# Curricular planning for Doctorate-degree program
## Department of Information Management, Chaoyang University of Technology
### (applicable to day division students enrolled in 2020)

| Academic Year | First Year | | | | | | Second Year | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Semester** | First Semester | | | Second Semester | | | First Semester | | | Second Semester | | |
| | Subject | Hours | Credit | Subject | Hours | Credit | Subject | Hours | Credit | Subject | Hours | Credit |
| **Required Courses** | 資訊講座<br>Speeches in Information Technology | 1 | 1 | 資訊講座<br>Speeches in Information Technology | 1 | 1 | | | | | | |
| | 研究方法<br>Research Methods | 3 | 3 | | | | | | | | | |
| | 資訊管理研究議題<br>Infomation Management Research Subject | 3 | 3 | | | | | | | | | |
| **Subtotal** | | 7 | 7 | | 1 | 1 | | 0 | 0 | | 0 | 0 |
| **Elective Courses** | | | | 行動網路研究專題<br>Special Topics in Mobile Network | 2 | 2 | 無線網路研究專題<br>Special Topics in Wireless Network | 2 | 2 | 知識管理研究專題<br>Special Topics in knowledge Management | 2 | 2 |
| | | | | 智慧型系統研究專題<br>Special Topics in Intelligent Systems | 2 | 2 | 決策支援研究專題<br>Special Topics in Decision Support | 2 | 2 | 行動多媒體研究專題<br>Special Topics in Mobile Multimedia | 2 | 2 |
| | | | | 多媒體應用研究專題<br>Special Topics in Multimedia Application | 2 | 2 | 多媒體安全研究專題<br>Special Topics in multimedia security | 2 | 2 | 多媒體資料庫研究專題<br>Special Topics in Multimedia Databases | 2 | 2 |
| | | | | 整合式商務系統研究專題<br>Special Topics in Integrated Information Systems | 2 | 2 | 多媒體技術研究專題<br>Special Topics in multimedia technique | 2 | 2 | 資料壓縮與應用研究專題<br>Special Topics in Data Compression and Applications | 2 | 2 |
| | | | | 資訊隱藏技術研究專題<br>Special Topics in Information Hiding Techniques | 2 | 2 | 網際網路商務系統研究專題<br>Special Topics in Web-Based Information Systems | 2 | 2 | 跨平台商務系統研究專題<br>Special Topics in Cross-platform Business Systems | 2 | 2 |
| | **管理類** | | | | | | | | | | | |
| | 高等軟體工程<br>Advanced Software Engineering | 3 | 3 | 供應鏈管理<br>Supply Chain Management | 3 | 3 | 網路公民素養<br>Netizen Literacy | 3 | 3 | 資訊產業經營與管理<br>Advanced Information Industry Operation and Management | 2 | 2 |
| | 知識管理<br>Knowledge Management | 3 | 3 | 多變量分析<br>Multivariate Analysis | 3 | 3 | 企業資源規劃<br>Enterprise Resources Planning | 3 | 3 | 管理心理學<br>Management Psychology | 3 | 3 |
| | 高等電子商務<br>Advanced Electronic Commerce | 3 | 3 | 多準則決策<br>Multiple Criteria Decision Making | 3 | 3 | 流程改善方法<br>Process Improvement Methodologies | 3 | 3 | 軟體品質管理<br>Software Quality Management | 3 | 3 |
| | 協同式數位學習<br>Collaboration E-Learning | 3 | 3 | 資訊科技管理<br>Information Science and Technology Management | 3 | 3 | | | | | | |
| | 企業資訊管理實務<br>Practices in Business Information Management | 3 | 3 | 管理資訊系統<br>Management Information Systems | 3 | 3 | | | | | | |
| | 資訊管理研究專題<br>Special Topics in Infomation Management | 3 | 3 | | | | | | | | | |
| | **科技類** | | | | | | | | | | | |
| | 高等演算法<br>Advanced Algorithm | 3 | 3 | 密碼學<br>Cryptography | 3 | 3 | 資訊隱藏<br>Information Hiding | 3 | 3 | 網路安全<br>Networking Security | 3 | 3 |
| | 作業研究<br>Operations Research | 3 | 3 | 作業系統<br>Operating System | 3 | 3 | 平行計算<br>Parallel Computing | 3 | 3 | 數位學習系統<br>E-Learning Management System | 3 | 3 |
| | 資料探勘<br>Data Mining | 3 | 3 | 人工智慧與機器學習<br>Artificial Intelligence and Machine Learning | 3 | 3 | 增強式學習<br>Reinforcement Learning | 3 | 3 | 多媒體資料庫<br>Multimedia Database | 3 | 3 |
| | 高等電腦網路<br>Advanced Computer Networks | 3 | 3 | 代理人系統<br>Agent Systems | 3 | 3 | | | | 資訊安全管理<br>Information Security Management | 3 | 3 |
| | 進階雲端運算<br>Advanced Cloud Computing | 3 | 3 | 類神經網路<br>Neural Networks | 3 | 3 | | | | 多媒體壓縮技術<br>Multimedia Compression Technique | 3 | 3 |
| | 物聯網與大數據分析<br>Internet of Things and Big Data Analysis | 3 | 3 | 物件導向技術<br>Object Oriented Programming | 3 | 3 | | | | 產學實務研究<br>Industry Research Practice | 6 | 6 |
| | 高等資料庫系統<br>Advanced Database System | 3 | 3 | 企業應用程式開發<br>Enterprise Application Development | 3 | 3 | | | | | | |
| | 模糊理論與應用<br>Fuzzy Theory and Application | 3 | 3 | 資訊科技研究<br>Information technology in Infomation Management | 3 | 3 | | | | | | |

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| | Subject | Hours | Credit | Subject | Hours | Credit | | Subject | Hours | Credit | | Subject | Hours | Credit |
| | 數位學習發展與趨勢<br>The Evolution of E-Learning | 3 | 3 | 資訊融入教學設計<br>ICT in Teaching Design | 3 | 3 | | | | | | | | |
| | **數位多媒體應用類課程** | | | | | | | | | | | | | |
| | 3D遊戲程式<br>3D Game Programming | 3 | 3 | 多人線上遊戲程式設計<br>Multi-player Online Game Programming | 3 | 3 | | 影像處理<br>Image Processing | 3 | 3 | | 圖形識別與機器學習<br>Pattern Recognition and Machine Learning | 3 | 3 |
| | | | | 數位視訊處理<br>Digital Video Processing | 3 | 3 | | 數位藝術創作<br>Digital Arts Creative Project | 3 | 3 | | 動畫研究與應用<br>Animation Research and Application | 3 | 3 |
| | | | | | | | | | | | | 產學實務研究<br>Industry Research Practice | 6 | 6 |
| Subtotal | | 48 | 48 | | 58 | 58 | | | 34 | 34 | | | 51 | 51 |

| University Requirements | |
|---|---|
| Required Courses | 3 Courses 8 Credits |
| Elective Courses | Minimum elective 18 Credits |
| Recognition limit of credits provided by other departments | 0 Credits |
| Total Requirement | 32 Credits 32 credits (incl. 6 credits on doctorate-degree seeking theses) |

一、全校性規定：學生需修習並通過「學術研究倫理教育」相關課程後，始得申請學位考試。
二、全院性規定：
　　(一)課程名稱相同者得在本院各系碩士班及研究所修習。
三、本系之規定：
　　(一)經指導教授及所長同意所修習他所之課程，得列為本所之專業選修課程。
　　(二)「研究專題」課程每學期至多得修習 2 學分。
　　(三)「產學實務研究」為選修6學分校外實習課程。


1. University-level regulations: Students are required to take and pass "Ethics Education Course" before applying for the entrance exam.
2. College-level regulations:
   Courses with the same names as courses in other departments should be taken in this department.
3. Department regulations:
   (1) The advisor and head of the department agree that the course is classified as a professional elective course.
   (2) The "Research Topics" course can be taken for up to 2 credits per semester.
   (3) "Industry Research Practice" is an optional 6-credit internship completed outside of the school.