

國立虎尾科技大學動力機械工程系
機械與機電工程碩士班課程科目表
【114 學年度入學適用】

Department of Power Mechanical Engineering, National Formosa University
 Curriculum for Master's Program of Mechanical and Electro-Mechanical Engineering (2025)

113 年 12 月 23 日 113 學年度第 2 次系課程會議通過
 114 年 01 月 07 日 113 學年度第 5 次系務會議通過
 114 年 03 月 18 日 113 學年度第 3 次教務會議通過
 114 年 12 月 03 日 114 學年度第 1 次系課程會議通過
 114 年 12 月 03 日 114 學年度第 3 次系務會議通過
 115 年 1 月 7 日 114 學年度第 2 次教務會議修正通過

First Academic Year						
	First Semester			Second Semester		
	Course Name	Credit	Hour	Course Name	Credit	Hour
Required Courses 必修	Seminar 1 專題研討一	0	2	Seminar 2 專題研討二	0	2
	Mandarin (1) 華語教學(一) (Only for International Students)	0	4	Mandarin (2) 華語教學(二) (Only for International Students)	0	4
Elective Courses 選修	Thin Film Engineering 薄膜工程	3	3	Additive Manufacturing 積層製造學	3	3
	Numerical Method 數值方法	3	3	Convective Heat Transfer 熱對流	3	3
	Elasticity 彈性力學	3	3	Numerical Heat Transfer 數值熱傳	3	3
	Digital Image Processing 數位影像處理	3	3	Electric Motor Controls 電動機控制	3	3
	Design of Experiments 實驗設計	3	3	Computational Methods for Fluid Dynamics 計算流體力學	3	3
	Probability and Statistics 機率與統計	3	3	Mechanical Vibrations 機械振動學	3	3
	Electronic Equipment Cooling System 電子裝備散熱系統	3	3	Tribology Theory 磨潤原理	3	3
	Micro Electric Machine System (MEMS) 微機電系統	3	3	Linear System Analysis 線性系統分析	3	3
	Reliability Engineering Practice 可靠度工程實務	3	3	Finite Element Method 有限元素法	3	3
	System Interface and Integration Practices 系統介面與整合實務	3	3	Reliability Engineering 可靠度工程	3	3
	Advanced Vehicle Dynamics 高等車輛動力學	3	3	Heat Transfer Analysis and Experiment for Electro-optic Product Design 光電產品熱傳分析與實驗	3	3
	Design and Verification Technology for Automotive Electron 車輛電子設計與驗證技術	3	3	Systematic Innovation Design Theory 系統化創新設計理論	3	3

First Academic Year						
	First Semester			Second Semester		
	Course Name	Credit	Hour	Course Name	Credit	Hour
	Advanced Manufacturing 先進製造學	3	3	Heat Exchanger Design 熱交換器設計	3	3
	Design of Intelligent Agricultural Machinery 智慧農業機械設計	3	3	Product Competitive Analysis of High-tech Industry 高科技產業產品競爭力分析	3	3
	Engineering Optics 工程光學	3	3	Development of Intelligent Technology for Vehicle 車輛智慧化關鍵技術發展	3	3
	Optimum Design 最佳化設計	3	3	Artificial Intelligence and Its Applications 人工智慧與應用	3	3
	Sustainable Energy and Energy Saving Technology 永續能源與節能技術	3	3	Intelligent Control 智慧型控制	3	3
				Engineering Application of Bio-energy Based Heat and Power Generation 生質能熱電聯產工程應用	3	3

Second Academic Year						
	First Semester			Second Semester		
	Course Name	Credit	Hour	Course Name	Credit	Hour
Required Courses 必修	Thesis 1 碩士論文	3	0	Thesis 2 碩士論文	3	0
	Seminar 3 專題研討三	0	2	Seminar 4 專題研討四	0	2
Elective Courses 選修	Industrial R&D Off-Campus Internship 1 校外實習(產業研發一)	1	2	Industrial R&D Off-Campus Internship 2 校外實習(產業研發二)	1	2
	Special Topic on Machine Tools 工具機特論	3	3	Energy Conversion Principle 電能轉換原理	3	3
	Computer-aided Mold Design 電腦輔助模具設計	3	3	Mold Flow Computer Simulation 電腦輔助模流分析	3	3

備註:

1.最低畢業學分：30 學分。含必修學分(碩士論文)：6 學分；選修學分：24 學分。

2.選修外系所碩博士班課程至多 9 學分。外籍生不受學分數限制(限工程學院與電資學院開設課程)。

3.校外實習(產業研發一)(1 學分/2 小時)、校外實習(產業研發二)(1 學分/2 小時)可抵免專題研討三或專題研討四。

4.外國學生必修「華語教學(一)」及「華語教學(二)」，相關規定詳「外國學生修讀華語課程實施要點」。

5.選修華語教學可免修專題研討(限外籍生適用)。

Note :

1. **Minimum credit requirement to earn a master degree: Total 30 credits with 6 required credits (Thesis 1 and Thesis 2) plus 24 elective credits.**
2. **Only maximum 9 elective credits offered by other master's or doctoral programs are allowed. However, there is no credit limit set for foreign students if earned credits are from College of Engineering and College of Electrical and Computer Engineering.**
3. The Courses “Industrial Research and Development Internship 1 、 2” are capable of reaching Seminar 3 or 4 credits.
4. International Students of NFU are required to take "Mandarin (1)" and "Mandarin (2)" courses, for more details please refer to "Mandarin Course Requirements for NFU International Students"
5. Having passed any one course of "Mandarin (1) to (4)" can be applied for waiving the course of “Seminar”.
(Only for International Students)