**元智大學機械工程學系碩士班必選修科目表**

**（112學年度入學新生適用）**

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

**（Applicable to Students Admitted for Academic year of 2023-2024）**

112.04.19 一一一學年度第六次教務會議通過

Passed by the 6th Academic Affairs Meeting, Academic Year 2022, on April 19, 2023

112.05.31 一一一學年度第七次教務會議通過

Amended by the 7th Academic Affairs Meeting, Academic Year 2022, on May 31, 2023

113.05.01 一一二學年度第八次教務會議修訂通過

Amended by the 8th Academic Affairs Meeting, Academic Year 2023, on May 01, 2024

| 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 |
| --- | --- | --- | --- | --- |
| 數學課程 | ME515 | 微分方程 | Differential Equations | 3 |
| ME535 | 高等數值分析 | Advanced Numerical Analysis | 3 |
| ME556 | 高等工程數學 | Advanced Engineering Mathematics | 3 |
| ME571 | 高等線性代數 | Advanced Linear Algebra | 3 |
| ME578 | 統計與資料分析 | Statistics and Data Analysis | 3 |
| 熱流能源與綠色科技課程Energy Science and Green Technologies  | ME534 | 高等熱傳學 | Advanced Heat Transfer | 3 |
| ME538 | 計算流力及熱傳學 | Computational Fluid Dynamics and Heat Transfer | 3 |
| ME549 | 電漿放電原理 | Principle of Plasma Discharge | 3 |
| ME553 | 電化學工程 | Electrochemical Engineering | 3 |
| ME561 | 污水處理設備設計 | Equipment Design for Waste Water Treatment | 3 |
| ME570 | 焚化原理及技術 | Incineration | 3 |
| ME572 | 燃燒器設計與污染防治 | Combustor Design and Pollution Control | 3 |
| ME574 | 燃料電池理論與數值分析 | Numeric Analysis for Fuel Cell Systems | 3 |
| ME577 | 防火工程 | Fire Protection Engineering | 3 |
| ME579 | 高溫固態氧化物燃料電池 | High Temperature Solid Oxide Fuel Cell | 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 |
| ME601 | 可壓縮流學 | Compressible Flow | 3 |
| ME608 | 電子冷卻技術 | Electronic Cooling Techniques | 3 |
| 尖端材料與應用力學課程Advanced Material and Applied Mechanics | ME511 | 彈性力學 | Elasticity | 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 |
| ME532 | 振動學 | Vibration | 3 |
| ME541 | 材料機械性質 | Mechanical Behavior of Materials | 3 |
| ME573 | 材料實驗方法 | Experimental Methods for Engineering Materials | 3 |
| ME580 | 材料疲勞損傷分析 | Fatigue of Engineering Materials | 3 |
| ME589 | 電子構裝力學分析 | Stress Analysis of Electronic Packaging | 3 |
| ME603 | 複合材料力學 | Mechanics of Composite Material | 3 |
| 精密機電與生醫系統課程Precision Mechatronics and Biomechanical Systems  | ME508 | 微機電量測技術 | MEMS Measurement Technology | 3 |
| ME525 | 線性系統 | Linear Systems | 3 |
| ME527 | 最佳化設計 | Design Optimization | 3 |
| ME539 | 從物理學到生理學 | From Physics to Physiology: An Interdisciplinary Approach to Solve Biomedical Problems | 3 |
| ME544 | 微電腦與機械控制 | Microcomputers in Mechanical Systems | 3 |
| ME550 | 幾何模型與電腦繪圖 | Geometric Modeling and Computer Graphics | 3 |
| ME562 | 強健控制 | Robust Control | 3 |
| ME567 | 老人福祉科技 | Introduction to Gerontechnology | 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 |
| ME602 | 機器人學 | Robotics | 3 |
| ME606 | 智慧製造 | Intelligent Manufacturing | 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. 最低畢業學分數：30學分（包含6學分論文）。
2. 選修科目：至少需修畢研究所課程24學分，本表選修課程至少18學分。
3. 碩士班/碩專班跨學制修課之學分數准予納入畢業學分。欲跨學制修課之學生，須填寫「元智大學課程跨學制申請表」，跨學制修課之學分數准予納入畢業學分至多6學分。
4. 外籍生(不含僑生及陸生)~~免修書報討論，~~除論文外，必須修滿經指導教授認可之選修課程24學分（限研究所課程）。
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。
	1. Minimum credits for graduation are 30 credits (including 6 credits for thesis).
	2. At least take 24 credits for elective courses. 18 credits out of the 24 credits are related to the mechanical engineering courses.
	3. Students who would like to apply for Cross-System Courses need to fill in the "Application for Cross-System Courses" form. Credits taken across academic systems are  allowed to be counted as graduation credits, up to a maximum of 6 credits.
	4. Foreign students take not only thesis, but also elective courses with 24 credits approved by your advisor.
	5. 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.
	6. 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."
	7. Other rules refer to [http://www.mech.yzu.edu.tw/](http://www.mech.yzu.edu.tw/menu/index/id/10141) .
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