國立虎尾科技大學 109 學年度光電與材料科技碩/博士班/在職專班課程科目表

National Formosa University Institute of Electro-Optical and Materials Science

Curriculum for Master's and Doctor's Degrees

First Academic Year						
	First Semester			Second Semester		
Required Courses	碩士班 Master Program					
	Course Name	Credit	Hour	Course Name	Credit	Hour
	論文寫作與研討 1 Paper Study 1	0	2	論文寫作與研討 2 Paper Study 2	0	2
	書報討論 1 Seminar 1	0	2	書報討論 2 Seminar 2	0	2
	碩士外籍生 Foreign Student					
	華語教學 1（外籍生必修） Chinese Course 1	0	4	華語教學 2（外籍生必修） Chinese Course 2	0	4
	碩士在職專班 In-Service Master Program					
	書報討論 1 Seminar 1	0	2	書報討論 2 Seminar 2	0	2
	博士班 Doctoral Program					
	專題研討 1 Seminar 1	0	2	專題研討 2 Seminar 2	0	2
Elective Courses	半導體元件物理 Semiconductor Device Physics	3	3	化合物半導體工程 Compound Semiconductor Engineering	3	3
Elective Courses	積體光學 Integrated Optics	3	3	應用量子力學 Applied Quantum Mechanic	3	3
Elective Courses	平面顯示器 TFT 技術 Principle of TFT in Flat Panel Display	3	3	光纖通信網路 Optical Communication Networks	3	3
Elective Courses	微光學元件 Micro-Optics Devices	3	3	積體電路製程 Integrated Circuit Processing	3	3
Elective Courses	近代光學 Modern Optics	3	3	影像處理 Image Processing	3	3
Elective Courses	物理光學 Physical Optics	3	3	光學 Optics	3	3
Elective Courses	類比積體電路設計 Analog Integrated Circuit Design	3	3	矽晶圓光伏元件 Silicon Wafer Photovoltaic Devices	3	3
Elective Courses	太陽能電池 Solar cell	3	3	數值分析 Numerical Analysis	3	3
Elective Courses	磊晶技術與發光二極體 Epitaxial Technology and Light Emitting Diodes	3	3	光纖感測原理與應用 Principles and Applications of Fiber Optic Sensor	3	3
Elective Courses	薄膜物理 Thin Film Physics	3	3	繞射物理 Diffraction Physics	3	3
Elective Courses	有機光電元件 Organic Optoelectronic Devices	3	3	光電電磁學 Electro-Optics Electro-magnetics	3	3
Elective Courses	液晶顯示器工程 Liquid Crystal Engineering	3	3	光學設計 Optical System Design	3	3
Elective Courses	奈米光電元件 Nano-optoelectronics	3	3	直流轉換器原理 DC Converter Theory	3	3
Elective Courses	半導體材料與元件特性分析專論 Characterization of Semiconductor Materials and Devices	3	3	薄膜製程技術與薄膜材料分析 Thin Film Fabrication Technology and Material analysis	3	3
Elective Courses	前瞻光電材料與應用之開發 RD of Exploratory Photonic Materials and Applications	3	3	發光二極體材料與技術分析 Analysis of Light Emitting Diode Materials and Technologies	3	3
Elective Courses	微光學導論 Introduction to Micro-optics	3	3	數位相機技術 Digital Camera Technology	3	3
Elective Courses	光伏元件物理 Photovoltaic Device Physics	3	3	薄膜太陽能電池 Technology of Thin Film Solar Cells	3	3
Elective Courses	先進半導體物理與元件專論 Advances in Semiconductor Physics and Devices	3	3	電漿化學氣相沉積系統原理與應用 Fundamental Plasma CVD Process and its Application	3	3
Elective Courses	半導體元件量測技術 Semiconductor Devices Measurement Techniques	3	3	金氧半奈米元件 Metal-Oxide-Semiconductor Nano-devices	3	3
Elective Courses	新能源材料專論 Topic in New Energy Materials	3	3	高等通訊理論 Advanced Communication Theory	3	3
Elective	液晶顯示材料與應用	3	3	電漿製程技術之開發及應用	3	3

First Academic Year						
First Semester				**Second Semester**		
Courses	Liquid Crystal Materials and Applications			Plasma Deposition Technology and Applications		
Elective Courses	奈米電子學 Nanoelectronics	3	3	光學薄膜設計 Optical Thin Film Design	3	3
Elective Courses	光通訊系統原理 Principle of Optical Communication system	3	3	精密機械誤差量測技術 Precision Mechanical Error of Measurement Technology	3	3
Elective Courses	半導體製造技術 Semiconductor Manufacturing Technology	3	3	前瞻光電材料與元件 Exploratory Photonic Materials and Devices	3	3
Elective Courses	太陽能電池元件技術與分析 Solar Cell Devices Technology and Analysis	3	3	晶體光電元件工程 Crystal Electro-Optical Device Engineering	3	3
Elective Courses	數位訊號處理 Digital Signal Processing	3	3	光電系統設計 Electro-Optics System Design	3	3
Elective Courses	微機電系統 Micro Electro-Mechanical System	3	3	光纖感測技術 Technology of Fiber Optics Sensor	3	3
Elective Courses	LED 驅動電路設計與應用 LED Driving Circuit Design and Application	3	3	光電量測技術 Electro-optical Measurement Technology	3	3
Elective Courses	高密度分波長多工技術 DWDM Technology	3	3	嵌入式系統 Embedded System	3	3
Elective Courses	經典光學 Classcal Optics	3	3	傅氏光學 Introduction to Fourier Optics	3	3
Elective Courses	光電半導體元件 Optical Semiconductor Device	3	3	切換式電源供應器設計 Design of Switching Power Supply	3	3
Elective Courses	新型 LED 原理與應用 Modern LED Technologies and Applications	3	3	綠色光電材料開發與應用 Green Optoelectronic Materials and Devices	3	3
Elective Courses	矽晶圓光伏元件 Silicon Wafer Photovoltaic Devices	3	3	高效率矽基太陽能電池 High-efficiency silicon-based solar cells	3	3
Elective Courses	AMA 先進微控制器應用實作 AMA advanced microcontroller experiment	3	3	穿戴式感測器之基礎、實現與應用 Wearable Sensors Fundamentals, Implementation and Applications	3	3
Elective Courses	進階業界實習 Advanced Summer Internship	3	3	光觸媒材料與應用 Photo-Catalytic Materials and Applications	3	3
Elective Courses	有機顯示器技術與驅動電路設計 OLED Display Technology and Driver Design	3	3	工程倫理與專利實務 Engineering Ethics and Practical Patent	3	3
Elective Courses	專利商品化與育成創業輔導 Patent product and build new company under incubation	3	3	奈米光學特論 Special Topics in Nanophotonics	3	3
Second Academic Year						
First Semester				**Second Semester**		
Required Courses	碩士班外籍生 Foreign Student					
	Course Name	**Credit**	**Hour**	**Course Name**	**Credit**	**Hour**
	華語教學 3 Chinese Course 3	0	4	華語教學 4 Chinese Course 4	0	4

備註（Note）：	
碩士班（Master Program）：	博士班（Doctoral Program）：
1. 最低畢業學分： 30 學分，含必修學分（畢業論文）6 學分及選修學分 24 學分（選修學分含跨所選修學分）。 2. 碩士論文一科於畢業前一次評定，不必於選課單內填寫。 3. 論文寫作與研討課程不列入碩士在職專班。 4. 華語教學為外籍生必修課程，可抵免書報討論課程。	1. 選修科目至少選修 18 學分。 2. 畢業最低學分為 30 學分（含博士論文 12 學分）。
1. Minimum credits required: 30 credits with 6 required credits and 24 elective credits which may include some pre-approved inter-institution elective credits. 2. The subject “Master Thesis” will be appraised before graduation at a time; no need to fill it out in the Course Selection Sheet. 3. The courses on thesis writing and seminar are not listed in the In-Service Master Program. 4. Chinese learning class is the major for the foreign student. Foreign student takes Chinese learning class is equivalent to take the Seminar class.	1. At least 18 credits of elective courses should be studied. 2. At least 30 credits are required for graduation（including the 12 credits of Dissertation）