**元智大學機械工程學系碩士班必選修科目表**

**（114學年度入學新生適用）**

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

**List of Required and Elective Courses for Master 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 |
| --- | --- | --- | --- | --- |
| 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 |
| ME575 | 電廠工程 | Power Plant Technology | 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 |
| ME614 | 電力系統整合概論 | Introduction to Power System Integration | 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 |
| ME615 | 汽車產業理論與實務應用 | Theory and Practice of Automobile Industry | 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)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) . | | | | |

AA-CP-04-CF03 (1.3版)／113.12.16修訂

AA-CP-04-CF06 (1.3版)／113.12.16修訂

元智大學機械工程學系碩士在職專班必選修科目表

（114學年度入學新生適用）

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

**List of Required and Elective Courses for In-service Master Program**

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

108.05.01 一○七學年度第六次教務會

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 |
| --- | --- | --- | --- | --- |
| 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 |
| 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 | 1. 最低畢業學分數：30學分（包含3學分技術論文）。 2. 選修科目：至少需修畢研究所課程27學分，本表選修課程至少15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. 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. 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。 7. Minimum credits for graduation are 30 credits (including 3 credits for thesis). 8. At least take 27 credits for elective courses. 21 credits out of the 27 credits are related to the mechanical engineering courses. 9. 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. 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. Others rules refer to http://www.mech.yzu.edu.tw/. | | | |

AA-CP-04-CF03 (1.3版)／113.12.16修訂

AA-CP-04-CF06 (1.3版)／113.12.16修訂

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/.> | | | |

AA-CP-04-CF04 (1.3版)／113.12.16修訂

AA-CP-04-CF07 (1.3版)／113.12.16修訂

元智大學機械工程學系 專業課程英語授課科目表

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

**List of Courses taught in English**

（114學年度入學新生適用Academic Year 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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 課號  Course Number | 中文課名  Course Name | 英文課名  Course Name | 學分數  Credits | 開課學期  Semester | 備註  Remarks |
| ME128 | 應用力學-靜力 | Applied Mechanics Statics | 2 | 一上 | 與工院英專合班上課 |
| ME202 | 工程數學(一) | Engineering Mathematics (I) | 3 | 二上 | 與工院英專合班上課 |
| ME204 | 工程數學(二) | Engineering Mathematics (II) | 3 | 二下 | 與工院英專合班上課 |
| ME206 | 熱力學(一) | Thermodynamics(I) | 3 | 二上 | 與工院英專合班上課 |
| ME309 | 材料力學 | Mechanics of Material | 3 | 二下 | 與工院英專合班上課 |
| ME207 | 機動學 | Mechanisms | 3 | 二下 | 與工院英專合班上課 |
| ME335 | 自動控制 | Automatic Control | 3 | 三上 | 與工院英專合班上課 |
| **ME306** | **機械設計**(一) | **Mechanical Design**(I) | **3** | **三上** |  |
| **ME310** | **機械設計**(二) | **Mechanical Design**(II) | **3** | **三下** |  |
| **ME305** | **流體力學** | **Fluid Mechanics** | **3** | **三上** |  |
| **ME322** | **熱傳學** | **Heat Transfer** | **3** | **三下** |  |

AA-CP-04-CF13 (1.2版)／113.05.07修訂

**元智大學機械工程學系 輔系科目表**

**(114學年度入學新生適用)**

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

**List of Minor Courses**

**（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

| 輔系名稱  Minor Title | 輔系科目（課號/中文課名/英文課名）  Course Title (Course Code/Chinese Course Title/English Course Title) | 學分數  Credits | 備註  Remarks |
| --- | --- | --- | --- |
| 機械工程學系  Department of Mechanical Engineering | ME128應用力學-靜力  Applied Mechanics Statics | 2 | 必修  Required Courses |
| ME214應用力學-動力  Applied Mechanics Dynamics | 3 |
| ME207機動學  Mechanisms | 3 |
| ME206熱力學（一）  Thermodynamics (I) | 3 |
| ME306機械設計（一）  Mechanical Design (I) | 3 |
| ME305流體力學  Fluid Mechanics | 3 |
| 共計  Total | 17 |
| ME115工程材料  Engineering Materials | 3 | 選修  Elective Courses（至少需修滿3學分（含）以上  At least take 3 credits above） |
| ME210熱力學（二） Thermodynamics (II) | 3 |
| ME309材料力學  Mechanics of Material | 3 |
| ME310機械設計（二）  Mechanical Design (II) | 3 |
| ME119工程圖學  Engineering Graphics | 2 |
| ME335自動控制  Automatic Control | 3 |
| ME303機械製造  Introduction to Manufacturing Processes | 3 |
| ME475機械畫  Mechanical Drawing | 2 |
| ME224電路及電子學  Introduction to Electric Circuits and Electronics | 3 |
| ME345數值分析  Numerical Analysis | 3 |
| 共計  Total | 28 |

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註：本系輔系最低須修滿**20**學分，且每科皆需達到60分以上。

P.S.: Must earn at least 20 credits for Minor Courses of ME department and each course needs more than 60 points.