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| **Department of Mechanical Engineering,National Chung Hsing University****Graduation Requirements for Students Enrolled after 2024** |
| Items | Items |
| **I. Years of Enrollment：**Minimum years of enrollment：4 years (5 years for Veterinary Medicine)Can be extended for 2 more years (excluding 2 years of suspension)1. **Minimum graduation credits required: 136 credits**

Courses required by the university curriculum:* 1. Physical Education: **2** credits, not included in the credits for graduation. Extra taken PE course credits will be counted as from other departments, and are limited to a maximum of 2 credits. Athletes with outstanding sports achievements will be handled according to the relevant regulations of the Office of Physical Education and Sports.
	2. English Proficiency Requirement: 0 credit.
	3. General Education：28 credits
		1. Core Competencies: at least 3 credits. International students do not need to take the “Information Literacy” course.

ii. Language Competencies: (at least 8 credits)* + - * Native Language and Literature : 4 credits

Narrative Expression: Language LiteracyNarrative Expression: Language Application* + - * Foreign Language: 6 credits.

■English Communication and Expression■Academic English：Listening and Reading■Academic English：Speaking and Writingiii. Domain Competencies: at least 10 credits* + - * Humanistic Domain, Social Science Domain, and Natural Domain: at least one course in each Domain, total at least 6 credits.
			* Integrated Domain: at least 4 credits.
			* For National Defense education courses, only credits of 1 course can be counted as general education credits.
			* Our program belongs to the area of engineering, therefore, only one course from this area will be recognized.

Ⅳ. Extra credits **can't** be counted in the graduation credits.The general education courses " Principles and Applications of Daily Tools," " Environment and Energy," " Practical Aspects of Chemistry," and "The Mystery of Physics" are not counted toward general education credits.Courses required by college curriculum: **0** credits**Required professional courses by the department: 74 credits.**1. Other special regulations:

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| 本系學生至少須修滿 **136**學分方得畢業Students in this department must complete at least 136 credits to be eligible for graduation. |
| **28credits** | 共同必修General Education |
| **74credits** | 專業必修**Required professional courses by the department** |
| **25credits** | 本系最低應選修專業選修**Minimum of professional elective credits** | **A專業必選課程**「機械設計與製作專題」，學生至少須修滿4學分**A. Professional Elective Courses**Students must complete at least 4 credits in the course **"** Special Topics in Mechanical Engineering Design and Practice**."** |
| **B基礎選修課程**中至少修滿一門課程(3學分) **B. Basic Elective Courses**Students must complete at least **one course (3 credits).** |
| **C專業選修課程分為四個學群**：固力設計、熱流科技、系統控制、製造科技。學生至少必須修滿六門課程(18學分)，而於每個學群中至少選修一門課程(3學分)**C. Professional Elective Courses Categories**Professional elective courses are divided into four categories:1. **Solid Mechanics & Design**
2. **Energy & Thermal Fluid**
3. **System Control**
4. **Precision Manufacturing**
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| **9 credits** | 限於以下學院修習:**理學院**之學分。**工學院**之學分。(含本系專業選修B基礎選修、C專業選修四個學群、一般選修)。**電資學院**之學分。Credits must be earned from the following colleges:* **College of Science**
* **College of Engineering** (including **Basic Electives B, Professional Electives C [all four categories], and General Electives** from this department)
* **College of Electrical Engineering & Computer Science**
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| Core Course Title | Semester/Year | Credits |
| (1)微積分(一) Calculus(I) | Semester | （3） |
| (2)微積分(二) Calculus(II | Semester | （3） |
| (3)普通物理學General Physics | Year | （6） |
| (4)靜力學Statics | Semester | （3） |
| (5)動力學Dynamics | Semester | （3） |
| (6)工程圖學Engineering Drawing | Semester | （2） |
| (7)工場實習(一) Machine Shop Practice(I) | Semester | （1） |
| (8)電腦輔助機械製圖Computer-Aided Mechanical Drawing | Semester | （2） |
| (9)計算機程式Computer Programming | Semester | （2） |
| (10)工場實習(二) Machine Shop Practice(II) | Semester | （1） |
| (11)熱力學Thermodynamics | Semester | （3） |
| (12)工程數學(一) Engineering Mathematics(I) | Semester | （3） |
| (13)材料力學 Strength of Materials | Semester | （3） |
| (14)機動學Introduction to Mechanisms and Dynamics of Machinery | Semester | （3） |
| (15)機械材料Materials Engineering | Semester | （3） |
| (16)工程數學(二) Engineering Mathematics(II) | Semester | （3） |
| (17) 機械製Manufacturing Processes | Semester | （3） |
| (18) 機械工程實驗(一) Mechanical Engineering Experimentation (I) | Semester | （1） |
| (19) 機械設計原理Principle of Machine Design | Semester | （3） |
| (20) 流體力學Fluid Mechanics | Semester | （3） |
| (21) 電路學Electric Circuits | Semester | （3） |
| (22) 自動控制Automatic Control | Semester | （3） |
| (23) 熱傳學Heat Transfer | Semester | （3） |
| (24) 機械工程實驗(二) Mechanical Engineering Experimentation(II) | Semester | （1） |
| (25) 機械工程實驗(三) Mechanical Engineering Experimentation(III) | Semester | （1） |
| (26) 普通化學General Chemistry | Semester | （3） |
| (27) 普通物理學實驗General Physics Lab | Year | （2） |
| (28) 電子學Electronics | Semester | （3） |
| (29) 機械領域概論Introduction to Mechanical Engineering | Semester | （1） |

1. **Minimum of professional elective credits:** 25 **credits**

VIII. Minor Degree: If a student intends to study for a minor degree, he/she will need to take 20 (or more) credits in addition to the department’s minimum credits required for graduation. For more details, please see the bulletin of Curriculum Division website.IX. Double Major: The graduation requirements for students in pursuit of a double major (department or degree program) shall be based on the relevant regulations applicable at the time (year) when the application was approved. Double major students not only have to fulfill all graduation credit requirements of their original major (department or degree program), they must also complete all core courses for the second major (department or degree program) in order to be granted a double major degree.Undergraduate students who did not complete or are short of 40 credits for the second major must make up for those credits by taking courses designated by the second-major department or degree program.X. Cross-Disciplinary Expertise Development Program: For students whose compulsory courses and credits are the same as the ones offered by the departments (degree programs), double major, minor, or other cross-disciplinary expertise programs providing cross-disciplinary expertise courses, they shall take other elective courses that are related to their expertise and designated by the departments (degree programs) or colleges providing cross-disciplinary expertise module courses.XI. Students who graduate from the study period of the senior high school less than 6 years will be required to take at least 12 extra credits in their graduation requirements. |

附表：機械工程學系(學位學程)學士班學生畢業條件明細表(**114**學年度起適用)

入學資格屬修業年限少於國內高級中等學校及專科學校之國外同等學校畢業生，如海外中五學制畢（結）業生，畢業學分數應增加至少12學分，其增加之學分數與修習科目如下列： 專業選修科目列表114.02.12更新

**Appendix: Graduation Requirements for the Department of Mechanical Engineering (Bachelor's Program) (Applicable from the 114th Academic Year)**

For students whose admission qualifications are from foreign equivalent schools with a shorter duration than domestic senior high schools and junior colleges (e.g., graduates of overseas Form 5 education systems), the graduation credit requirement must be increased by at least **12 credits**.

The additional credits and required courses are as follows:
**List of Professional Elective Courses (Updated on 2024.02.12).**

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| **A專業必選課程**「機械設計與製作專題」，學生至少須修滿4學分**A. Professional Elective Courses**Students must complete at least 4 credits in the course **"** Special Topics in Mechanical Engineering Design and Practice**."** |
| Core Course Title | Semester/Year | Credits | Remarks |
| 機械設計與製作專題(a)Special Topics in Mechanical Engineering Design and Practice (a) | Year | 4 | **屬不連貫課程，須修滿4學分。**This is a non-sequential course, and students must complete 4 credits. |
| 機械設計與製作專題(b)Special Topics in Mechanical Engineering Design and Practice (b) | Year | 4 |
| 機械設計與製作專題(c)Special Topics in Mechanical Engineering Design and Practice (c) | Year | 4 |
| 機械設計與製作專題(d)Special Topics in Mechanical Engineering Design and Practice (d) | Year | 4 |
| 機械設計與製作專題(e)Special Topics in Mechanical Engineering Design and Practice (e) | Year | 4 |
| 機械設計與製作專題(f)Special Topics in Mechanical Engineering Design and Practice (f) | Year | 4 |
| 機械設計與製作專題(g)Special Topics in Mechanical Engineering Design and Practice (g) | Year | 4 |
| 機械設計與製作專題(h)Special Topics in Mechanical Engineering Design and Practice (h) | Year | 4 |
| 機械設計與製作專題(i)Special Topics in Mechanical Engineering Design and Practice (i) | Year | 4 |
| 機械設計與製作專題(j)Special Topics in Mechanical Engineering Design and Practice (j) | Year | 4 |
| 機械設計與製作專題(k)Special Topics in Mechanical Engineering Design and Practice (k) | Year | 4 |
| 機械設計與製作專題-問題導向學習(PBL)專題實作**(**一**)**Special Topics in Mechanical Engineering Design - PBL(I) | Semester | 2 |
| 機械設計與製作專題-問題導向學習(PBL)專題實作**(**二**)**Special Topics in Mechanical Engineering Design - PBL(II) | Semester | 2 |

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| **B基礎選修課程**中至少修滿一門課程(3學分) **B. Basic Elective Courses**Students must complete at least **one course (3 credits).** |
| Core Course Title | Semester/Year | Credits | Remarks |
| 進階程式設計Advanced Programming | Semester | 3 | **基礎選修課程****Basic Elective Courses** |
| 工程數學（三）Engineering Mathematics(III) | Semester | 3 |
| 數值分析Numerical Methods | Semester | 3 |

| **C專業選修課程分為四個學群**：固力設計、熱流科技、系統控制、製造科技。學生至少必須修滿六門課程(18學分)，而於每個學群中至少選修一門課程(3學分)**C. Professional Elective Courses Categories**Professional elective courses are divided into four categories:**1.Solid Mechanics & Design, 2.Energy & Thermal Fluid, 3.System Control, 4.Precision Manufacturing** |
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| Core Course Title | Semester/Year | Credits | Remarks |
| 中等材料力學Intermediate Mechanics of Materials | Semester | 3 | 固力設計組Solid Mechanics & Design先修科目: 材料力學(一) 或 材料力學Prerequisite: Strength of Materials or Strength of Materials(I)**適用113學年入學後學生**Applicable to students admitted after the 113th academic year. |
| 中等機動學Intermediate Mechanisms and Dynamics of Machinery | Semester | 3 | 固力設計組Solid Mechanics & Design先修科目:機動學Prerequisite: Introduction to Mechanisms and Dynamics of Machinery |
| 創意性工程設計 Creative Engineering Design | Semester | 3 | 固力設計組Solid Mechanics & Design |
| 系統動力學System Dynamics | Semester | 3 | 固力設計組、系統控制組Solid Mechanics & Design, System Control |
| 機器人運動學Kinematics of Robotics | Semester | 3 | 固力設計組、系統控制組Solid Mechanics & Design, System Control先修科目：機動學、動力學Prerequisite: Introduction to Mechanisms and Dynamics of Machinery, Dynamics |
| 精密機械工程導論 Introduction to Precision Mechanical Engineering | Semester | 3 | 固力設計組、製造科技組Solid Mechanics & Design, Precision Manufacturing |
| 中等動力學Intermediate Dynamics | Semester | 3 | 固力設計組、系統控制組Solid Mechanics & Design, System Control先修科目：動力學Prerequisite: Dynamics |
| 電腦輔助工程Computer Aided Engineering | Semester | 3 | 固力設計組、熱流科技組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, Precision Manufacturing |
| 機械振動學Mechanical Vibration | Semester | 3 | 固力設計組、系統控制組Solid Mechanics & Design, System Control先修科目:動力學Prerequisite: Dynamics進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 能量轉換工程Energy Conversion Engineering | Semester | 3 | 熱流科技組Energy & Thermal Fluids |
| 內燃機Internal Combustion Engines | Semester | 3 | 熱流科技組Energy & Thermal Fluids先修科目:熱力學Prerequisite: Thermodynamics |
| 冷凍空調Air Conditioning and Refrigeration | Semester | 3 | 熱流科技組Energy & Thermal Fluids |
| 飛機設計與試驗Design and Testing of Aircraft | Semester | 3 | 熱流科技組Energy & Thermal Fluids先修科目:空氣動力學Prerequisite: Aerodynamics |
| 液壓氣壓工程Hydraulics and Pneumatics | Semester | 3 | 熱流科技組Energy & Thermal Fluids |
| 空氣動力學 Aerodynamics | Semester | 3 | 熱流科技組Energy & Thermal Fluids先修科目:流體力學Prerequisite: Fluid Mechanics |
| 流體機械Fluid Machinery | Semester | 3 | 熱流科技組Energy & Thermal Fluids先修科目:流體力學Prerequisite: Fluid Mechanics |
| 電子系統熱傳技術Heat Transfer Technology in Electronic Systems | Semester | 3 | 熱流科技組Energy & Thermal Fluids |
| 再生能源導論Introduction to Renewable Energy | Semester | 3 | 熱流科技組Energy & Thermal Fluids |
| 真空系統概論Introduction to Vacuum System | Semester | 3 | 熱流科技組、製造科技組Energy & Thermal Fluids, Precision Manufacturing |
| 微流體系統與其在生醫之應用Microfluidics System and Its Application in Bioengineering | Semester | 3 | 熱流科技組、製造科技組Energy & Thermal Fluids, Precision Manufacturing |
| 電腦控制系統 Computer-Controlled Systems | Semester | 3 | 系統控制組System Control |
| 單晶片控制Design with Microcontrollers | Semester | 3 | 系統控制組System Control |
| 電機機械Electric Machinery | Semester | 3 | 系統控制組System Control |
| 工程電磁學 Engineering Electromagnetics | Semester | 3 | 系統控制組System Control |
| 機電系統整合Introduction to Mechatronics | Semester | 3 | 系統控制組System Control |
| 智慧製造技術概論Introduction to the Intelligent Manufacturing System | Semester | 3 | 系統控制組、製造科技組System Control, Precision Manufacturing |
| 製造聯網整合技術Network and Control System for Manufacturing | Semester | 3 | 系統控制組、製造科技組System Control, Precision Manufacturing進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 電機機械實驗Lab in Electric Machine | Semester | 1 | 系統控制組System Control |
| 熱處理Heat Treatment | Semester | 3 | 製造科技組Precision Manufacturing |
| 製造自動化Manufacturing Automation | Semester | 3 | 製造科技組Precision Manufacturing先修科目:工場實習(一)、工場實習(二) Prerequisite: Machine Shop Practice(I) (II) |
| 自動化機械Automatic Machines | Semester | 3 | 製造科技組Precision Manufacturing |
| 量測導論 Fundamentals of Dimensional Metrology | Semester | 3 | 製造科技組Precision Manufacturing |
| 工具機原理Fundamentals of Machine Tools | Semester | 3 | 製造科技組Precision Manufacturing |
| 非傳統加工Nontraditional Machining | Semester | 3 | 製造科技組Precision Manufacturing |
| 彈性製造系統Flexible Manufacturing Systems | Semester | 3 | 製造科技組Precision Manufacturing先修科目:機械製Prerequisite: Manufacturing Processes |
| 電腦輔助設計與製造 Computer Aided Design and Manufacturing | Semester | 3 | 製造科技組Precision Manufacturing |
| 模具設計與製造Design and Manufacturing of Stamping Dies | Semester | 3 | 製造科技組Precision Manufacturing |
| 金屬成型原理Fundamentals of Metal Forming | Semester | 3 | 製造科技組Precision Manufacturing |
| 成型機械原理Fundamentals of Machines for Metal Forming | Semester | 3 | 製造科技組Precision Manufacturing |
| 數值控制加工法 Numerical Controlled Machining | Semester | 3 | 製造科技組Precision Manufacturing先修科目:工場實習(一)、工場實習(二) 、機械製造、電腦輔助機械製圖Prerequisite: Machine Shop Practice(I) (II), Manufacturing Processes, Computer-Aided Mechanical Drawing |
| 半導體製程設備導論Introduction to Semiconductor Process Equipments | Semester | 3 | 系統控制組、製造科技組System Control, Precision Manufacturing進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 微奈米技術導論Introduction to Nanotechnology and MEMS | Semester | 3 | 製造科技組Precision Manufacturing |
| 數位影像處理導論Digital Image Processing | Semester | 3 | 製造科技組Precision Manufacturing |
| 半導體製造技術Semiconductor Manufacturing Technology | Semester | 3 | 製造科技組Precision Manufacturing |
| 奈微米製造技術Manufacturing Techniques for Microfabrication and Nanotechnology | Semester | 3 | 製造科技組Precision Manufacturing |
| 基礎光學Fundamentals of Optics | Semester | 3 | 製造科技組Precision Manufacturing |
| 工具機工程與加工應用Machine Tool Engineering and Machining Application | Semester | 3 | 製造科技組Precision Manufacturing |
| 精密加工Precision Fabrication | Semester | 3 | 製造科技組Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 量測系統原理與設計Theory and Design of Measurement Systems | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 動態系統Dynamical Systems | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 精密工具機技術專論Special Topics in Machine Tools | Semester | 3 | 固力設計組、系統控制組、製造科技組Solid Mechanics & Design, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 高等熱力學Advanced Thermodynamics | Semester | 3 | 熱流科技組Energy & Thermal Fluids進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 燃燒工程Combustion Engineering | Semester | 3 | 熱流科技組Energy & Thermal Fluids進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 有限元素法Finite Element Method  | Semester | 3 | 固力設計組Solid Mechanics & Design進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 光學原理 Principles of Optics | Semester | 3 | 製造科技組Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 黏性流體力學Viscous Fluid Flow | Semester | 3 | 熱流科技組Energy & Thermal Fluids進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 生醫微機電Bio Microelectromechanical Systems | Semester | 3 | 系統控制組、製造科技組System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 微尺度操控技術Manipulation of Micro-Scale Objects Using Microfluidics | Semester | 3 | 熱流科技組Energy & Thermal Fluids進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 機械製造分析Analysis of Mechanical Manufacturing | Semester | 3 | 製造科技組Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 智慧型機器人Intelligent Robots | Semester | 3 | 固力設計組、系統控制組Solid Mechanics & Design, System Control進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 高等金屬成型理論Advanced Theories of Metal Forming | Semester | 3 | 固力設計組、製造科技組Solid Mechanics & Design, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 應用塑性力學Applied Plasticity | Semester | 3 | 固力設計組、製造科技組Solid Mechanics & Design, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 光機電工程概論Introduction to Opto-Mechatronics | Semester | 3 | 製造科技組Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 現代控制工程Modern Control Engineering | Semester | 3 | 先修科目:自動控制Prerequisite: Automatic Control系統控制組System Control進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 伺服控制工程Servo Control Engineering | Semester | 3 | 先修科目:自動控制Prerequisite: Automatic Control系統控制組System Control進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 虛實整合數位化工廠Cyber-Physical Factory | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 數據分析與機器學習Data Analysis and Machine Learning | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 工具機製造品質工程Quality Engineering of Machine Tools and Manufacture | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 營運管理與製造執行系統Operation Management and Manufacturing Execution Systems | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 工具機系統設計分析Design and Analysis of Machine Tools | Semester | 3 | 固力設計組、系統控制組、製造科技組Solid Mechanics & Design, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 整線整合之伺服控制工程Servo Control Engineering in Integrated Production Line | Semester | 3 | 系統控制組System Control進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 複合製程整線智慧診斷Advanced Manufacturing Process Monitoring | Semester | 3 | 熱流科技組、系統控制組、製造科技組Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:大學Advanced courses, offered by: Undergraduate program. |
| 產線加工應用之誤差分析、量測與補償Error Analysis, Compensation, and Measurement for Precision Machines and Production Line | Semester | 3 | 固力設計組、系統控制組、製造科技組Solid Mechanics & Design, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 半導體製程設備與技術Semiconductor Manufacturing Equipment and Technology | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 無人機技術Drone Technologies | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |
| 機器學習運營與實踐Machine Learning Operations and Practice | Semester | 3 | 固力設計組、熱流科技組、系統控制組、製造科技組Solid Mechanics & Design, Energy & Thermal Fluids, System Control, Precision Manufacturing進階課程,開課單位:碩士Advanced courses, offered by: Master's program. |

**一般選修課程General Elective Courses**

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| Core Course Title | Semester/Year | Credits | Remarks |
| 經濟學Economics | Semester | 2 |  |
| 工程德文German for Engineers | Semester | 3 |  |
| 暑期產業實習Summer Industrial Practical Training | Semester | 3 |  |
| 生醫工程概論Introduction to Biomedical Engineering | Semester | 3 |  |
| 工程生物學Biology for Engineers and Computer Scientists | Semester | 3 |  |
| 工程英文English for General Engineering | Semester | 1 |  |
| 旋翼無人機的基礎與應用Fundamental and Application of Unmanned Aerial Vehicle in Multirotor  | Semester | 3 |  |