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 Dissertation3-0-3 | Doctoral Dissertation3-0-3 |
| 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:

|  |  |
| --- | --- |
| **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 Management3-0-3 | English Communication and Technical Writing3-0-3 | Seminar ( III )0-2-1 | Seminar ( IV )0-2-1 |
| Research Method3-0-3 | Decision Theory3-0-3 | Dynamic Programming3-0-3 | Quality Engineering 3-0-3 |
| Operations Research3-0-3 | Artificial Intelligence3-0-3 | Network Flows 3-0-3 | Total Quality Management 3-0-3 |
| Linear Programming3-0-3 | Optimization and Heuristics 3-0-3 | Prediction and Regression Model3-0-3 | Lean Production Management 3-0-3 |
| Stochastic Processes 3-0-3 | Nonlinear Programming3-0-3 | Computer Integrated Manufacturing 3-0-3 | Advanced Enterprise Resource Planning 3-0-3 |
| Fuzzy Theory and Application3-0-3 | Reliability Engineering3-0-3 | Inventory Theory3-0-3 | E-business Special Topics 3-0-3 |
| System Simulation3-0-3 | Multivariate Data Analysis3-0-3 | Computer Aided Detection and Diagnosis3-0-3 | System Analysis of Overall Logistics Support 3-0-3 |
| Stochastic models in Production systems3-0-3 | Experimental Design & Analysis3-0-3 |  |  |
| Mathematical Statistics3-0-3 | User Interface3-0-3 |  |  |
| Advanced Quality Control3-0-3 | Cognitive Psychology3-0-3 |  |  |
| Human Factor Engineering 3-0-3 | Advanced Facility Planning 3-0-3 |  |  |
| Industrial Environment and Safety3-0-3 | System Modeling 3-0-3 |  |  |
| Computer-Aided Management and Control of Manufacturing Systems3-0-3 | Production Scheduling3-0-3 |  |  |
| Advanced Production Management3-0-3 | Object Oriented Systems Analysis and Design3-0-3Object-Oriented Simulation3-0-3 |  |  |
| Logistics management3-0-3 | Global Supply Chain Management3-0-3 | Models of Human Performance3-0-3 |  |
| Hospital Management Engineering 3-0-3 | Global Logistics Information System 3-0-3 | Lean Production Management3-0-3 |  |
| Big Data Analysis and Machine Learning3-0-3 | Global Transportation Planning 3-0-3 | Advanced Enterprise Resource Planning3-0-3 |  |
|  | Knowledge Management 3-0-3 | Seminar on E-Commerce3-0-3 |  |
|  | Introduction of Medical System 3-0-3 | Analysis of Integrated Logistics Support System3-0-3 |  |
|  | 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) |
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| Advanced Operations Research 3-0-3 | Intelligent Manufacturing Systems3-0-3 | Statistical Quality Control3-0-3 | Advanced Ergonomics3-0-3 |
| Applications of Big Data Analytics in Industries3-0-3 | Supply Chain Model3-0-3 |  |  |

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| **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 Topics3-0-3 |  |

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