Course Flow Chart for 2023 Fall and 2024 Spring Semester

Academic Year: 112 (Aug 2023~ Jul 2024)

Department: Department of Industrial Engineering and Management

Academic Degree: Doctor of Philosophy (Ph. D)

(112.3.15 111 學年度第二次系課程會議通過 Approved by the Second Department Curriculum Committee on Mar2nd,2023)學分組合:講授時數-實習時數-學分數 Credit Format: Lecture Hours - Labs 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(計 8 學分) Department Required Courses (8 credits)			
書報討論(一) Seminar (I) 0-2-1	書報討論(二) Seminar (II) 0-2-1	博士論文 Doctoral Dissertation 3-0-3	博士論文 Doctoral Dissertation 3-0-3
0-2-1	0-2-1	3-0-3	3-0-3
專業選修(至少應修 25 學分) Elective Courses: (at least 25 credits)			
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	工業工程與管理專題(三) Special Topics on Industrial Engineering and Management (III) 3-0-3	工業工程與管理專題(四) Special Topics on Industrial Engineering and Management (IV) 3-0-3
工業工程與管理概論 Introduction to Industrial Engineering and Management 3-0-3	英語溝通與論文寫作 English Communication and Technical Writing 3-0-3	書報討論(三) Seminar (III) 0-2-1	書報討論(四) Seminar (IV) 0-2-1
研究方法 Research Method 3-0-3	決策理論 Decision Theory 3-0-3	動態規劃 Dynamic Programming 3-0-3	全面品質管理 Total Quality Management 3-0-3
作業研究 Operations Research 3-0-3	人工智慧 Artificial Intelligence 3-0-3	網路流通 Network Flows 3-0-3	精實生產管理 Lean Production Management 3-0-3
線性規劃 Linear Programming 3-0-3	最佳化與啟發式演算法 Optimization and Heuristics 3-0-3	預測與迴歸模式 Prediction and Regression Model 3-0-3	高等企業資源規劃 Advanced Enterprise Resource Planning 3-0-3
系統模擬 System Simulation 3-0-3	隨機程序 Stochastic Processes 3-0-3	存貨理論 Inventory Theory 3-0-3	電子商務專題研討 E-business Special Topics 3-0-3
高等品質管理 Advanced Quality Control 3-0-3	非線性規劃 Nonlinear Programming 3-0-3	電腦輔助檢測與診斷 Computer Aided Detection and Diagnosis 3-0-3	整體後勤支援系統分析 System Analysis of Overall Logistics Support 3-0-3
人因工程 Human Factor Engineering 3-0-3	可靠度工程 Reliability Engineering 3-0-3	資訊系統成效評估 Performance Evaluation of Information Technology 3-0-3	
工業環境與安全 Industrial Environment and Safety 3-0-3	多變量分析 Multivariate Data Analysis 3-0-3	品質工程 Quality Engineering 3-0-3	
電腦輔助製造系統管理及控制 Computer-Aided Management and Control of Manufacturing Systems 3-0-3	實驗設計與分析 Experimental Design & Analysis 3-0-3		
高等生產管理 Advanced Production Management 3-0-3	人機介面 User Interface 3-0-3		
物流管理 Logistics management 3-0-3	認知心理學 Cognitive Psychology 3-0-3		
醫院管理工程 Hospital Management Engineering 3-0-3	高等設施規劃 Advanced Facility Planning 3-0-3		
大數據分析與機器學習 Big Data Analysis and Machine Learning 3-0-3	系統模式 System Modeling 3-0-3		

生產排程 Production Scheduling 3-0-3	物件導向系統分析與設計 Object Oriented Systems Analysis and Design 3-0-3		
	物件導向模擬 Object-Oriented Simulation 3-0-3		
	全球供應鏈管理 Global Supply Chain Management 3-0-3		
	全球運籌資訊系統 Global Logistics Information System 3-0-3		
	全球運輸規劃 Global Transportation Planning 3-0-3		
	知識管理 Knowledge Management 3-0-3		
	醫療資訊系統 Introduction of Medical System 3-0-3		
	供應鏈模式分析 Supply Chain Model and Analysis 3-0-3		

外籍生專業必選-全英文授課(至少應修習 4 門課(12 學分))
For international student required course-Courses taught in English (12 Credits)　(註：限本系博碩生選修)

高等作業研究 Advanced Operations Research 3-0-3	智能製造系統 Intelligent Manufacturing Systems 3-0-3	統計品質管理 Statistical Quality Control 3-0-3	高等人因工程 Advanced Ergonomics 3-0-3
大數據分析於產業應用 Applications of Big Data Analytics in Industries 3-0-3	供應鏈模式 Supply Chain Model 3-0-3		

外籍生專業選修-全英文授課(計 7 學分)
全英文授課 For international student elective course-Courses taught in English (7 Credits)　(註：限本系博士班外籍生選修)

獨立研究(一) Independent Study(Ⅰ) 1-0-1	獨立研究(二) Independent Study(Ⅱ) 1-0-1	獨立研究(三) Independent Study(Ⅲ) 1-0-1	獨立研究(四) Independent Study(Ⅳ) 1-0-1
		專題研究 Special Topics 3-0-3	

Total: The minimum credits: 33 credits (Including thesis 6 credits)
本系博士班最低畢業學分數為 33 學分(含論文 6 學分)

備　　註：相關修業規定細節，請詳參本系博士班修業要點。

國立雲林科技大學 111 學年度工業工程與管理系博士班外籍生(國際生)課程流程圖

| 第一學年 (1st Academic Year) | | 第二學年 (2nd Academic Year) | |
第一學期 (Fall Semester)	第二學期 (Spring Semester)	第一學期 (Fall Semester)	第二學期 (Spring Semester)
專業必修(計 8 學分) Required Courses (8 Credit Hours)			
書報討論(一) Seminar（Ⅰ） 0-2-1	書報討論(二) Seminar（Ⅱ） 0-2-1	博士論文 Doctoral Dissertation 3-0-3	博士論文 Doctoral Dissertation 3-0-3
0-2-1	0-2-1	3-0-3	3-0-3
專業必選(至少應修習 4 門課(12 學分)- At least 4 (12 Credit Hours) of the following 6 courses **全英文授課 (Courses taught in English)　　(註：限本系博碩生選修)**			
高等作業研究 Advanced Operations Research 3-0-3	智能製造系統 Intelligent Manufacturing Systems 3-0-3	統計品質管理 Statistical Quality Control 3-0-3	高等人因工程 Advanced Ergonomics 3-0-3
大數據分析於產業應用 Applications of Big Data Analytics in Industries 3-0-3	供應鏈模式 Supply Chain Model 3-0-3		
專業選修(計 7 學分) Elective Courses (7 Credit Hours) **全英文授課 (Courses taught in English)　　(註：限本系博士班外籍生選修)**			
獨立研究(一) Independent Study(Ⅰ) 1-0-1	獨立研究(二) Independent Study(Ⅱ) 1-0-1	獨立研究(三) Independent Study(Ⅲ) 1-0-1	獨立研究(四) Independent Study(Ⅳ) 1-0-1
		專題研究 Special Topics 3-0-3	

外系專業選修(本校博士班課程)至多承認選修 6 學分

6 Credit hours can be transferred from the Ph.D. level courses offered at National Yunlin University of Science and Technology other than Department of Industrial Engineering and Management (DIEM)

本系博士班外籍生(國際生)最低畢業學分數為 33 學分(含論文 6 學分)

Credit required for graduation (DIEM international Ph.D. program): 33 credit hours (including doctoral dissertation 6 credit hours)

工管系博士班外籍生必選課程與碩博一般生課程互抵或承認對照表

博班外籍生課程 International Ph.D. Course (英語授課) (Courses taught in English)	博班一般生課程 Ph.D. Course (中文授課) (Courses taught in Chinese)	碩士班課程 Master course (中文授課) (Courses taught in Chinese)	說明 explanation
高等作業研究 Advanced Operations Research	作業研究 Operations Research	作業研究 Operations Research	1.左列同性質課程，僅能擇一修習。(多修習不列計畢業學分) Credits are only granted for one of the three courses, similar in content, on the left side. Credits earned from more than one course won't be counted toward graduation requirements. 2.博班外籍生修習博班一般生「作業研究」及格，承認為已修習「高等作業研究」。 For international doctoral students, the course "Advanced Operations Research" can be waived if they have taken and passed "Operations Research." 3.碩博一般生修習「高等作業研究」及格，承認為已修習「作業研究」。 For local graduate students in both master's and doctoral degree programs, the course "Operations Research" can be waived if they have taken and passed "Advanced Operations Research."
大數據分析於產業應用 Applications of Big Data Analytics in Industries	大數據分析與機器學習 Big Data Analysis and Machine Learning	大數據分析與機器學習 Big Data Analysis and Machine Learning	1.左列同性質課程，僅能擇一修習。(多修習不列計畢業學分) Credits are only granted for one of the three courses, similar in content, on the left side. Credits earned from more than one course won't be counted toward graduation requirements. 2.博班外籍生修習博班一般生「大數據分析與機器學習」及格，承認為已修習「大數據分析於產業應用」。 For international doctoral students, the course "Applications of Big Data Analytics in Industries" can be waived if they have taken and passed "Big Data Analysis and Machine Learning." 3.碩博一般生修習「大數據分析於產業應用」及格，承認為已修習「大數據分析與機器學習」。 For local graduate students in both master's and doctoral degree programs, the course "Big Data Analysis and Machine Learning" can be waived if they have taken and passed "Applications of Big Data Analytics in Industries."
智能製造系統 Intelligent Manufacturing Systems	無對應課程 No corresponding course	無對應課程 No corresponding course	
供應鏈模式 Supply Chain Model	供應鏈模式分析 Supply Chain Model and Analysis	供應鏈模式分析 Supply Chain Model and Analysis	1.左列同性質課程，僅能擇一修習。(多修習不列計畢業學分) Credits are only granted for one of the three courses, similar in content, on the left side. Credits earned from more than one course won't be counted toward graduation requirements. 2.博班外籍生修習博班一般生「供應鏈模式分析」及格，承認為已修習「供應鏈模式」。 For international doctoral students, the course "Supply Chain Model" can be waived if they have taken and passed "Supply Chain Model and Analysis." 3.碩博一般生修習「供應鏈模式」及格，承認為已修習「供應鏈模式分析」。 For local graduate students in both master's and doctoral degree programs, the course "Supply Chain Model and Analysis" can be waived if they have taken and passed "Supply Chain Model."
統計品質管理 Statistical Quality Control	高等品質管理 Advanced Quality Control	高等品質管理 Advanced Quality Control	1.左列同性質課程，僅能擇一修習。(多修習不列計畢業學分) Credits are only granted for one of the three courses, similar in content, on the left side. Credits earned from more than one course won't be counted toward graduation requirements. 2.博班外籍生修習博班一般生「高等品質管理」及格，承認為已修習「統計品質管理」。

博班外籍生課程 International Ph.D. Course (英語授課) (Courses taught in English)	博班一般生課程 Ph.D. Course (中文授課) (Courses taught in Chinese)	碩士班課程 Master course (中文授課) (Courses taught in Chinese)	說明 explanation
			For international doctoral students, the course "Statistical Quality Control" can be waived if they have taken and passed "Advanced Quality Control." 3.碩博一般生修習「統計品質管理」及格,承認為已修習「高等品質管理」。 For local graduate students in both master's and doctoral degree programs, the course "Advanced Quality Control" can be waived if they have taken and passed "Statistical Quality Control."
高等人因工程 Advanced Ergonomics	人因工程 Human Factor Engineering	人因工程 Human Factor Engineering	1.左列同性質課程,僅能擇一修習。(多修習不列計畢業學分) Credits are only granted for one of the three courses, similar in content, on the left side. Credits earned from more than one course won't be counted toward graduation requirements. 2.博班外籍生修習博班一般生「人因工程」及格,承認為已修習「高等人因工程」。 For international doctoral students, the course "Advanced Ergonomics" can be waived if they have taken and passed "Human Factor Engineering." 3.碩博一般生修習「高等人因工程」及格,承認為已修習「人因工程」。 For local graduate students in both master's and doctoral degree programs, the course "Human Factor Engineering" can be waived if they have taken and passed "Advanced Ergonomics."