**元智大學工業工程與管理學系碩士班 必修科目表**

**（113學年度入學新生適用）**

**List of Required Courses for Master Program of**

**Industrial Engineering and Management at Yuan Ze University**

**（Applicable to Students Admitted for the Academic year of 2024-2025）**

113.05.01 一一二學年度第八次教務會議通過

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 學年(Year)  學期(Semester) | 第一學年1st Year | | 第二學年2nd Year | |
| 上學期  Fall Semester | 下學期  Spring Semester | 上學期  Fall Semester | 下學期  Spring Semester |
| 必修  科目  Required Course  (2) | 書報討論  (Seminar)  IE586  (2) |  |  |  |
| 學分小計  Total credits | 2 | 0 | 0 | 0 |
| 備 註  Remarks | * **修業規定 (Regulations for Course Selection)：** * 本所碩士班最低畢業總學分數為32學分，包含2學分必修課、24學分選修課、及6學分碩士論文。   The minimum total credits required for graduation for the master's program is 32 credits, including 2 credits of a required course, 24 credits of elective courses, and 6 credits of the master's thesis.   * 選修課中須於「決策最佳化與全球運籌管理」或「智慧型生產與大數據分析」擇一類作為主修且至少選修4門課(12學分)，另一類為副修至少選修2門課(6學分)，共計6門課(18學分)；其餘6學分可自由選修。   Among the elective courses, students are required to choose one of the two categories, either " Optimization and Global Logistics Management" or "Intelligent Manufacturing and Big Data Analysis," as their primary focus and take at least 4 courses (12 credits) from that category. The other category will be taken as a secondary focus, and students must take at least 2 courses (6 credits) from it, making a total of 6 courses (18 credits). The remaining 6 credits can be freely chosen from any other courses.   * 選修非本系之課程，需先經指導教授及所長同意，且以9學分為上限。   Students must obtain the consent of their advisor and the department chair before taking elective courses from other departments, with a maximum of 9 credits.   * 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。   Students who wish to take courses across different academic programs must fill out the "Cross-System Courses Application Form" provided by Yuan Ze University. A maximum of 6 credits of such courses may be counted toward graduation.   * 外籍生(不含僑生及陸生)得免修「IE586書報討論」，但仍需滿足最低畢業學分數之要求。   Foreign students (excluding overseas Chinese and students from Mainland China) are exempt from taking the course "IE586 Seminar." However, they still need to fulfill the minimum required credits for graduation.   * 大學部非工業工程相關學系之畢業生，須選擇以下A方案或B方案進行課程補修(研究所課程可採計為畢業學分)：   For undergraduate graduates from non-industrial engineering-related departments, they must choose either Option A or Option B for remedial courses (graduate courses may be counted toward graduation credits): | | | |

|  |  |
| --- | --- |
| 備 註  Remarks | A、選修大學部「IE335生產計劃與管理（一）」課程及下列研究所課程中的任一科：「IE531高等品質管制」、「IE533機率分析」或「IE538實驗設計」。  B、選修大學部「IE350品質管制（含實驗）」課程及下列研究所課程中的任一科：「IE534生產排程」、「IE543生產計劃」或「IE593高等生產管制」。  Option A: one undergraduate course “IE335 Production Planning and Control I” and one from the following graduate courses: “IE531 Advanced Quality Control,” “IE533 Probabilistic Analysis,” or “IE538 Experimental Design.”  Option B: one undergraduate course “IE350 Quality Control (including experiments)” and one from the following graduate courses: “IE534 Production Scheduling,” “IE543 Production Planning,” or “IE593 Advanced Production Control.”   * 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。   All graduate students shall complete Academic Research Ethics Education Course before the end of their first academic semester, according to the Yuan Ze University Academic Research Ethics Education Course Implementation Guideline. Students not passing the Academic Research Ethics Education Course cannot apply for their academic degree exam.   * **碩士論文提案考試 (Thesis Proposal Examination )：**   碩士生需於研究所第一學期開學後一個月內選定指導教授，並繳交指導教授同意書至系辦公室。論文提案審查委員會由本所二人（含指導教授）專任助理教授級以上教師組成，針對論文提案進行審查口試及專業領域相符性檢核，論文提案與畢業論文口試至少需間隔二個月以上。  Master students are required to select an advisor and submit an advisor agreement form to the department office within one month after the start of their first semester. The thesis proposal review committee, composed of two full-time assistant professors or above (including the advisor), will review and examine the thesis proposal and its relevance to the Industrial Engineering and Management professional field. The thesis proposal examination and master degree examination must be held at least two months apart.   * **碩士學位考試 (Master Degree Examination)：**   畢業論文口試依校方規定期限內完成「研究生學位考試線上申請」，碩士學位考試委員會置委員三至五人；學生應於學位考試前完成論文原創性比對作業，比對報告標準以不超過20%為原則，並於學位考試當日將「學位論文原創性比對報告書」送交指導教授及學位考試委員參考，進行畢業論文口試及專業領域相符性檢核。完成學位考試後，研究生需再次將最終定稿的論文進行原創性比對作業，並由指導教授確認後，將「學位論文定稿原創性比對檢核表」、「學位論文原創性比對報告書」、及論文送交系辦公室備查。學位考試其他未盡事宜，悉依本校「學則」暨「碩、博士班研究生學位考試細則」辦理。  The master degree examination must be completed within the deadline specified by the university by submitting an online application for the examination. The master's degree examination committee consists of three to five members. Before the degree examination, the student should complete the originality check for the thesis, and the standard for the comparison report is not to exceed 20%. On the day of the degree examination, the student should submit the "Originality Check Report of the Thesis" to the advisor and the degree examination committee for reference, and undergo the thesis defense and professional field compatibility check. After completing the degree examination, the student should conduct an originality check on the final version of the thesis again. After the advisor confirms it, the "Originality Check Form for Thesis Final Draft," "Originality Check Report of the Thesis," and the thesis should be submitted to the department office for record. Any other matters related to the degree examination shall be handled in accordance with the university's "Academic Regulations" and "Graduate Degree Examination Regulations for Master's and Doctoral Programs." |

**元智大學工業工程與管理學系碩士班 選修科目表**

**（113學年度入學新生適用）**

**List of Elective Courses for Master Program of**

**Industrial Engineering and Management at Yuan Ze University**

**（Applicable to Students Admitted for the Academic year of 2024-2025）**

113.05.01 一一二學年度第八次教務會議通過

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

113.11.20 一一三學年度第二次教務會議修訂通過

Amended by the 2nd Academic Affairs Meeting, Academic Year 2024, on November 20, 2024

|  |  |  |  |
| --- | --- | --- | --- |
| **選修類別：決策最佳化與全球運籌管理**  Category: Optimization and Global Logistics Management | | | |
| 課號 | 中文課名 | 英文課名 | 學分數 |
| IE503 | 模擬學★ | Simulation | 3 |
| IE507 | 數學規劃（一）★ | Mathematical Programming (I) | 3 |
| IE518 | 時間序列分析★ | Time Series Analysis and Forecasting | 3 |
| IE520 | 田口式品質工程 | Taguchi Quality Engineering | 3 |
| IE533 | 機率分析★ | Probabilistic Analysis | 3 |
| IE537 | 高等設施規劃 | Advanced Facilities Planning | 3 |
| IE538 | 實驗設計★ | Experimental Design and Applications | 3 |
| IE541 | 決策分析 | Decision Analysis | 3 |
| IE576 | 全球運籌管理 | Global Logistics Management | 3 |
| IE579 | 運輸管理★ | Transportation Management | 3 |
| IE581 | 服務系統設計★ | Service System Design | 3 |
| IE591 | 物流系統 | Analysis of Material Flows and Distribution System | 3 |
| IE600 | 系統工程 | System Engineering | 3 |
| IE605 | 多變量分析 | Multivariate Analysis | 3 |
| IE607 | 啟發式最佳化★ | Heuristic Optimization | 3 |
| IE610 | 行動電子商務 | Mobile Commerce | 3 |
| IE613 | 供應鏈管理專題★ | Topics in Supply Chain Management | 3 |
| IE615 | 模糊工程與資訊 | Fuzzy Engineering and Information | 3 |
| IE618 | TFT-LCD產業分析與個案探討 | TFT-LCD Industry Analysis and Case Study | 3 |
| IE622 | 卓越經營管理★ | Managing for Business Excellence | 3 |
| IE630 | 進階專案管理★ | Advanced Project Management | 3 |
| IE631 | 永續發展 | Sustainable Development | 3 |

| **選修類別：智慧型生產與大數據分析**  Category: Intelligent Manufacturing and Big Data Analysis | | | |
| --- | --- | --- | --- |
| 課號 | 中文課名 | 英文課名 | 學分數 |
| IE508 | 人工智慧與專家系統專題 | Artificial Intelligence and Expert System Topics | 3 |
| IE510 | 電腦繪圖 | Computer Graphics | 3 |
| IE517 | 存貨系統與管制★ | Inventory Systems and Control | 3 |
| IE524 | 工程管理系統 | Engineering Management Systems | 3 |
| IE531 | 高等品質管制★ | Advanced Quality Control | 3 |
| IE534 | 生產排程★ | Production Scheduling | 3 |
| IE543 | 生產計劃 | Production Planning | 3 |
| IE544 | 電腦輔助設計與製造（一） | Computer-Aided Design and Manufacturing (I) | 3 |
| IE562 | 3D視覺模擬和虛擬實境★ | 3D Visual Simulation and Virtual Reality | 3 |
| IE565 | 人因工程 | Human Factors | 3 |
| IE566 | 可靠度工程 | Reliability Engineering | 3 |
| IE571 | 高等工程經濟 | Advanced Engineering Economics | 3 |
| IE574 | 資料視覺★ | Data Visualization | 3 |
| IE590 | 機器視覺應用★ | Machine Vision | 3 |
| IE592 | 及時生產系統 | Just-in-Time Production System | 3 |
| IE593 | 高等生產管制 | Advanced Production Control | 3 |
| IE599 | 資料探勘★ | Data Mining | 3 |
| IE614 | 資料模式辨識與分類★ | Data Pattern Recognition and Classification | 3 |
| IE619 | 虛擬實境系統設計與建構★ | Design and Construction of Virtual Reality Systems | 3 |
| IE623 | 人因設計 | Ergonomic Design | 3 |
| IE624 | 優使性工程★ | Usability Engineering | 3 |
| IE625 | 巨量資料分析 | Big Data Analytics | 3 |
| IE626 | 物聯網概論與實務★ | Introduction and Practice of Internet of Things (IoT) | 3 |
| IE627 | 區塊鏈原理與實務★ | Blockchain Principles and Practices | 3 |
| IE628 | 巨量資料分析(一) | Big Data Analytics (I) | 3 |
| IE629 | 巨量資料分析(二) | Big Data Analytics (II) | 3 |
| IE632 | 智慧製造 | Smart Manufacturing | 3 |
| IE633 | 生成式AI與大語言模型 | Generative AI and Large Language Model | 3 |

|  |  |  |  |
| --- | --- | --- | --- |
| **選修類別：基礎共同**  Category: Common Courses | | | |
| 課號 | 中文課名 | 英文課名 | 學分數 |
| IE608 | 科技英文★ | Technical Writing | 3 |
| IE999 | 研究方法論 | Research Methodology | 3 |

註：「★」表示可能以英語授課

Note: ★ indicates the course might be offered in English

**Master's Program Regulations**

**for the Department of Industrial Engineering and Management at Yuan Ze University**

Passed by the 15th the Department of Industrial Engineering and Management Meeting, on July 10, 2023

**Article 1:** The requirements and procedures for admission to the Master's Program of this department shall refer to the Master's Program Admission Brochure of this university for that academic year (hereinafter referred to as "graduate students").

**Article 2:** The duration of study for graduate students of this department is limited to a minimum of one year and a maximum of four years.

**Article 3:** The course and credit requirements for the Master's Program of this department are as follows:

1. The minimum total credits required for graduation are 32 credits, including 2 credits for required courses, 24 credits for elective courses, and 6 credits for the master's thesis.
2. Among the elective courses, students are required to choose one of the two categories, either " Optimization and Global Logistics Management" or "Intelligent Manufacturing and Big Data Analysis," as their primary focus and take at least 4 courses (12 credits) from that category. The other category will be taken as a secondary focus, and students must take at least 2 courses (6 credits) from it, making a total of 6 courses (18 credits). The remaining 6 credits can be chosen freely.
3. Taking courses from other department requires the approval of the thesis advisor and the department chair, with a maximum of 9 credits.
4. Graduate students who wish to take courses across academic programs must fill out the " Application for Cross-System Courses" form. A maximum of 6 credits of such courses may be counted toward graduation credits.
5. Foreign students (excluding overseas Chinese and students from Mainland China) are exempt from taking the course "IE586 Seminar." However, they still need to fulfill the minimum required credits for graduation.

**Article 4:** For students with bachelor’s degrees from non-industrial engineering-related departments, they must choose either Option A or Option B for remedial courses (graduate courses may be counted toward graduation credits):

Option A: undergraduate course “IE335 Production Planning and Control I” and one of the following graduate courses: “IE531 Advanced Quality Control,” “IE533 Probabilistic Analysis,” or “IE538 Experimental Design.”

Option B: undergraduate course “IE350 Quality Control (including experiments)” and one of the following graduate courses: “IE534 Production Scheduling,” “IE543 Production Planning,” or “IE593 Advanced Production Control.”

**Article 5:** All graduate students shall complete Academic Research Ethics Education Course before the end of their first academic semester, according to the Yuan Ze University Academic Research Ethics Education Course Implementation Guideline. Students not passing the Academic Research Ethics Education Course cannot apply for their academic degree exam.

**Article 6:** Graduate students must select a thesis advisor within one month after the start of the first semester of the graduate program and submit an agreement form signed by the advisor to the department office. The thesis proposal review committee consists of two full-time assistant, or higher-ranking, professors of this department (including the thesis advisor). They will conduct an oral examination of the thesis proposal and professional field conformity verification. There should be a minimum gap of two months between the thesis proposal oral examination and the graduate degree examination.

**Article 7:** Graduate students must complete the online application for "Graduate Degree Examination" within the designated timeframe according to the university's regulations. The Master's Degree Examination Committee consists of three to five members. Prior to the degree examination, students are required to complete the originality check for their thesis. The overall similarity score in the similarity report should not exceed 20%. On the day of the degree examination, students are required to submit the "Thesis Originality Check Report" to the advisor and the examination committee for reference. The examination committee will conduct an oral examination of the thesis and ensure its alignment with the professional field.

After completing the degree examination, graduate students need to conduct another originality check on the final version of the thesis. Once confirmed by the advisor, students should submit the "Thesis Final Version Originality Check Form," "Thesis Originality Check Report," and the thesis itself to the department office for record keeping.

**Article 8:** For matters not covered in these regulations, they shall be handled in accordance with the related regulations for conferral of graduate degrees of this university.

**Article 9:** These regulations shall be implemented after being approved by the department council meeting, and any amendments to these regulations shall follow the same procedure.