

國立彰化師範大學  
機電工程學系碩士班畢業條件表暨課程架構表  
(106學年度入學學生適用)

National Changhua University of Education  
Graduation Requirements and Course Structure for Master's Program of Mechatronics Engineering  
(Applicable for students in 106 academic year)

列印日期(Print Date:2025/11/10)

一.系必修課程

I.Department Required Courses

課程名稱 Course Name	學分/學時 Credit(s)/ Hour(s)	年級 Grade	學期 Semester
書報討論(一) Seminar I	1/2	1	1
書報討論(二) Seminar II	1/2	1	2
論文指導(一) Thesis Supervision I	3/0	2	1
論文 Thesis	0/0	2	2
論文指導(二) Thesis Supervision II	3/0	2	2

二.系選修課程

II.Department Elective Courses

課程名稱 Course Name	學分/學時 Credit(s)/ Hour(s)
共同選修 Common Elective	
科技英文(一) English for Science and Technology I	3/3
科技英文(二) English for Science and Technology II	3/3
科技英文寫作 Technical English Writing	3/3
數值分析 Numerical Analysis	3/3
共同核心(至少3學分) Common Core(3 credits is least required)	
光機電工程與應用 Opto-Mechatronic Engineering and Applications	3/3
機電控制核心選修 Mechatronics Control Core Electives	
有限元素分析 Finite Element Analysis	3/3
系統設計與動態分析 System Design and Dynamic Analysis	3/3

控制IC設計 Control IC Design	3/3
現代控制工程 Modern Control Engineering	3/3
智慧型控制系統設計 Intelligent Control System Design	3/3
結構動態與控制 Structure Dynamics & Control	3/3
電腦、通訊與控制 Computer, Communication, and Control	3/3
精密機械 Precision Machinery	3/3
實驗設計與工程分析 Experimental Design and Engineering Analysis	3/3
數位控制 Digital Control	3/3
機電系統整合設計 Mechatronics System Integration Design	3/3
<b>機電控制專業選修 Mechatronics Control Specialized Electives</b>	
CMOS 微機電系統設計與應用 Design and Application of CMOS MEMS	3/3
工具機系統設計分析 Machine Tool System Design and Analysis	3/3
工程分析 Engineering Analysis	3/3
可靠度工程(一) Reliability Engineering I	3/3
系統動態 System Dynamics	3/3
奈米結構製程(一) Nanostructure Fabrication I	3/3
人工智慧 Artificial Intelligence	3/3
互聯網系統設計 Internet System Design	3/3
可靠度工程(二) Reliability Engineering II	3/3
系統診斷技術 System Diagnosis Technology	3/3
奈米結構製程(二) Nanostructure Fabrication II	3/3
奈米機電系統 Nano-Electro-Mechanical Systems	3/3
奈微機電系統 Nano & Microelectromechanic System	3/3
高等動力學 Theoretical Dynamics	3/3
機械振動學 Mechanical Vibration	3/3

工程設計最佳化 Engineering Design Optimization	3/3
強健控制系統 Robust Control System	3/3
智慧型監控系統設計 Smart Monitor System Design	3/3
微位移與感測技術 Micro Positioning and Measurement	3/3
解析動態學 Analytical Dynamics	3/3
雷射加工系統設計 Design of the Laser Processing Systems	3/3
元件破壞分析方法與原理 Methodology and Theory of Component Failure Analysis	3/3
散熱模組設計與應用 Thermal Module Design and Application	3/3
精密工具機技術專題 Research Topic on Precision Machine Tools	3/3
精密運動控制 Precise Motion Control	3/3
模糊控制理論與應用 Fuzzy Control Theory and Applications	3/3
線性振動學 Linear Vibration	3/3
壓電元件設計 Design of Piezoelectric Devices	3/3
<b>光電應用核心選修 Optoelectronics Application Core Electives</b>	
太陽電池原理與製程 Principle and Process of Solar Cells	3/3
平面顯示器導論(一) Introduction to Flat Panel Display (I)	3/3
光電系統設計與應用 Application and Design of Optical Electronic System	3/3
應用電子學 Applied Electronics	3/3
光機系統設計 Opto-mechanical Systems Design	3/3
物理光學 Physical Optics	3/3
數位影像處理 Digital Image Processing	3/3
感測器與介面電路設計與應用 Design and Application of Sensors Interface Circuits	3/3
薄膜製程與應用 The film processes and applications	3/3
顯示元件物理 Display Device Physics	3/3
<b>光電應用專業選修 Optoelectronics Application Specialized Electives</b>	

P C I 介面電路設計 PCI Interface Circuitry Design	3/3
半導體製程 Semiconductor Processes	3/3
平面顯示器技術 Flat Panel Display Technology	3/3
光電半導體元件 Optoelectronic Semiconductor Devices	3/3
光電半導體材料與物理 Optoelectronic Semiconductor Materials and Physics	3/3
光學微影與蝕刻 Photolithography and Etching	3/3
平面顯示器導論(二) Introduction to Flat Panel Display (II)	3/3
生醫光電 Biophotonics	3/3
生醫微機電系統 Biomedical microelectromechanical systems	3/3
光電工程實務 Practical Electro-Optic Engineering	3/3
光學系統設計 Optical system design	3/3
有機發光二極體簡介 Introduction to OLED	3/3
奈微系統製程 Nano- and Microfabrication	3/3
單晶片控制與應用 Single Chip CPU Control & Application	3/3
無線通訊系統 Wireless Communication Systems	3/3
微波電路設計與量測 Microwave Circuit Design and Measurement	3/3
微波積體電路設計 Microwave Integrated Circuit Design	3/3
微感測技術與應用 Design and Applications of Microsensors	3/3
微機電顯示技術 MEMS Display Technology	3/3
電子封裝 Electronic Encapsulation	3/3
軟性電子 Flexible Electronics	3/3
電子商務自動化專題 E-commerce Automation	3/3
壓電材料製程及分析 Process and Analysis of Piezoelectric Materials	3/3
類比積體電路設計 Analog Integrated Circuit Design	3/3
觸控面板 Touch Panel	3/3

### 三.先修科目

#### III.Prequisite Courses

先修課程 Prerequisite Course	後修課程 Subsequent Course
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### 四.畢業條件

#### IV.Graduation Requirements

<p>1.最低畢業學分數：24學分（不含教育學程、論文、論文指導、書報討論）。</p> <p>2.畢業學分須含共同核心課程，並於機電控制核心選修課程或光電應用核心選修課程中任選至少3學分。</p> <p>3.修課經指導教授同意可選修外系或外校研究所開設科目（不限學期），至多6學分(選課前送教授同意表至系辦備查)。</p> <p>4.凡選修本系研究所開設科目（不限學期），一律承認為本系畢業學分。</p> <p>5.學生除須修滿應修學分外，同時須符合本系碩士班研究生畢業規定，方具備畢業資格。</p> <p>6.【研究生應於申請學位考試前修習通過於「臺灣學術倫理教育資源中心」(<a href="https://ethics.nctu.edu.tw/">https://ethics.nctu.edu.tw/</a>)網路教學平台之「學術研究倫理教育」課程】等相關規定。</p>
<p>1. Minimum graduation credits: 24 credits (excluding education programs, thesis, thesis supervision, and seminars).</p> <p>2. Graduation credits must include credits in common core course and at least 3 credits in mechatronic control core elective courses or optoelectronic application core elective courses.</p> <p>3. With the approval of the advisor, students may take up to 6 credits of courses offered by other departments or universities (regardless of the semester). (A consent form must be submitted to the department office for record before enrolling in the courses.)</p> <p>4. Any courses taken from this department's graduate programs (regardless of the semester) will be recognized as part of the department's graduation credits.</p> <p>5. Besides fulfilling the required credits, students must also meet the graduation requirements of the master's program of this department to qualify for graduation.</p> <p>6. Graduate students must complete and pass the "Academic Research Ethics Education" course provided by the "Taiwan Academic Ethics Education Resource Center" (<a href="https://ethics.nctu.edu.tw/">https://ethics.nctu.edu.tw/</a>) on its online teaching platform, among other related requirements, before applying for the degree examination.</p>