元智大學機械工程學系碩士在職專班必選修科目表

（104學年度入學新生適用）

**List of Required and Elective Courses for Master Degree (Part Time) of the Department of Mechanical Engineering of Yuan Ze University**

**（Applicable to Students Admitted for Academic year of 2015-2016）**

104.04.22 一○三學年度第五次教務會議通過

105.06.22 一○四學年度第六次教務會議修訂通過

| 類別/組別Group | 課號Courses Number | 中文課名Courses Chinese Name | 英文課名Courses English Name | 學分數Credits |
| --- | --- | --- | --- | --- |
| Required Course | ME502 | 基礎數學 | Fundamentals of Mathematics | 3 |
| ME504 | 高等機械工程概論 | Advanced Mechanical Engineering | 3 |
| Elective Courses | EG501 | 統計實驗設計與應用 | Statistical Experimental Design and Application | 3 |
| EG502ME518 | 能源材料 | Energy Materials | 3 |
| ME506 | 真空薄膜製程與檢測技術 | Vacuum Process and Characterization of Thin Films Materials | 3 |
| ME508 | 微機電量測技術 | MEMS Measurement Technology | 3 |
| ME510 | 微致動器原理 | Theory of Micro Actuator | 3 |
| ME511 | 彈性力學 | Elasticity | 3 |
| ME512 | 薄膜原理與製程技術 | The Principles and Technologies of Thin Film | 3 |
| ME513 | 電腦輔助設計及製造 | Computer Aided Design and Manufacturing | 3 |
| ME515 | 微分方程 | Differential Equations | 3 |
| ME516 | 核能發電 | Nuclear Power Generation | 3 |
| ME517 | 有限元素法 | Finite Element Method | 3 |
| ME519 | 熱對流學 | Convective Heat Transfer | 3 |
| ME521 | 高等流體力學 | Advanced Fluid Mechanics | 3 |
| ME525 | 線性系統 | Linear Systems | 3 |
| ME526 | 連體力學 | Continuum Mechanics | 3 |
| ME527 | 最佳化設計 | Design Optimization | 3 |
| ME530 | 破壞力學 | Fracture Mechanics | 3 |
| ME532 | 振動學 | Vibration | 3 |
| ME533 | 兩相流 | Theory of Two-phase Flow  | 3 |
| ME534 | 高等熱傳學 | Advanced Heat Transfer | 3 |
| ME535 | 高等數值分析 | Advanced Numerical Analysis | 3 |
| ME536 | 燃燒學 | Combustion | 3 |
| ME537 | 自動飛行控制系統 | Automatic Flight Control System | 3 |
| ME538 | 計算流力及熱傳學 | Computational Fluid Dynamics and Heat Transfer | 3 |
| ME539 | 從物理學到生理學 | From Physics to Physiology: An Interdisciplinary Approach to Solve Biomedical Problems | 3 |
| ME540 | 自動化工程 | Automation and CIM | 3 |
| ME541 | 材料機械性質 | Mechanical Property of Materials | 3 |
| ME542 | 熱輻射 | Radiative Heat Transfer | 3 |
| ME543 | 高等工程材料 | Advanced Engineering Materials | 3 |
| ME544 | 微電腦與機械控制 | Microcomputers in Mechanical Systems | 3 |
| ME545 | 燃料電池專題 | Special Topic in Fuel Cell | 3 |
| ME547 | 多相流系統 | Multiphase Flows and Systems | 3 |
| ME549 | 電漿放電原理 | Principle of Plasma Discharge | 3 |
| ME550 | 幾何模型與電腦繪圖 | Geometric Modeling and Computer Graphics | 3 |
| ME551 | 高等製造工程與系統整合 | Advanced Manufacturing Technology and System Integration | 3 |
| ME553 | 電化學工程 | Electrochemical Engineering | 3 |
| ME554 | 板及殼原理 | Plate and Shell | 3 |
| ME555 | 黏滯流學 | Viscous Flow | 3 |
| ME556 | 高等工程數學 | Advanced Engineering Mathematics | 3 |
| ME557 | 非破壞檢測 | Non-Destructive Evaluation | 3 |
| ME558 | 數位控制 | Digital Control | 3 |
| ME561 | 污水處理設備設計 | Equipment Design for Waste Water Treatment | 3 |
| ME562 | 強健控制 | Robust Control | 3 |
| ME563 | 精密機械與量測 | Precision Engineering & Measurement | 3 |
| ME566 | 高等熱力學 | Advanced Thermodynamics | 3 |
| ME567 | 老人福祉科技 | Introduction to Gerontechnology | 3 |
| ME568 | 光電原理與應用 | Principles of Optoelectronics and Applications | 3 |
| ME570 | 焚化原理及技術 | Incineration | 3 |
| ME571 | 高等線性代數 | Advanced Linear Algebra | 3 |
| ME572 | 燃燒器設計與污染防治 | Combustor Design and Pollution Control | 3 |
| ME573 | 材料實驗方法 | Experimental Methods for Engineering Materials | 3 |
| ME574 | 燃料電池理論與數值分析 | Numeric Analysis for Fuel Cell Systems | 3 |
| ME575 | 電廠工程 | Power Plant Technology | 3 |
| ME577 | 防火工程 | Fire Protection Engineering | 3 |
| ME578 | 統計與資料分析 | Statistics and Data Analysis | 3 |
| ME579 | 高溫固態氧化物燃料電池 | High Temperature Solid Oxide Fuel Cell | 3 |
| ME580 | 材料疲勞損傷分析 | Fatigue of Engineering Materials | 3 |
| ME581 | 燃料電池技術與系統設計 | Fuel Cell Technology and System Design | 3 |
| ME583 | 推進系統概論與應用 | Rocket Propulsion System | 3 |
| ME584 | 新能源技術 | Advanced Technologies in Energy and its Applications | 3 |
| ME586 | 空氣污染控制設計 | Air Pollution Control Design | 3 |
| ME588 | 熱對流理論與設計應用 | Heat Transfer Theory and Design Applications | 3 |
| ME589 | 電子構裝力學分析 | Stress Analysis of Electronic Packaging | 3 |
| ME590 | 醫學工程原理與應用 | Principle and Applications of Biomedical Engineering | 3 |
| ME591 | 電子構裝失效模式分析 | Failure Modes in Electronic Packages | 3 |
| ME592 | 廢棄物處理特論 | Technology of Waste Treatment | 3 |
| ME594 | 微機電系統與技術檢測 | Micro-Electro Mechanical Systems and its testing Techniques | 3 |
| ME599 | 智慧控制系統 | Intelligent Control Systems | 3 |
| ME601 | 可壓縮流學 | Compressible Flow | 3 |
| ME603 | 複合材料力學 | Mechanics of Composite Material | 3 |
| ME607 | 實驗力學 | Experimental Mechanics | 3 |
| ME608 | 電子冷卻技術 | Electronic Cooling Techniques | 3 |
| ME610 | 創新產品設計 | Innovative Product Design | 3 |
| ME611 | 創新產品開發實務 | Innovative Product Development Practice | 3 |
| ME906 | 高溫氣體動力學 | High Temperature Gas Dynamics | 3 |
| ME924 | 誤差理論分析 | Error Theory Analysis | 3 |
| 備註Remarks | 1. 應符合以下其中之一項規定，始得畢業：
2. 撰寫技術性論文者：畢業學分數為36學分，除論文3學分外，需修畢必修及選修課程共33學分（其中本所課程至少21學分）。
3. 撰寫學術性論文者：畢業學分數為30學分，除論文6學分外，需修畢必修及選修課程共24學分(其中本所課程至少15學分)。
4. 選修本系大四課程，所上只承認二門課（6學分）。
5. 系統選課前須填寫指導教授「選課同意表」，並經指導教授同意後使可選課，若擅自更改科目，爾後系上不承認該學分時不得有異議。
6. 其他相關規定請參閱網址http://www.mech.yzu.edu.tw/各項法規/課業/研究所(碩士班)/ 碩士在職專班修業辦法。
7. Please choose one of two rules for graduation:
	1. Technical Thesis:

Minimum credits for graduation: 36 credits, including 33 credits from required and elective courses ( at least 21 credits must relate to Mechanical Engineering Master degree courses).* 1. Academic Thesis:

Minimum credits for graduation: 30 credits, including 24 credits from required and elective courses ( at least 15 credits must relate to Mechanical Engineering Master degree courses).1. The Mechanical Engineering department admits only two fourth year undergraduate courses (i.e. 6 credits) for elective courses.
2. Before you register courses on the portal system, you should turn in Advisor Approval Courses Form. To avoid the dispute, you cannot change the form without your advisor approval.
3. Others rules refer to http://www.mech.yzu.edu.tw/menu/index/id/10141.
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