元智大學機械工程學系碩士在職專班必選修科目表

（110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 2021-2022）**

110.05.05 一○九學年度第五次教務會議通過

Passed by the 5th Academic Affairs Meeting, Academic Year 2020, on May 05, 2021

110.11.24 一一○學年度第二次教務會議修訂通過

Amended by the 2nd Academic Affairs Meeting, Academic Year 2021, on November 24, 2021

| 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 |
| --- | --- | --- | --- | --- |
| 必修Required Course | ME502 | 基礎數學 | Fundamentals of Mathematics | 3 |
| ME504 | 高等機械工程概論 | Advanced Mechanical Engineering | 3 |
| 選修Elective Courses | ME508 | 微機電量測技術 | MEMS Measurement Technology | 3 |
| ME511 | 彈性力學 | Elasticity | 3 |
| ME515 | 微分方程 | Differential Equations | 3 |
| ME517 | 有限元素法 | Finite Element Method | 3 |
| ME522 | 電腦輔助實務分析與應用 | Computer Aided Analysis for Mechanical Design | 3 |
| ME525 | 線性系統 | Linear Systems | 3 |
| ME527 | 最佳化設計 | Design Optimization | 3 |
| ME532 | 振動學 | Vibration | 3 |
| ME534 | 高等熱傳學 | Advanced Heat Transfer | 3 |
| ME535 | 高等數值分析 | Advanced Numerical Analysis | 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 |
| ME541 | 材料機械性質 | Mechanical Behavior of Materials | 3 |
| ME544 | 微電腦與機械控制 | Microcomputers in Mechanical 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 |
| ME553 | 電化學工程 | Electrochemical Engineering | 3 |
| ME556 | 高等工程數學 | Advanced Engineering Mathematics | 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 |
| ME567 | 老人福祉科技 | Introduction to Gerontechnology | 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 |
| 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 |
| 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 |
| 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 |
| ME600 | 電腦視覺 | Computer Vision | 3 |
| ME601 | 可壓縮流學 | Compressible Flow | 3 |
| ME602 | 機器人學 | Robotics | 3 |
| ME603 | 複合材料力學 | Mechanics of Composite Material | 3 |
| ME606 | 智慧製造 | Intelligent Manufacturing | 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 |
| ME612 | 半導體製程技術導論 | Introduction to Semiconductor Manufacturing Technology | 3 |
| ME613 | 人工智慧 | Artificial Intelligence | 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，需修畢必修及選修研究所課程共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，需修畢必修及選修研究所課程共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. 入學研究生須依本校學術研究倫理教育課程實施要點規定，於入學第一學期結束前完成學術研究倫理教育課程，最遲須於申請學位口試前補修完成，未完成本課程，不得申請學位口試。
7. 其他相關規定請參閱網址http://www.mech.yzu.edu.tw/學生事務/修業辦法。
8. 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. All graduate students should fill out “Advisor Approval Courses Form” and be approved by the advisor before register any courses on the portal system. The form cannot be changed by yourself to avoid disputes.
3. Based on the regulations of Yuan Ze University Academic Research Ethics Education Course Implementation Highlights, all graduate students should complete **Academic Research Ethics Education Course** by the end of first semester. The deadline for the course completion has to be the date before the application of thesis oral defense. "No Course and No Defense."
4. Others rules refer to http://www.mech.yzu.edu.tw/.
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