



		機光電與控制組/ 領域 Opto-Mechatronics and Control group	應修學分數 Number of 24Credits Needed	光電工程 Optoelectronic Engineering /3/3、線性系統 Linear System /3/3、最佳控制 Optimal Control /3/3、機電學 Principle of Mechatronics /3/3、幾何光學 Geometric optics/3/3、微系統特論 Special Topics On Microsystems /3/3、微感測器特論/3/3、精微機械加工特論 Special Topics On Microsensors /3/3、光學成像系統 Optical Imaging Systems /3/3、光電檢測 Opto-electronic measurement /3/3、強健控制 Robust Control /3/3、非線性控制 Nonlinear Control /3/3、電磁學 Electromagnetics /3/3、機電系統動力學 Dynamics of Mechatronic System /3/3、類神經網路 Neural Network /3/3、振動控制 Vibration Control /3/3、數位訊號處理 Digital Signal Processin /3/3、數位控制 Digital Control /3/3、進階電子學 Advanced Electronics /3/3、模糊系統與控制 Fuzzy System and Control /3/3、進階幾何光學 Advanced Geometrical Optics /3/3、光學照明系統 Optical Illumination Systems/3/3、半導體物理與元件 Semiconductor Physics and Devices/3/3、微感測器 Microsensor/3/3、適應控制 Adaptive Control /3/3、雷射加工專題 Special Topics On Laser Machining /3/3、壓電致動器原理與應用 Principle and Application of Piezoelectric Actuator /3/3、伺服晶片設計 Servo Chip Design /3/3、變結構控制 Variable Structure Control /3/3
		材料與能源組/能 源工程領域 Energy Engineering group	應修學分數 Number of 24Credits Needed	工程分析 Engineering Analysis /3/3、熱傳導學 Conductive Heat Transfer /3/3、計算流體力學 Computational Fluid Dynamics /3/3、量子力學 Quantum Mechanics /3/3、高分子加工 Polymer Processing /3/3、多相傳輸系統 Multiphase Flow /3/3、壓力容器安全工程 Safety Engineering of Pressure Vessel /3/3、紊流學 Turbulent Flow /3/3、黏性流體力學 Viscous Fluid Mechanics /3/3、微擾理論 Micro Turbulent Theory /3/3、可再生能源 Renewable Energy /3/3、多重物理分析 Multiphysics /3/3、平面顯示器原理與製程 Flat Panel Display Technology and Manufacturing /3/3、冷凍空調原理 Principles of Refrigeration and Air-conditioning /3/3、太陽能工程 Solar Engineering /3/3、對流熱傳學 Convective Heat Transfer /3/3、輻射熱傳學 Radial Heat Transfer /3/3、微觀熱傳 Micro Heat Transfer /3/3、熱傳增強原理 Heat Transfer Enhancement /3/3、
		材料與能源組/ 材料與奈米工程 領域 Material and Nanotechnology group	應修學分數 Number of 24Credits Needed	半導體製程與設備 Manufacturing Processes and Equipments of Semiconductor /3/3、高等物理冶金 Advanced Physical Metallurgy/3/3、奈米材料 Nano-materials /3/3、微系統工程 Microsystem Engineering /3/3、儀器分析 Instrumental Analysis /3/3、擴散理論 Diffusion Theory /3/3、電子顯微鏡（一）SEM (1) /3/3、電子顯微分析 Analysis of SEM /3/3、陶瓷材料 Ceramic Materials/3/3、微機電製程 Machining Process of MEMS /3/3、微奈米製造與檢測技術 Micro & Nano Fabrication and Measurement Technology /3/3、潤滑理論 Lubrication Theory /3/3、微觀力學 Micro Mechanics /3/3、微細加工技術 Micro Machining Technology /3/3、電子陶瓷 Electronic Ceramics /3/3、微機電材料 Material of MEMS /3/3、固態熱力學 Thermodynamics of Solid State /3/3、電子顯微鏡（二）SEM (2)/3/3、奈米工程 Nanotechnology /3/3、半導體元件與材料 Semiconductor Physics & materials /3/3、成形設備設計原理 Design Principles of Molding Machinery /3/3、微機電系統設計 MEMS(Micro-Electro-Mechanical-System) Design /3/3、材料破壞理論 Theory of Material Fracture /3/3、光電材料 Materials for Photo-electric Applications /3/3、X-光繞射分析 X-Ray Diffraction Analysis /3/3、X-光結晶學 X-ray crystallography /3/3
		國際組學程/領域 International group Program / Specialty	應修學分數 Number of 24Credits Needed	電腦輔助設計 Computer Aided Design /3/3、高分子材料加工 Polymer Material and Processing /3/3、最佳化設計 Optimum Design /3/3、製造系統工程 Manufacturing System Engineering /3/3、產品設計與製造 Product Design and Manufacture /3/3、電腦整合製造 Computer Integrated Manufacturing /3/3、機電學 Principle of Mechatronics /3/3、逆向工程 Reverse Engineering /3/3、模具設計 Die & Mold Design /3/3、知識管理 Topics on Knowledge /3/3、作業管理 Operation Management /3/3、機器學習 Machine learning /3/3、生產系統設計 Design of Production Systems /3/3、微細加工技術 Micro Machining Technology /3/3、材料特論 Specific Theory of Material/3/3、機構原理與設計 Theory and Design of Mechanisms /3/3、微機電製程 Machining Process of MEMS /3/3、精密金屬成型 Precision Metal Forming /3/3、有限元素法 Introduction to the Finite Element Method /3/3、靜壓潤滑 Hydrostatic Lubrication /3/3、研究方法 Research Methodology /3/3、機電整合 Mechatronics /3/3、科技管理 Management of Technology /3/3、系統性創新方法 Systemic Innovation /3/3、品質管理 Quality Contro /3/3、控制系統設計與模擬 Control System Design and Simulation /3/3、人工智慧 Artificial Intelligence Theory /3/3、/潤滑理論 Lubrication Theory 3/3、精密工具機設計原

				理 Design Principles of Precision Machine Tools /3/3、電子設計 Electronic Design /3/3、電路設計 Electrical Circuit Design /3/3、光電元件 Electronic Devices /3/3、配電自動化 Distribution Automation /3/3、機器人學 Introduction to Robotics /3/3、影像處理 Image processing /3/3、精密製造 Precision Manufacturing /3/3、光電工程 Photo-Electric Engineering /3/3、微機電系統工程 Micro-Electro-Mechanical Systems /3/3、模態分析 Modal Analysis /3/3
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**備註 Notes：**

- 一、畢業總學分數為 35 學分。Minimum credit required to graduate：35。
- 二、必修 11 學分，選修 24 學分。Required courses：11 credits; elective courses：24credits.
- 三、學生修讀所屬學院之「學院共同課程」應認列為本系專業課程學分；修讀所屬學院之「學院跨領域課程」或其他學院開課之課程，則認列為外系課程學分。Credits earned by students from the common courses offered by their respective colleges shall be accepted as their affiliated department's professional courses. However, credits earned from interdisciplinary courses offered either by their college or by other colleges will be accepted as credits earned from departments outside their own.
- 四、系所訂定條件（學程、檢定、證照、承認外系學分、擋修規定、各教學分組之畢業應修學分數及其他）：Departmental requirements (Ex: programs, certifications, licenses, recognition of external department credits, prerequisite requirements, Credits needed for each teaching division, and other requirements):
  - (一)國際組選修科目為全英文上課。Elective subjects for the international group are taught entirely in English.
  - (二)非本系開設之專業選修課程可承認 3 學分。唯修習智慧機電學院、工學院與電資學院全英文課程，最多承認 9 學分。  
Offered by other departments that a student takes, a maximum of 3 credits are recognized by the institute. As an exception, courses taught in English, which offered by College of Intelligent Mechanical and Electrical Engineering or College of Engineering or College of Electrical Engineering and Computer Science, could be recognized for up to 9 credits.
  - (三)本籍碩士生需修習一全英課程方取得畢業資格。Domestic master's degree students need to take a full English course to obtain graduation qualifications
  - (四)外籍生經指導教授許可，得選修校內所開設之全英授課課程且無學分限制，但須含智慧機電學院、工學院與電資學院之全英授課課程至少 16 學分以上。With the permission of thesis advisor, foreign students can take intramural English-taught courses. Among them, at least 16 credits should be offered by the College of Intelligent Mechanical and Electrical Engineering or College of Engineering or College of Electrical Engineering and Computer Science.