**Course Flow Chart for 2020 Fall and 2020 Spring Semester  
Academic Year:** 109 (Aug 2020~ Jul 2021)

**Department:** Department of Industrial Engineering and Management

**Academic Degree:** Master of Science (MS in Industrial Engineering and Management)

**(109.10.7 109學年度第一次系課程會議通過 Approved by the First Department Curriculum Committee on Oct 2nd,2020)**學分組合:講授時數-實習時數-學分數Credit Format: Lecture Hours - Internship Hours - Total Credits

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **第一學年First academic year** | | | | | **第二學年Second academic year** | |
| **Fall Semester** | | **Spring Semester** | | | **Fall Semester** | **Spring Semester** |
| **專業必修Department Required Courses ( 11 credits)** | | | | | | |
| 研究方法 Research Method  3-0-3 | | 科技論文寫作與專題討論 Technical Writing and Research Discussion 2-0-2 | | | 碩士論文 Master Thesis  3-0-3 | 碩士論文 Master Thesis  3-0-3 |
| 3-0-3 | | 2-0-2 | | | 3-0-3 | 3-0-3 |
| **第一學年First academic year** | | | | **第二學年Second academic year** | | |
| **Fall Semester** | **Spring Semester** | | | **Fall Semester** | | **Spring Semester** |
| **專業選修Elective Courses: (at least 27 credits)** | | | | | | |
| 工業工程與管理概論 Introduction to Industrial Engineering and Management  3-0-3 | | |  | 工業工程與管理專題(一) Special Topics on Industrial Engineering and Management (I)  3-0-3 | | 工業工程與管理專題(二) Special Topics on Industrial Engineering and Management(Ⅱ)  3-0-3 |
| **Courses for Professional Skills** | | | | | | |
| 作業研究學程 | | |  |  | |  |
|  | | | Decision Theory  3-0-3 | Dynamic Programming  3-0-3 | | System Analysis of Overall Logistics Support  3-0-3 |
| Linear Programming  3-0-3 | | | Artificial Intelligence  3-0-3 | Distribution Network  3-0-3 | |  |
| Stochastic Processes  3-0-3 | | | Optimization and Heuristics  3-0-3 |  | |  |
| Fuzzy Theory and Application  3-0-3 | | | Operations Research  3-0-3 |  | |  |
| System Simulation  3-0-3 | | |  |  | |  |
| 資訊科技學程 | | |  |  | |  |
| Big Data Analysis and Machine Learning  3-0-3 | | | Object Oriented Systems Analysis and Design  3-0-3 | Performance Evaluation of Information Technology  3-0-3 | | E-Business and intelligent management  3-0-3 |
|  | | | Knowledge Management  3-0-3 |  | |  |
| 統計品管學程 | | |  |  | |  |
| Mathematical Statistics  3-0-3 | | | Reliability Engineering  3-0-3 | Prediction and Regression Model  3-0-3 | | Quality Engineering  3-0-3 |
| Advanced Quality Control  3-0-3 | | | Multivariate Data Analysis  3-0-3 |  | | Total Quality Management  3-0-3 |
|  | | | Experimental Design & Analysis  3-0-3 |  | |  |
| 人因工程學程 | | |  |  | |  |
| Human Factor Engineering  3-0-3 | | | User Interface  3-0-3 |  | |  |
| Industrial Environment and Safety  3-0-3 | | | Cognitive Psychology  3-0-3 |  | |  |
| 生產製造學程 | | |  |  | |  |
| Computer-Aided Management and Control of Manufacturing Systems  3-0-3 | | | Advanced Facility Planning  3-0-3 | Computer Integration Manufacturing  3-0-3 | | Lean Production Management  3-0-3 |
| Advanced Quality Control  3-0-3 | | | Production Scheduling  3-0-3 |  | |  |
|  | | | Advanced Enterprise Resource Planning  3-0-3 |  | |  |
| **Courses for Specific Fields** | | | | | | |
| 物流與供應鏈領域 | | |  |  | |  |
| Logistics management  3-0-3 | | | Global Supply Chain Management  3-0-3 | Advanced Industrial Internship (I)  0-6-3 | | Advanced Industrial Internship (Ⅱ)  0-6-3 |
|  | | | Global Transportation Planning  3-0-3 | Summer Advanced Industrial Internship(I)  0-4-2 | |  |
|  | | | Supply Chain Model and Analysis  3-0-3 | Summer Advanced Industrial Internship(Ⅱ)  0-4-2 | |  |
|  | | |  | Summer Overseas Advanced Industrial Internship(I)  0-4-2 | |  |
|  | | |  | Summer Overseas Advanced Industrial Internship(Ⅱ)  0-4-2 | |  |
|  | | |  | Inventory Theory  3-0-3 | |  |
| 健康產業管理領域 | | |  |  | |  |
| Hospital Management Engineering  3-0-3 | | | Health Care Quality Management  3-0-3 | Computer Aided Detection and Diagnosis  3-0-3 | |  |
|  | | | Introduction of Medical System  3-0-3 |  | |  |
| **The minimum graduation credits required for graduate students are 38 credits, including 6 credits of master’s thesis.** | | | | | | |
| 本系碩士班最低畢業學分數為38學分(含論文6學分) | | | | | | |