Academic Year: 107 (Aug 2018~ Jul2019)

Department: Department of Industrial Engineering and Management

Academic Degree: Doctor of Philosophy (Ph. D)

Require courses: 107.09.05updated

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| **First Year** | | **Second Year** | |
| **1st semester** | **2nd semester** | **1st semester** | **2nd semester** |
| Require courses (Total 8 credits) | | | |
| Seminar ( I )  0-2-1 | Seminar ( II )  0-2-1 | Doctoral Dissertation  3-0-3 | Doctoral Dissertation  3-0-3 |
| 0-2-1 | 0-2-1 | 3-0-3 | 3-0-3 |
| **Required Courses:** 33 Credits (including Doctor Thesis：6 Credits) | | | |
| **Selected Courses:** at least 25 Credits for required | | | |

Selected courses:

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **First Year** | | | | **Second Year** | | | |
| **1st semester** | | **2nd semester** | | **1st semester** | | **2nd semester** | |
| **Selected Courses:** at least 25 Credits for required | | | | | | | |
| Special Topics on Industrial Engineering and Management ( I )  3-0-3 | | Special Topics on Industrial Engineering and Management ( II )  3-0-3 | | Special Topics on Industrial Engineering and Management ( III )  3-0-3 | | Special Topics on Industrial Engineering and Management ( IV )  3-0-3 | |
| Introduction to Industrial Engineering and Management  3-0-3 | | English Communication and Technical Writing  3-0-3 | | Seminar ( III )  0-2-1 | | Seminar ( IV )  0-2-1 | |
| Research Method  3-0-3 | | Decision Theory  3-0-3 | | Dynamic Programming  3-0-3 | | Quality Engineering  3-0-3 | |
| Operations Research  3-0-3 | | Artificial Intelligence  3-0-3 | | Network Flows  3-0-3 | | Total Quality Management 3-0-3 | |
| Linear Programming  3-0-3 | | Optimization and Heuristics  3-0-3 | | Prediction and Regression Model  3-0-3 | | Lean Production Management 3-0-3 | |
| Stochastic Processes  3-0-3 | | Nonlinear Programming  3-0-3 | | Computer Integrated Manufacturing  3-0-3 | | Advanced Enterprise Resource Planning 3-0-3 | |
| Fuzzy Theory and Application  3-0-3 | | Reliability Engineering  3-0-3 | | Inventory Theory  3-0-3 | | E-business Special Topics 3-0-3 | |
| System Simulation  3-0-3 | | Multivariate Data Analysis  3-0-3 | | Computer Aided Detection and Diagnosis  3-0-3 | | System Analysis of Overall Logistics Support 3-0-3 | |
| Stochastic models in Production systems  3-0-3 | | Experimental Design & Analysis  3-0-3 | |  | |  | |
| Mathematical Statistics  3-0-3 | | User Interface  3-0-3 | |  | |  | |
| Advanced Quality Control  3-0-3 | | Cognitive Psychology  3-0-3 | |  | |  | |
| Human Factor Engineering  3-0-3 | | Advanced Facility Planning 3-0-3 | |  | |  | |
| Industrial Environment and Safety  3-0-3 | | System Modeling  3-0-3 | |  | |  | |
| Computer-Aided Management and Control of Manufacturing Systems  3-0-3 | | Production Scheduling  3-0-3 | |  | |  | |
| Advanced Production Management  3-0-3 | | Object Oriented Systems Analysis and Design  3-0-3  Object-Oriented Simulation  3-0-3 | |  | |  | |
| Logistics management  3-0-3 | | Global Supply Chain Management  3-0-3 | | Models of Human Performance  3-0-3 | |  | |
| Hospital Management Engineering  3-0-3 | | Global Logistics Information System  3-0-3 | | Lean Production Management  3-0-3 | |  | |
| Big Data Analysis and Machine Learning  3-0-3 | | Global Transportation Planning  3-0-3 | | Advanced Enterprise Resource Planning  3-0-3 | |  | |
|  | | Knowledge Management 3-0-3 | | Seminar on E-Commerce  3-0-3 | |  | |
|  | | Introduction of Medical System  3-0-3 | | Analysis of Integrated Logistics Support System  3-0-3 | |  | |
|  | | Supply Chain Model and Analysis  3-0-3 | |  | |  | |
| **Required Courses:** 33 Credits (including Doctor Thesis：6 Credits) | | | | | | | |
| **For international student elective course-Courses taught in English(**7 Credits) | | | | | | | |
| |  |  |  |  | | --- | --- | --- | --- | | Advanced Operations Research  3-0-3 | Intelligent Manufacturing Systems  3-0-3 | Statistical Quality Control  3-0-3 | Advanced Ergonomics  3-0-3 | | Applications of Big Data Analytics in Industries  3-0-3 | Supply Chain Model  3-0-3 |  |  | | | | | | | | |
| **Required Courses:** 33 Credits (including Doctor Thesis：6 Credits) | | | | | | | |
| Independent Study(Ⅰ)  1-0-1 | | Independent Study(Ⅱ)  1-0-1 | Independent Study(Ⅲ)  1-0-1 | Independent Study(Ⅳ)  1-0-1 | |
|  | |  | Special Topics  3-0-3 |  | |

**Required Courses:** 33 Credits (including Doctor Thesis：6 Credits)