | |
| 電子顯微鏡 Electron Microscopy | 3 | | | | | | | 3 | |
| 鋼鐵加工及熱處理實務 Practice of Steel Processing and Heat Treatment | 3 | | | | | | | 3 | |

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| 備考 | <ol style="list-style-type: none"> 1. 最低畢業學分為128學分。 2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程。 3. 化學工程(火炸藥)族群、化學工程(核生化防護)族群及材料工程族群須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「跨族群必修課程」或「專業選修課程」中擇選，至少選修17學分，須通過其中8學分以達畢業門檻。 4. 須選修「程式語言概論」及「工程倫理」。 5. 選修課開課學期得視需要由本組調整。 |
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環境資訊及工程組

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note | |
|---|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|--------------------------------------|--|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | | |
| 測量學及實習 Surveying and Practice (4小時) | 3 | | 3 | | | | | | | | |
| 電腦輔助製圖與實作 Computer Aided Drawing and Practice | 3 | | | 3 | | | | | | | |
| 工程數學(1) Engineering Mathematics (1) | 3 | | | 3 | | | | | | | |
| 統計學 General Statistics | 2 | | | | 2 | | | | | | |
| 大氣科學專題實作 Case Study of Atmospheric Science (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | 左列 6 項專題實作課程擇 1 項修習，完成 3 學期課程始能取得學分。 | |
| 空間科學專題實作 Geospatial Special Practice (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | | |
| 軍事工程專題實作 Special Topics in Engineering Practices (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | | |
| 環境資訊及工程整合專題實作 Special Topics in Integration of Environmental Information and Engineering (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | | |
| 災害防救整合專題實作 Special Topics in Integration of Disaster Prevention and Protection (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | | |
| 智慧物聯網環境專題實作 Geospatial Special in Internet of Things Application Environment (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | | |
| 太空科學及工程整合專題實作 (Capstone課程) Special Topics in Space Science and Engineering | 3 | | | | | 1 | 1 | 1 | | | |
| 組共同必修學分小計 | 14 | | | | | | | | | | |
| 環境資訊及工程概論 Introduction to Environment Information and Engineering | 3 | | 3 | | | | | | | | |
| 環資組共同選修學分小計 | 3 | | | | | | | | | | |
| 大氣測計學及實習 Meteorological Measurements and Practice | 3 | | | 3 | | | | | | 大氣科學族群必修 | |
| 氣象學 Meteorology | 3 | | | 3 | | | | | | | |

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|---|-----------|--|--|---|---|---|---|---|--|
| 工程數學(2) Engineering Mathematics (2) | 3 | | | | 3 | | | | |
| 熱力學 Thermodynamics | 3 | | | | 3 | | | | |
| 大氣物理學 Atmospheric Physics | 3 | | | | 3 | | | | |
| 大氣動力學(1) Dynamic Meteorology (1) | 3 | | | | | 3 | | | |
| 天氣學(1) Synoptic Meteorology (1) | 3 | | | | | 3 | | | |
| 天氣學實習(1)Synoptic Meteorology Laboratory (1) | 2 | | | | | 2 | | | |
| 數值天氣預報及實習 Numerical Weather Prediction and Practice | 3 | | | | | | 3 | | |
| 大氣動力學(2) Dynamic Meteorology (2) | 3 | | | | | | 3 | | |
| 天氣學(2) Synoptic Meteorology (2) | 3 | | | | | | 3 | | |
| 天氣學實習(2)Synoptic Meteorology Laboratory(2) | 2 | | | | | | 2 | | |
| 軍事氣象學導論 Introduction to Military Meteorology | 2 | | | | | | | 2 | |
| 氣候學 Climatology | 3 | | | | | | | 3 | |
| 大氣族群必修學分小計 | 39 | | | | | | | | |
| 流體力學 Fluid Mechanics | 3 | | | 3 | | | | | |
| 電磁學 Electromagnetism | 3 | | | | 3 | | | | |
| 氣象程式設計 Design on the Meteorological Program | 3 | | | | 3 | | | | |
| Python程式設計 Python Programming Language | 3 | | | | 3 | | | | |
| 衛星氣象學 Satellite Meteorology | 3 | | | | | 3 | | | |
| 數值分析 Numerical Analysis | 3 | | | | | 3 | | | |
| Julia程式設計 Julia Programming Language | 3 | | | | | 3 | | | |
| 雷達氣象學 Radar Meteorology | 3 | | | | | 3 | | | |
| 邊界層氣象學 Boundary Layer Meteorology | 3 | | | | | | 3 | | |
| 海洋聲學 Marine Acoustics | 3 | | | | | | 3 | | |
| 海洋動力學概論 Fundamental Ocean Dynamic | 3 | | | | | | 3 | | |

大氣科學族
群專業選修

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|--|-----------|--|--|---|---|---|---|---|--|
| 中尺度氣象學 Meso-scale Meteorology | 3 | | | | | | 3 | | |
| 航空氣象學 Aviation Meteorology | 3 | | | | | | | 3 | |
| 航海氣象學 Nautical meteorology | 3 | | | | | | | 3 | |
| 系統工程 Systems Engineering | 3 | | | | | | | 3 | |
| 物理海洋概論 Introduction to Physical Oceanography | 3 | | | | | | | 3 | |
| 氣候變遷與調適 Climate Change and Adaptation | 3 | | | | | | | 3 | |
| 熱帶氣象學 Tropical Meteorology | 3 | | | | | | | 3 | |
| 大氣電離層物理 Ionospheric Physics | 3 | | | | | | | 3 | |
| 測量平差 Surveying Adjustment Theory | 3 | | | 3 | | | | | |
| 測量平差計算 Surveying Adjustment Computation | 3 | | | 3 | | | | | |
| 遙感探測概論 Introduction to Remote Sensing | 3 | | | 3 | | | | | |
| 工程測量學 Engineering Surveying | 3 | | | | 3 | | | | |
| 工程測量學實習 Practice of Engineering Surveying | 1 | | | | 1 | | | | |
| 測量程式設計 Surveying Program Design | 3 | | | | 3 | | | | |
| 航空攝影測量學 Photogrammetry | 3 | | | | 3 | | | | |
| 航空攝影測量學實習 Photogrammetry Practice | 1 | | | | 1 | | | | |
| 大地測量學 Geodesy | 3 | | | | | 3 | | | |
| 大地測量學實習 Geodesy Practice | 1 | | | | | 1 | | | |
| 地圖學 Cartography (4小時) | 3 | | | | | 3 | | | |
| 軍圖製印學 Military Map Printing | 3 | | | | | 3 | | | |
| 地理資訊系統概論 Introduction to GIS | 3 | | | | | | 3 | | |
| 全球導航衛星系統 Global Navigation Satellite System | 3 | | | | | | 3 | | |
| 空間族群必修學分小計 | 36 | | | | | | | | |

空間科學族
群必修

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|---|---|--|--|---|---|---|---|---|--|------------|-------|
| 地形學 Geomorphology | 3 | | | | 3 | | | | | | |
| 數值攝影測量學 Digital Photogrammetry | 3 | | | | | 3 | | | | | |
| 合成孔徑雷達測量概論 Introduction to Interferometric Synthetic Aperture RADER | 3 | | | | | 3 | | | | | |
| 光達與環境感知技術 LiDAR and Environmental Sensing Technologies | 3 | | | | | 3 | | | | | |
| 數值地形概論 Introduction to DTM | 3 | | | | | | 3 | | | | |
| 幾何大地測量學 Geometric Geodesy | 3 | | | | | | 3 | | | | |
| 海洋測量學 Oceanographic Surveying | 3 | | | | | | 3 | | | | |
| 空間資訊與物聯網應用實務 Geospatial Internet of Things | 3 | | | | | | 3 | | | | |
| 行動定位與戰場管理 Mobile Positioning and Battlefield Management | 2 | | | | | | 2 | | | | |
| 地籍測量學 Cadastral Surveying | 3 | | | | | | | 3 | | 空間科學族群專業選修 | |
| 物理大地測量學 Physical Geodesy | 3 | | | | | | | 3 | | | |
| 彩色複製學 Color Reproduction | 3 | | | | | | | 3 | | | |
| 地理資訊製圖 GIS Mapping | 3 | | | | | | | 3 | | | |
| 空間資訊整合及圖台開發 Integration of Geospatial Information and Development of Common Operating Pictures | 3 | | | | | | | 3 | | | |
| 地理空間情報大數據分析 Big data Analysis for Geospatial Intelligence | 3 | | | | | | | 3 | | | |
| 系統工程 Systems Engineering | 3 | | | | | | | 3 | | | |
| 高精地圖整合應用 Application of High Definition Map | 3 | | | | | | | 3 | | | |
| 衛星測量 Satellite Survey | 3 | | | | | | | 3 | | | |
| 土地法 Land Law | 3 | | | | | | | 3 | | | |
| 遙測影像機器學習應用 Remote Sensing Imagery on application of machine learning | 3 | | | | | | | 3 | | | |
| 工程材料學 Engineering Materials | 3 | | | 3 | | | | | | | 軍事工程族 |

| | | | | | | | | | | |
|---|-----------|--|--|---|---|---|---|---|--|------------|
| 工程力學 Engineering Mechanics | 3 | | | 3 | | | | | | 群必修 |
| 材料力學 Mechanics of Materials | 3 | | | | 3 | | | | | |
| 土木施工 Civil Engineering Construction | 3 | | | | 3 | | | | | |
| 土壤力學 Soil Mechanics | 3 | | | | 3 | | | | | |
| 水文及防洪工程 Hydrology and Hydraulic Engineering | 3 | | | 3 | | | | | | |
| 結構學 Theory of Structures | 3 | | | | | 3 | | | | |
| 基礎工程 Foundation Engineering | 3 | | | | | 3 | | | | |
| 鋼筋混凝土 Reinforced Concrete | 3 | | | | | | 3 | | | |
| 設施水電工程及實習 Electrical and Sanitary Interior Facilities and Practice (4小時) | 3 | | | | | | 3 | | | |
| 營建工程管理 Construction Engineering Management | 3 | | | | | | 3 | | | |
| 工程地質學 Engineering Geology | 2 | | | | | | | 2 | | |
| 軍事防護工程 Introduction of Fortification Engineering | 2 | | | | | | | 2 | | |
| 工程法規及採購 Regulation and Contract Management for Construction Engineering | 3 | | | | | | | 3 | | |
| 軍工族群必修學分小計 | 40 | | | | | | | | | |
| 探測技術於環境資訊與工程之應用 Detection technologies for environmental information and engineering | 3 | | | 3 | | | | | | 軍事工程族群專業選修 |
| 流體力學 Fluid Mechanics | 3 | | | 3 | | | | | | |
| 工程材料實驗 Tests of Engineering Materials | 2 | | | | 2 | | | | | |
| 工程數學(2) Engineering Mathematics (2) | 3 | | | | 3 | | | | | |
| 土壤力學實驗 Soil Mechanical Testing | 2 | | | | 2 | | | | | |
| 生態工程 Ecological Engineering | 3 | | | | 3 | | | | | |
| 建築設備 Building Equipment | 3 | | | | | 3 | | | | |
| 環境工程 Environmental Engineering | 2 | | | | | 2 | | | | |

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|---|---|--|--|--|--|---|---|---|--|
| 工程估價 Cost Estimation of Construction | 2 | | | | | 2 | | | |
| 橋樑施工方法 Method for Bridge Construction | 3 | | | | | 3 | | | |
| 水利工程 Hydraulic Engineering | 3 | | | | | 3 | | | |
| 敷地計畫 Site Planning | 2 | | | | | 2 | | | |
| 港灣工程 Coastal and Harbor Engineering | 2 | | | | | 2 | | | |
| 計算機在工程之應用及實習 Application of Computer in Engineering and Practice | 2 | | | | | | 2 | | |
| 建築設計 Architecture Design | 2 | | | | | | 2 | | |
| 鋪面工程 Pavement Engineering | 3 | | | | | | 3 | | |
| 大地工程實務 Construction Practice in Geotechnical Engineering | 3 | | | | | | 3 | | |
| 結構動力學 Structural Dynamics | 3 | | | | | | 3 | | |
| 建築資訊模型之理論應用與實 作 Theory and Applications of Building Information Modeling | 2 | | | | | | 2 | | |
| 房屋結構設計及實習 Design of Building Structures and Practice | 3 | | | | | | | 3 | |
| 系統工程 Systems Engineering | 3 | | | | | | | 3 | |
| 鋼結構設計 Structural Steel Design | 3 | | | | | | | 3 | |
| 地震工程 Earthquake Engineering | 2 | | | | | | | 2 | |
| 結構矩陣分析 Matrix Structural Analysis | 3 | | | | | | | 3 | |
| 防災工程 Disaster Prevention Engineering | 2 | | | | | | | 2 | |
| 備考 | <p>1. 最低畢業學分為128學分。</p> <p>2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程。</p> <p>3. 大氣科學族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「大氣科學族群選修課程」及「環資組共同選修課程」中選修至少 15 學分以上，須通過其中6學分以達畢業門檻。</p> <p>4. 空間科學族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「空間科學族群選修課程」及「環資組共同選修課程」中選修至少 15 學分以上，須通過其中6學分以達畢業門檻。</p> <p>5. 軍事工程族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課</p> | | | | | | | | |

程」、「軍事工程族群選修課程」及「環資組共同選修課程」中選修至少 15 學分以上，須通過其中5學分以達畢業門檻。

6.須選修「程式語言概論」、「工程倫理」及「環境資訊及工程概論」。

7.選修課開課學期得視需要由本組調整。

電機電子工程組

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|--|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|--------------------------|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 數位邏輯設計 Digital logic design | 3 | | 3 | | | | | | | 電機電子工程組必修 |
| 電路學(1) Fundamental of Electric Circuits (1) | 3 | | 3 | | | | | | | |
| 線性代數 Linear Algebra | 3 | | | 3 | | | | | | |
| 工程數學(1) Engineering Mathematics (1) | 3 | | | 3 | | | | | | |
| 電路學(2) Fundamental of Electric Circuits (2) | 3 | | | 3 | | | | | | |
| 電子學(1) Electronics Circuits (1) | 3 | | | 3 | | | | | | |
| 電子實驗(1) Experiments of Electrical Engineering(1) | 1 | | | 1 | | | | | | |
| 工程數學(2) Engineering Mathematics (2) | 3 | | | | 3 | | | | | |
| 電磁學 Electromagnetics | 3 | | | | 3 | | | | | |
| 電子學(2) Electronics Circuits (2) | 3 | | | | 3 | | | | | |
| 電子實驗(2) Experiments of Electrical Engineering(2) | 1 | | | | 1 | | | | | |
| 訊號與系統 Signal and System | 3 | | | | 3 | | | | | |
| 機率與統計 Probability and Statistics | 3 | | | | | 3 | | | | |
| 電資戰 Introduction to Electronic and Information Warfare | 2 | | | | | | | 2 | | |
| 控制與自動化專題實作 (Capstone課程) Special Topics in Control and Automation | 3 | | | | | 1 | 1 | 1 | | 左列專題實作課程擇1項修習，修滿3學期始取得學分 |
| 智慧型機器人專題實作 (Capstone課程) Special Topics in Intelligent Robotics | 3 | | | | | 1 | 1 | 1 | | |
| 資訊應用專題實作 (Capstone課程) Special Topics in Information Application | 3 | | | | | 1 | 1 | 1 | | |

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|---|-----------|--|--|--|--|---|---|---|--|---------------------------------|
| 計算機網路應用專題實作 (Capstone課程) Special Topics in Applied Computer Network | 3 | | | | | 1 | 1 | 1 | | |
| 資訊安全專題實作 (Capstone課程) Special Topics in Information Security | 3 | | | | | 1 | 1 | 1 | | |
| 無線通訊應用專題實作 (Capstone課程) Special Topics in Application for Wireless Communication | 3 | | | | | 1 | 1 | 1 | | |
| 雷達系統應用專題實作 (Capstone課程) Special Topics in Radar system Application | 3 | | | | | 1 | 1 | 1 | | |
| 通訊系統專題實作 (Capstone課程) Special Topics in Communication Systems | 3 | | | | | 1 | 1 | 1 | | |
| 微波裝置專題實作 (Capstone課程) Special Topics in Microwave Devices | 3 | | | | | 1 | 1 | 1 | | |
| 半導體元件應用專題實作 (Capstone課程) Special Topics in Semiconductor Devices Application | 3 | | | | | 1 | 1 | 1 | | |
| 光電應用專題實作 (Capstone課程) Special Topics in Optoelectronic Application | 3 | | | | | 1 | 1 | 1 | | |
| 組共同必修學分小計 | 40 | | | | | | | | | |
| 通訊系統 Communication systems | 3 | | | | | 3 | | | | |
| 電磁波 Electromagnet IC Waves | 3 | | | | | 3 | | | | |
| 通訊系統實驗 Communication Systems Lab | 1 | | | | | | 1 | | | 電子族群必修 跨族群必修 課程至少選 修1門 |
| 微波工程 Introduction to Microwave Engineering | 3 | | | | | | 3 | | | |
| 雷達系統 Radar System | 3 | | | | | | | 3 | | |
| 電子族群必修學分小計 | 13 | | | | | | | | | |
| 自動控制系統(1) Automatic Control Systems(1) | 3 | | | | | 3 | | | | 電機族群必修 跨族群必修 |
| 電機機械 Electric Machinery | 3 | | | | | 3 | | | | |

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|--|-----------|--|--|--|--|---|---|---|--|----------|
| 單晶片 Single Chip | 3 | | | | | 3 | | | | 課程至少選修1門 |
| 自動控制實驗 Automatic Control Lab | 1 | | | | | | 1 | | | |
| 自動控制系統(2) Automatic Control Systems(2) | 3 | | | | | | 3 | | | |
| 電機族群必修學分小計 | 13 | | | | | | | | | |
| 水中聲學 Uuderwater Acoustics | 3 | | | | | | | 3 | | 專業選修 |
| 系統工程專題研究(1) Systems Engineering Project Research(1) | 3 | | | | | 3 | | | | |
| 系統工程專題研究(2) Systems Engineering Project Research(2) | 3 | | | | | | 3 | | | |
| 系統工程專題研究(3) Systems Engineering Project Research(3) | 3 | | | | | | | 3 | | |
| 電機科技論文報告 Report Writing for Electrical Technology | 3 | | | | | | | 3 | | |
| 電子電路設計 Analog integrated Circuit Design | 3 | | | | | 3 | | | | 通訊電波領域選修 |
| 多媒體概論 Introduction to Multimedia | 3 | | | | | 3 | | | | |
| 數位通訊 Digital Communication | 3 | | | | | | 3 | | | |
| 數位訊號處理 Digital Signal Processing | 3 | | | | | | 3 | | | |
| 壓縮編碼概論 Compression and Coding Theory | 3 | | | | | | 3 | | | |
| 電磁波傳播 Electromagnetic Waves Propagations | 3 | | | | | | 3 | | | |
| 電磁理論 Electromagnet IC Theory | 3 | | | | | | 3 | | | |
| 高頻電路設計 High Frequency Circuit Designs | 3 | | | | | | | 3 | | |
| 通訊電子學 Communication Electronics | 3 | | | | | | | 3 | | |
| 行動通訊概論 Fundamentals of Mobile Communications | 3 | | | | | | | 3 | | |
| 數位訊號處理程式設計 DSP Programming | 3 | | | | | | | 3 | | |
| 多媒體通訊 Multimedia Communications | 3 | | | | | | | 3 | | |
| 軟體無線電導論 | 3 | | | | | | | 3 | | |

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| Introduction to Software Defined Radio | | | | | | | | | |
| 網路通訊 Network Communication | 3 | | | | | | | 3 | |
| 衛星通訊概論 Fundamental of Satellite Communications | 3 | | | | | | | 3 | |
| 天線工程 Antenna Engineering | 3 | | | | | | | 3 | |
| 展頻通訊 Spread Spectrum Communications | 3 | | | | | | | 3 | |
| 視訊工程 Video Engineering | 3 | | | | | | | 3 | |
| 近代物理 Modern Physics | 3 | | 3 | | | | | | |
| 半導體元件物理 Semiconductor Device Physics | 3 | | | 3 | | | | | |
| 近代光電工程 Introduction to Modern Optoelectronic Engineering | 3 | | | 3 | | | | | |
| 量子力學導論 Introduction to Quantum Mechanics | 3 | | | 3 | | | | | |
| 近代光學 Modern optics | 3 | | | 3 | | | | | |
| 微電子技術 Microelectronic Technology | 3 | | | | 3 | | | | |
| 固態電子元件 Solid-state Electronic Devices | 3 | | | | 3 | | | | |
| 光電子學 Optoelectronics | 3 | | | | 3 | | | | 光電與半導體領域選修 |
| 光電子學實驗 Optoelectronics Lab | 3 | | | | 3 | | | | |
| 固態物理 Solid State Physics | 3 | | | | 3 | | | | |
| 光纖概論 Introduction to Optic Fiber | 3 | | | | 3 | | | | |
| 半導體製程 Semiconductor Processing | 3 | | | | | 3 | | | |
| 金氧半製程技術 MOS Processing Technology | 3 | | | | | 3 | | | |
| 光電半導體材料 Optoelectronic and Semiconductor Materials | 3 | | | | | 3 | | | |
| 雷射概論 Introduction to Lasers | 3 | | | | | 3 | | | |
| 奈米科技概論 Introduction to nano-Technology | 3 | | | | | 3 | | | |

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|--|---|--|--|--|--|---|---|---|--|--|
| 光學設計 Optical Design | 3 | | | | | | 3 | | | |
| 半導體元件量測 Measurement of Semiconductor Devices | 3 | | | | | | | 3 | | |
| 光電半導體感測器原理 Principle of Optoelectronic and Semiconductor Sensor | 3 | | | | | | | 3 | | |
| 光電元件與應用 Optoelectronic Devices and Application | 3 | | | | | | | 3 | | |
| 量子電腦與及通訊原理 Principle of Quantum Computer and Communications | 3 | | | | | | | 3 | | |
| 光電通訊 Optical Communications | 3 | | | | | | | 3 | | |
| 積體光學 Integrated optics | 3 | | | | | | | 3 | | |
| 線性系統 Linear System Theory | 3 | | | | | 3 | | | | |
| 可程控系統之開發與應用 Development and Application of Programmable System | 3 | | | | | 3 | | | | |
| 物聯網導論 Introduction to the Internet of Things | 3 | | | | | 3 | | | | |
| 工業電子 Industrial electronics | 3 | | | | | 3 | | | | |
| 數位電子 Digital electronics | 3 | | | | | | 3 | | | |
| 電子儀表 Electronic Instrumentation | 3 | | | | | | 3 | | | |
| 電力電子學 Power Electronics | 3 | | | | | | 3 | | | |
| 電機機械實驗 Electric Machinery Lab | 1 | | | | | | 1 | | | |
| 模糊系統及控制 Fuzzy System and Control | 3 | | | | | | 3 | | | |
| 最佳控制 Optimal Control | 3 | | | | | | 3 | | | |
| 機器人導論 Introduction to Robotics | 3 | | | | | | | 3 | | |
| 電子自動化導論 Introduction of E-Automation | 3 | | | | | | | 3 | | |
| 電力電子電路設計與應用 Design and Application of Power Electronic Circuit | 3 | | | | | | | 3 | | |
| 電動機控制 Motor Control | 3 | | | | | | | 3 | | |

控制自動化
領域選修

| | | | | | | | | | | |
|--|---|--|---|---|--|---|--|---|--|---------------|
| 電力系統 Power System | 3 | | | | | | | 3 | | |
| 數位控制系統 Digital Control System | 3 | | | | | | | 3 | | |
| 數位控制實驗 Digital Control System Lab | 1 | | | | | | | 1 | | |
| 網路監控程式設計 Network Monitoring Programming Design | 3 | | | | | | | 3 | | |
| 導引控制 Guidance and Control | 3 | | | | | | | 3 | | |
| 近代控制 Modern Control | 3 | | | | | | | 3 | | |
| 程式設計 Program Design | 3 | | 3 | | | | | | | |
| 微算機原理與實驗 Principle and Laboratory of Microprocessor | 3 | | | 3 | | | | | | |
| 資料結構 Data Structures | 3 | | | 3 | | | | | | |
| 電腦輔助邏輯電路設計 Computer Aided Logic Circuit Design | 3 | | | 3 | | | | | | |
| 計算機網路 Computer Network | 3 | | | | | 3 | | | | |
| 演算法 Algorithms | 3 | | | | | 3 | | | | |
| 物件導向程式設計 Object Oriented Programming | 3 | | | | | 3 | | | | |
| Matlab 程式設計 Matlab Programming | 3 | | | | | 3 | | | | 控制自動化 領域選修 |
| 數值分析 Numerical Analysis | 3 | | | | | | | 3 | | |
| 作業系統 Operating System | 3 | | | | | | | 3 | | |
| 密碼學 Cryptography | 3 | | | | | | | 3 | | |
| 系統分析與設計 System Analysis and Design | 3 | | | | | | | 3 | | |
| 離散數學 Discrete Mathematics | 3 | | | | | | | 3 | | |
| 網路程式設計 Network Program Design | 3 | | | | | | | 3 | | |
| 數位影像處理 Digital Image Processing | 3 | | | | | | | 3 | | |
| 類神經網路 Artificial Neural Networks | 3 | | | | | | | 3 | | |
| 計算機組織 Computer Organization | 3 | | | | | | | 3 | | |

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|--|--|--|--|--|--|--|--|---|--|
| 資訊安全 Information Security | 3 | | | | | | | 3 | |
| 系統模擬 System Simulation | 3 | | | | | | | 3 | |
| 生物資訊 Bioinformatics | 3 | | | | | | | 3 | |
| 資訊與編碼理論導論 Introduction to information and coding theory | 3 | | | | | | | 3 | |
| 系統程式 System Programming | 3 | | | | | | | 3 | |
| 資料庫系統 Database System | 3 | | | | | | | 3 | |
| 模糊系統 Fuzzy System and Control | 3 | | | | | | | 3 | |
| 人工智慧 Artificial Intelligence | 3 | | | | | | | 3 | |
| 備考 | <p>1. 最低畢業學分為128學分。</p> <p>2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程。</p> <p>3. 電子工程族群與電機工程族群須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「跨族群必修課程」或「專業選修課程」中選擇，至少選修24學分，須通過其中9學分以達畢業門檻，跨族群必修課至少一門。</p> <p>4. 須選修「程式語言概論」及「工程倫理」。</p> <p>5. 電子工程族群須選修「單晶片」、「半導體元件量測」、「光電半導體感測器原理」、「光電元件與應用」四擇一。</p> <p>6. 選修課開課學期得視需要由本組調整。</p> | | | | | | | | |

動力及系統工程組

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|--|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|---|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 武器及戰鬥載具概論 Concepts of Weapon and Fighting Vehicles | 3 | | 3 | | | | | | | 動力及系統 工程組必修 |
| 電腦輔助機械製圖 Computer Aided Mechanical Drawing | 1 | | 1 | | | | | | | |
| 工程數學(1) Engineering Mathematics (1) | 3 | | | 3 | | | | | | |
| 應用力學－靜力學 Engineering Mechanics – Statics | 3 | | | 3 | | | | | | |
| 熱力學 Thermodynamics | 3 | | | 3 | | | | | | |
| 工廠實習 Workshop Practice | 1 | | | 1 | | | | | | |
| 工程數學(2) Engineering Mathematics (2) | 3 | | | | 3 | | | | | |
| 應用力學－動力學 Engineering Mechanics – Dynamics | 3 | | | | 3 | | | | | |
| 流體力學 Fluid Mechanics | 3 | | | | 3 | | | | | |
| 電路學及實驗 An Introduction to Circuit and Experiments Analysis | 3 | | | | 3 | | | | | |
| 材料力學 Mechanics of Materials | 3 | | | | | 3 | | | | |
| 自動控制 Automatic Control | 3 | | | | | 3 | | | | |
| 系統工程概論 An Introduction to Systems Engineering | 3 | | | | | | 3 | | | |
| 兵器工程專題實作 Weapon System Engineering Project (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | 左列 7 項專 題實作課程 擇 1 項修 習，修滿3 學期始取得 學分。 |
| 系統工程專題實作 System Engineering Project (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 飛彈工程專題實作 Missile System Engineering Project (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 車輛設計製造專題實作 Simple Vehicle Design and Manufacture Project(Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 車輛動力工程專題實作 | 3 | | | | | 1 | 1 | 1 | | |

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|---|-----------|--|---|---|--|---|---|---|--|-------------|
| Simple Vehicle Power Engineering Project (Capstone 課程) | | | | | | | | | | |
| 車輛控制工程專題實作 Simple Vehicle Control Engineering Project(Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 特殊船舶設計專題實作 Special Ship Design Project(Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 組共同必修學分小計 | 38 | | | | | | | | | |
| 彈藥學 Ammunitions | 2 | | 2 | | | | | | | |
| 彈道學及實驗(1) Ballistics and Experiments (1) | 3 | | | 3 | | | | | | |
| 兵器工程及實習(1) Ordnance Engineering and Workshop (1) | 3 | | | | | 3 | | | | 兵器系統工程族群必修 |
| 電子學及實驗 Electronic Component and Lab | 3 | | | | | 3 | | | | |
| 飛彈系統 Missile Systems | 3 | | | | | | 3 | | | |
| 系統工程管理概論 Systems Engineering Management | 3 | | | | | | | 3 | | |
| 兵器族群必修學分小計 | 17 | | | | | | | | | |
| 車輛系統原理 Principles of Vehicle Systems | 3 | | 3 | | | | | | | |
| 車輛檢修實務 Automotive Diagnosis and Service | 3 | | | 3 | | | | | | |
| 內燃機 Internal Combustion Engines | 3 | | | | | 3 | | | | 車輛及運輸工程族群必修 |
| 內燃機實務 Internal Combustion Engine Testing | 1 | | | | | | 1 | | | |
| 車輛結構分析 Vehicle Structure Analysis | 3 | | | | | | 3 | | | |
| 車輛運動力學 Vehicle Dynamics | 3 | | | | | | 3 | | | |
| 車輛族群必修學分小計 | 16 | | | | | | | | | |
| 船體計算與製圖 Hull Form Calculation and Drawing | 1 | | 1 | | | | | | | |
| 造船原理(1) Principles of Naval Architecture (1) | 3 | | | 3 | | | | | | 造船及海洋工程族群必修 |
| 船舶流體動力學 Fluid Dynamics | 3 | | | | | 3 | | | | |

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|---|-----------|--|---|---|---|---|---|--|------|
| 輪機工程(1) Marine Engineering (1) | 3 | | | | | 3 | | | |
| 軍艦設計 Warship Design | 3 | | | | | 3 | | | |
| 船舶結構學 Ship Structural | 3 | | | | | | 3 | | |
| 造船族群必修學分小計 | 16 | | | | | | | | |
| 高階程式語言 Advanced Programming Language | 3 | | 3 | | | | | | |
| 電腦輔助設計 Computer Aided Design | 3 | | 3 | | | | | | |
| 機率與統計 Probability and Statistics | 3 | | | 3 | | | | | |
| 實驗設計法 Experiments Design | 3 | | | 3 | | | | | |
| 工程軟體實務 Engineering Software Practice | 3 | | | 3 | | | | | |
| 可靠度工程 Reliability Engineering | 3 | | | | 3 | | | | |
| 應用數學 Applied Mathematics | 3 | | | | 3 | | | | |
| 線性代數 Linear Algebra | 3 | | | | 3 | | | | |
| 流體力學實驗 Experiments of Fluid Mechanics | 1 | | | | 1 | | | | |
| 機械設計 Mechanical Design | 3 | | | | | 3 | | | 專業選修 |
| 作業研究 Operation Research | 3 | | | | | 3 | | | |
| 高等材料力學 Advanced Mechanics of Materials | 3 | | | | | 3 | | | |
| 系統動力學 System Dynamics | 3 | | | | | | 3 | | |
| 數值分析 Numerical Analysis | 3 | | | | | | 3 | | |
| 後勤工程與管理 Logistics Engineering and Management | 3 | | | | | | 3 | | |
| 軍用光電系統 Military Electro-Optical Systems | 3 | | | | | | 3 | | |
| 決策分析 Decision Analysis | 3 | | | | | | 3 | | |
| 振動與噪音學 Noise and Vibration | 3 | | | | | | 3 | | |
| 液氣壓工程 Hydraulic and Pneumatic Engineering | 3 | | | | | | 3 | | |

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|--|---|--|---|---|---|---|---|--|-------------|
| 基礎水中聲學 Fundamentals of Underwater Acoustics | 3 | | | | | | 3 | | |
| 熱傳學 Heat Transfer | 3 | | | | | | 3 | | |
| 機電整合 Mechatronics | 3 | | | | | | 3 | | |
| 載具戰鬥系統設計 Combat System Design | 3 | | | | | | 3 | | |
| 能源科技 Energy Technology | 3 | | | | 3 | | | | |
| 燃氣輪機冷卻技術 Gas Turbine Cooling Technology | 3 | | | | | | 3 | | |
| 應用生物力學 Occupational Biomechanics | 3 | | | | | | 3 | | |
| 生物流體力學 Biofluid Mechanics | 3 | | | | | | 3 | | |
| 感測器原理與量測系統 Principles of Sensors and Measurement Systems | 3 | | | | | | 3 | | |
| 訊號與系統 Signals and Systems | 3 | | | | 3 | | | | |
| 機械系統設計 Systematic Mechanical Design | 3 | | | | 3 | | | | |
| 創意機構設計 Creative Mechanism Design | 3 | | | | | 3 | | | |
| 機電系統設計與實務 Mechatronics Design and Practice | 3 | | | | | 3 | | | |
| 彈道學及實驗(2) Ballistics and Experiments (2) | 3 | | | | 3 | | | | |
| 兵器工程及實習(2) Ordnance Engineering and Workshop (2) | 3 | | | | | 3 | | | |
| 輕兵器發展與戰技戰術 The Evolution of Small Arms and Military Tactics | 3 | | | | | 3 | | | 兵器系統工程族群選修 |
| 導引與控制 Guidance and Control | 3 | | | | | | 3 | | |
| 兵器設計實務 Weapons Design Practice | 3 | | | | | | 3 | | |
| 燃料及油品分析實務 Fuel and Oil Analysis | 3 | | 3 | | | | | | |
| 機械工程實驗 Experiments of Mechanical Engineering | 1 | | | 1 | | | | | 車輛及運輸工程族群選修 |
| 車輛感測元件與控制 Automotive Sensors and Control | 3 | | | 3 | | | | | |
| 車輛磨潤系統設計 Automotive Lubrication System Design | 3 | | | 3 | | | | | |

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|---|---|--|---|--|--|---|---|---|--|
| Vehicle's Tribological System Design | | | | | | | | | |
| 軍用車輛材料 Materials of Military Vehicles | 3 | | | | | 3 | | | |
| 車輛電學及實務 Automotive Electricity & Electronics Services | 3 | | | | | 3 | | | |
| 車輛傳動系統 Automotive Drive Trains | 3 | | | | | 3 | | | |
| 車輛底盤系統 Automotive Chassis Systems | 3 | | | | | 3 | | | |
| 車輛元件製造 Manufacturing Engineering and Technology | 3 | | | | | | 3 | | |
| 電動車及混合動力車 Electric and Hybrid Vehicles | 3 | | | | | | 3 | | |
| 戰甲車概論 Introduction of Armored Fighting Vehicles | 3 | | | | | | 3 | | |
| 車輛燃料與能源 The Vehicle Fuels and Energy | 3 | | | | | | | 3 | |
| 車輛空氣動力學 Aerodynamics of Road Vehicles | 3 | | | | | | | 3 | |
| 運輸管理 Transportation Management | 3 | | | | | | | 3 | |
| 先進運輸科技 Application of Advanced Technology in Transportation | 3 | | | | | | | 3 | |
| 車輛運輸工程學 Transportation Engineering | 3 | | | | | | | 3 | |
| 船舶及海洋工程概論 Introduction of Naval Architecture and Ocean Engineering | 3 | | 3 | | | | | | |
| 造船原理(2) Principles of Naval Architecture (2) | 3 | | | | | 3 | | | |
| 潛艦概論 Submarine Introduction | 3 | | | | | 3 | | | |
| 船用電學 Basic Electronics for Marine Engineering | 3 | | | | | | 3 | | |
| 艦艇耐海性能評估 Evaluation of Sea-keeping Performance | 3 | | | | | | 3 | | |
| 船艦結構動力學 Dynamics of Ocean Vehicles Structures | 3 | | | | | | 3 | | |
| 銲接學概論 Introduction of Welding | 3 | | | | | | 3 | | |

造船及海洋
工程族群選
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|---|---|--|--|--|--|--|--|---|--|
| Technology | | | | | | | | | |
| 造船工程實驗 Experiments of Naval Architecture Engineering | 1 | | | | | | | 1 | |
| 基礎海洋工程統計 Fundamentals of Oceanic Engineering Statistics | 3 | | | | | | | 3 | |
| 船艦操縱與控制 Maneuver and Control of Ocean Vehicles | 3 | | | | | | | 3 | |
| 輪機工程(2) Marine Engineering (2) | 3 | | | | | | | 3 | |
| 熱交換器設計 Design of Heat Exchangers | 3 | | | | | | | 3 | |
| 備考 | <ol style="list-style-type: none"> 1. 最低畢業學分為128學分。 2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程。 3. 兵器系統工程族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「兵器系統工程族群選修課程」或「專業選修課程」中選修至少 16 學分以上，須通過其中7學分以達畢業門檻。 4. 車輛及運輸工程族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「車輛及運輸工程族群選修課程」及「專業選修課程」中選修至少 17 學分以上，須通過其中8學分以達畢業門檻。 5. 造船及海洋工程族群學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「造船及海洋工程族群選修課程」及「專業選修課程」中選修至少 17 學分以上，須通過其中8學分以達畢業門檻。 6. 須選修「程式語言概論」及「工程倫理」。 7. 選修課開課學期得視需要由本組調整。 | | | | | | | | |

機械及航太工程組

| 科目名稱 Course Name | 學分 Credit | 第一學年 Grade 1 | | 第二學年 Grade 2 | | 第三學年 Grade 3 | | 第四學年 Grade 4 | | 備註 Note |
|---|--------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|--|
| | | 1st | 2nd | 1st | 2nd | 1st | 2nd | 1st | 2nd | |
| 工廠實習(1) Workshop Practice(1) | 1 | | 1 | | | | | | | 機械及航太 工程組必修 |
| 航太工程概論 Introduction to Aerospace Engineering | 2 | | 2 | | | | | | | |
| 能源概論 Introduction to Energy | 2 | | 2 | | | | | | | |
| 工程圖學 Engineering Graphics | 1 | | | 1 | | | | | | |
| 工廠實習(2) Workshop Practice(2) | 1 | | | 1 | | | | | | |
| 應用力學(1)-靜力學 Applied Mechanics(1): Statics | 3 | | | 3 | | | | | | |
| 熱力學(1) Thermodynamics(1) | 3 | | | 3 | | | | | | |
| 機械材料 Mechanical Materials | 3 | | | 3 | | | | | | |
| 工程數學(1) Engineering Mathematics(1) | 3 | | | 3 | | | | | | |
| 工程數學(2) Engineering Mathematics(2) | 3 | | | | 3 | | | | | |
| 應用力學(2)-動力學 Applied Mechanics(2): Dynamics | 3 | | | | 3 | | | | | |
| 材料力學 Mechanics of Materials | 3 | | | | 3 | | | | | |
| 流體力學 Fluid Mechanics | 3 | | | | 3 | | | | | |
| 電工學 Electrical Engineering | 3 | | | | | 3 | | | | |
| 熱傳學 Heat Transfer | 3 | | | | | | 3 | | | |
| 機電整合 Mechatronics | 3 | | | | | | | 3 | | |
| 熱流量測專題實作 Project on Thermal Fluid (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | 左列專題實 作課程擇 修習，修滿 3 學期始取得 學分。 |
| 能源工程專題實作 Project on Energy Engineering (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 設計製造專題實作 Project on Mechanical Design and Manufacturing (Capstone 課 程) | 3 | | | | | 1 | 1 | 1 | | |

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| 機電航太控制專題實作 Project on Mechatronics and Aeronautical Control(Capstone 課程) | 3 | | | | | 1 | 1 | 1 | | |
| 高速氣動專題實作 Project on High speed Gas Dynamics (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | 4 | |
| 噴射推進專題實作(Capstone 課 程) Project on Jet Propulsion | 3 | | | | | 1 | 1 | 1 | 4 | |
| 戰機結構專題實作 Project on Structure of Military Aircraft (Capstone 課程) | 3 | | | | | 1 | 1 | 1 | 4 | |
| 太空專題實作 (Capstone 課程) Project on Aerospace | 3 | | | | | 1 | 1 | 1 | | |
| 組共同必修學分小計 | 43 | | | | | | | | | |
| 電腦輔助製圖 Computer Aided Drawing | 1 | | | | 1 | | | | | |
| 材料實驗 Experiment of Materials | 1 | | | | 1 | | | | | |
| 機動學 Mechanical Dynamics | 3 | | | | 3 | | | | | |
| 機械設計 Mechanical Design | 3 | | | | | 3 | | | | 機械工程族 群必修 |
| 熱流實驗 Thermal Fluid Experiment | 1 | | | | | 1 | | | | |
| 機械製造 Mechanical Manufacturing | 3 | | | | | | 3 | | | |
| 自動控制 Automatic Control | 3 | | | | | | 3 | | | |
| 機械族群必修學分小計 | 15 | | | | | | | | | |
| 熱力學(2) Thermodynamics (2) | 3 | | | | 3 | | | | | |
| 流體力學實驗 Fluid Mechanics Lab. | 1 | | | | | 1 | | | | |
| 空氣動力學 Aerodynamics | 3 | | | | | 3 | | | | |
| 噴射推進原理 Principles of Jet Propulsion | 3 | | | | | 3 | | | | 航空工程族 群必修 |
| 飛具結構學 Aircraft Structures | 2 | | | | | | 2 | | | |
| 飛行力學 Flight Mechanics | 2 | | | | | | 2 | | | |
| 航空工程實驗 Aeronautical Engineering Lab. | 1 | | | | | | 1 | | | |
| 航空族群必修學分小計 | 15 | | | | | | | | | |
| 工廠實習(3) | 1 | | | | 1 | | | | | 專業選修 |

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|---|---|--|--|---|---|---|---|---|--|
| Workshop Practice(3) | | | | | | | | | |
| 無人機群飛概論 Introduction to UAS swarm flight | 3 | | | 3 | | | | | |
| 無人機系統概論 Introduction to Ummannnd aircraft system operation | 3 | | | | 3 | | | | |
| 無人機地面支援系統 Ummanned aircraft ground systems | 3 | | | | 3 | | | | |
| 工廠實習(4) Workshop Practice(4) | 1 | | | | 1 | | | | |
| 應用數學(1) Applied Mathematics(1) | 3 | | | | | 3 | | | |
| 振動學 Vibration | 3 | | | | | 3 | | | |
| 系統動力學 System Dynamics | 3 | | | | | 3 | | | |
| 高等熱力學 Advanced Thermodynamics | 3 | | | | | 3 | | | |
| 高等材料力學 Advanced Mechanics of Materials | 3 | | | | | 3 | | | |
| 風能技術 Wind Energy Technology | 3 | | | | | 3 | | | |
| 程式設計 Programing Design | 3 | | | | | 3 | | | |
| 黏性流體力學 Viscous Fluid Dynamics | 3 | | | | | 3 | | | |
| 太空運輸系統概論 Introduction to Space Transportation System | 3 | | | | | 3 | | | |
| 計算機應用 Applications of Computer | 3 | | | | | | 3 | | |
| 應用數學(2) Applied Mathematics(2) | 3 | | | | | | 3 | | |
| 線性代數 Linear Algebra | 3 | | | | | | 3 | | |
| 能源材料 Energy Materials | 3 | | | | | | 3 | | |
| 計算流體力學 Computational Fluid Dynamics | 3 | | | | | | 3 | | |
| 綠色能源 Green Energy | 3 | | | | | | 3 | | |
| 能源經濟 Energy Economics | 3 | | | | | | 3 | | |
| 數值分析 Numerical Analysis | 3 | | | | | | | 3 | |
| 太陽能工程 | 3 | | | | | | | 3 | |

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|--|---|--|--|--|---|--|---|---|----------|
| Solar Energy Engineering | | | | | | | | | |
| 有限元素法 Finite Element Method | 3 | | | | | | | 3 | |
| 雷射量測應用 The Application of Laser Measurement | 3 | | | | | | | 3 | |
| 燃燒學 Combustion | 3 | | | | | | | 3 | |
| 燃料電池 Introduction to Fuel Cell | 3 | | | | | | | 3 | |
| 冷凍空調 Refrigeration and Air Conditioning | 3 | | | | | | | 3 | |
| 系統工程概論 Introduction to Systems Engineering | 3 | | | | | | | 3 | |
| 工業 4.0 技術 Industry 4.0 | 3 | | | | | | | 3 | |
| 微機電工程 Micro-Electro-Mechanical Engineering | 3 | | | | | | | 3 | |
| 氣體動力學導論 Introduction to Gas Dynamics | 3 | | | | | | | 3 | |
| 能源工程 Energy Engineering | 3 | | | | | | | 3 | |
| 再生能源 Renewable Energy | 3 | | | | | | | 3 | |
| 可壓縮流體力學 Compressible Fluid Dynamics | 3 | | | | | | | 3 | |
| 電腦整合製造與智慧工廠 Computer Integrated Manufacturing and Smart Factory | 3 | | | | | | | 3 | |
| 熱機學 Thermal Engines | 3 | | | | 3 | | | | |
| 熱處理學 Heat Treatments | 3 | | | | | | 3 | | |
| 材料機械性質 Mechanical Properties of Materials | 3 | | | | | | | 3 | |
| 數控機具 Numerical Control Machine | 3 | | | | | | | 3 | 機械工程族群選修 |
| 流體機械 Fluid Machinery | 3 | | | | | | | 3 | |
| 計算機輔助設計 Computer Aided Design | 3 | | | | | | | 3 | |
| 計算機輔助製造 Computer Aided Manufacturing | 3 | | | | | | | 3 | |
| 彈性製造系統 | 3 | | | | | | | 3 | |

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|---|---|--|--|--|--|---|--|---|---|----------|
| Flexible Manufacture System | | | | | | | | | | |
| 生物工程學 Introduction to Bioengineering | 3 | | | | | | | 3 | | |
| 非傳統加工 Nontraditional Machining Processes | 3 | | | | | | | 3 | | |
| 計算機輔助工程 Computer Aided Engineering | 3 | | | | | | | 3 | | |
| 熱傳增強原理與實驗 Principles and Experiments of Enhanced Heat Transfer | 3 | | | | | | | 3 | | |
| 新興工程概論 Introduction to Emerging Engineering | 3 | | | | | | | 3 | | |
| 結構動力學 Structural Dynamics | 3 | | | | | 3 | | | | |
| 戰機設計原理 Principles of Military Aircraft Design | 3 | | | | | 3 | | | | |
| 戰機系統設計 Analysis and Design of Military Aircraft System | 3 | | | | | | | 3 | | |
| 空氣動力學專題 Special Topics on Aerodynamics | 3 | | | | | | | 3 | | |
| 戰機推進系統 Aircraft Propulsion System | 3 | | | | | | | 3 | | |
| 自動控制 Automatic Control | 3 | | | | | | | 3 | | |
| 材料破損分析 Failure Analysis of Materials | 3 | | | | | | | | 3 | |
| 旋翼機理論 Theory of Rotating-Wing Aircraft | 3 | | | | | | | | 3 | 航空工程族群選修 |
| 戰機飛彈性能分析 Performance Analysis of Aircraft and Missile | 3 | | | | | | | | 3 | |
| 飛行安全概論 Introduction to Flight Safety | 3 | | | | | | | | 3 | |
| 飛具結構學專題 Special Topic on Aircraft Structures | 3 | | | | | | | | 3 | |
| 太空力學 Astrodynamics | 3 | | | | | | | | 3 | |
| 衛星科技與應用 Satellite Technology and Application | 3 | | | | | | | | 3 | |
| 飛行穩定與控制 Flight Control and Stability | 3 | | | | | | | | 3 | |
| 複合材料 Composite Materials | 3 | | | | | | | | 3 | |

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|-------------------------------------|--|--|--|--|--|--|--|---|--|
| 旋翼機武器系統 Heliborne Weapon Systems | 3 | | | | | | | 3 | |
| 極音速空氣動力學 Hypersonic Aerodynamics | 3 | | | | | | | 3 | |
| 飛機製造 Aircraft Manufacturing | 3 | | | | | | | 3 | |
| 備考 | <ol style="list-style-type: none"> 1. 最低畢業學分為128學分。 2. 除本組選修課外，學生得經各組委員同意後，得選修系統工程與科技學位學程其它各組開授之相關課程或與本校教育合作之其他校（院）所開授之相關課程 3. 學生須修畢該組(族群)必修課程，選修課程可由「學程共同選修課程」、「機械工程族群選修課程」、「航空工程族群選修課程」或「專業選修課程」中選修至少14學分，須通過其中4學分以達畢業門檻。 4. 須選修「程式語言概論」及「工程倫理」。 5. 選修課開課學期得視需要由本組調整。 | | | | | | | | |