元智大學機械工程學系博士班必選修科目表

（114學年度入學新生適用）

**Department of Mechanical Engineering, Yuan Ze University**

**List of Required and Elective Courses for Doctoral Program**

**（Applicable to Students Admitted in Academic Year of 2025）**

114.04.23 一一三學年度第五次教務會議通過

Passed by the 5th Academic Affairs Meeting, Academic Year 2024, on April 23, 2025

| 類別/組別Group | 課號Course code | 中文課名Course Title | 英文課名Course Title | 學分數Credits |
| --- | --- | --- | --- | --- |
| 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 |
| 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 |
| 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 |
| ME614 | 電力系統整合概論 | Introduction to Power System Integration | 3 |
| ME615 | 汽車產業理論與實務應用 | Theory and Practice of Automobile Industry | 3 |
| 備註Remarks全文完 | 1. 最低畢業學分數：30學分。除論文(6學分)外，其中至少需修畢列於本表12學分之選修課程，其餘學分數經指導教授同意後，可修習外所（限研究所）課程。
2. 外籍生除論文外，必須修滿經指導教授認可之選修課程24學分（限研究所）。
3. 博士班學生選修碩士在職專班之課程，不列入畢業學分，須填寫「元智大學課程跨學制申請表」。
4. 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。
5. 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。
6. 相關規定請參閱網址http://www.mech.yzu.edu.tw/學生事務/修業辦法。
7. Minimum credits for graduation are 30 credits (including 6 credits for thesis). Please take 12 credits from the above list, and the rest of credits are approved by the advisor. You can register graduate courses from ME department and other departments.
8. Foreign students take not only thesis, but also elective courses with 24 credits approved by your advisor.
9. PhD students taking In-service graduate courses are not allowed to be counted as graduation credits. Students who would like to apply for Cross-System Courses need to fill in the "Application for Cross-System Courses" form.
10. 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.
11. 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."
12. Other rules refer to <http://www.mech.yzu.edu.tw/.>
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