

國立勤益科技大學 113 學年度 冷凍空調與能源系碩士班學分計畫表

National Chin-Yi University of Technology

Curriculum Planning of 2024 Master's Degree in Department of Refrigeration, Air-Conditioning and Energy Engineering

112.10.11 系課程會議審議通過

112.10.27 系務會議審議通過

112.11.23 院課程會議審議通過

112.12.07.校課程委員會議及 112.12.21.臨時教務會議審議通過

113.12.5.校課程委員會議及 113.12.24.臨時教務會議審議修訂通過

| 科目 | Subjects | 上學期 | | 下學期 | |
|--|--|---------------|------------|---------------|------------|
| | | 學分 Credits | 學時 Hour | 學分 Credits | 學時 Hour |
| 必修科目(10 學分) Required Courses (10credits hours) | | | | | |
| 第一學年 First Year | | | | | |
| 專題研討（一） | Seminar（I） | 1 | 2 | | |
| 專題研討（二） | Seminar（II） | | | 1 | 2 |
| 第二學年Second Year | | | | | |
| 專題研討（三） | Seminar（III） | 1 | 2 | | |
| 論文 | Thesis | 3 | 3 | | |
| | | | | 3 | 3 |
| 專題研討（四） | Seminar（IV） | | | 1 | 2 |
| 專業選修科目 Department Required Courses | | | | | |
| 第一學年 First Year | | | | | |
| 核心選修科目目 Core Electives Courses | | | | | |
| 冷凍空調系統工程 | Refrigeration and Air-Conditioning System Engineering | 3 | 3 | | |
| 高等熱力學 | Advanced Thermodynamics | 3 | 3 | | |
| 高等熱傳學 | Advanced Heat Transfer | | | 3 | 3 |
| 高等流體力學 | Advanced Fluid Mechanics | | | 3 | 3 |
| 共同選修科目 General Electives Courses | | | | | |
| 太陽能工程系統設計實務 | Design Practices of Solar Energy Engineering Systems | 3 | 3 | | |
| 冷凍空調控制工程 | Control Engineering of Refrigeration and Air-Conditioning System | 3 | 3 | | |
| 冷凍空調嵌入式系統設計 | Embedded System Design for Refrigeration and Air Conditioning | 3 | 3 | | |
| 恆溫恆濕系統設計 | Constant Temperature and Humidity System Design | 3 | 3 | | |
| 計算流體力學 | Computational Fluid Dynamics | 3 | 3 | | |
| 食品冷凍冷藏 | Refrigeration and Freezing of Foods | 3 | 3 | | |
| 真空凍結乾燥 | Vacuum Freezing and Drying Technology | 3 | 3 | | |
| 能源工程實務 | Energy Engineering Practices | 3 | 3 | | |
| 無塵無菌室設計 | Advanced Clean Room Design | 3 | 3 | | |
| 電腦輔助流場分析 | Computer-Aided Fluid Analysis | 3 | 3 | | |
| 綠建築物物理環境控制 | Green Building Physical Environment Control | 3 | 3 | | |
| 燃料電池原理與應用 | Fuel Cell Principle and Applications | 3 | 3 | | |
| 空調節能技術 | Energy Saving Technology of Air-Conditioning | | | 3 | 3 |
| 室內植栽環境節能技術 | Energy-Saving Technology of Indoor Planting Environment | | | 3 | 3 |
| 風力發電 | Wind Power | | | 3 | 3 |
| 特殊空調設計 | Special Air-Conditioning System Design | | | 3 | 3 |
| 紊流及其分析模式 | Turbulence and The Analysis Modeling | | | 3 | 3 |
| 氫能技術與應用 | Hydrogen Energy Technology and Applications | | | 3 | 3 |
| 煙控系統設計與分析 | Design and Analysis of Smoke Management Systems | | | 3 | 3 |
| 電子熱傳 | Electronic Heat Transfer | | | 3 | 3 |
| 熱交換器設計與分析 | Heat Exchanger Design and Analysis | | | 3 | 3 |
| 應用於 HVAC 儀器系統之虛擬儀器設計 | Virtual Instrumentation Design for HVAC Instrumentation System | | | 3 | 3 |
| 第二學年 Second Year | | | | | |
| 共同選修科目 General Electives Courses | | | | | |
| 大數據分析 | Big Data Analysis | 3 | 3 | | |

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|-------------|---|---|---|---|---|
| 太陽能技術與應用 | Solar Energy Technology and Applications | 3 | 3 | | |
| 冷凍空調測試標準與規範 | Refrigeration and Air Conditioning Testing Standards and Specifications | 3 | 3 | | |
| 科技英文 | English for Science and Technology | 3 | 3 | | |
| 特殊通風技術 | Special Ventilation Technology | 3 | 3 | | |
| 人工智慧 | Artificial Intelligence | | | 3 | 3 |
| 低碳與廢能應用 | Low-carbon and waste energies Applications | | | 3 | 3 |
| 室內環境品質 | Indoor Environment Quality | | | 3 | 3 |
| 特殊冷凍應用技術 | Special Refrigeration Application Technology | | | 3 | 3 |
| 電腦輔助機構設計 | Computer-Aided Mechanism Design | | | 3 | 3 |
| 壓縮機設計 | Compressor Design | | | 3 | 3 |

備註 Note：

- 一、畢業至少應修 34 學分：必修 10 學分(含論文 6 學分、專題研討 4 學分)，選修 24 學分（本系專業選修至少 18 學分）。其中包含兩門核心選修科目。

Before graduation, each student should complete at least 34 credits, including 10 required credits (Thesis 6 credits and Seminar 4 credits) and 24 elective credits (at least 18 credits should be completed in department elective)

- 二、學生應於申請學位考試前至「教育部臺灣學術倫理教育資源中心」網路平臺完成學術研究倫理教育課程，至少 6 小時課程。

Students need to complete the academic research ethics education course for at least 6 hours before the final defence application.

- 三、學生須於一年級至少修習兩門核心選修科目共計六學分。

Students must complete at least two core elective courses in the first year for a total of 6 credits.

- 四、研究生必須通過碩士班論文口試，方准予畢業。畢業時，依法授予工學碩士學位。

Graduate students are only qualified for graduation after passing the thesis oral examination of the master's program and will be awarded with the master's degree according to law by the time of graduation.

- 五、以同等學力資格入學之學生（冷凍空調工程技師及相關技師除外）須補修大學四技日間部所開課程，以 60 分為及格，不計入畢業學分（冷凍工程及實習、空調工程及實習、自動控制，任選兩門）。

Students admitted with an equivalent education level (except for the refrigeration and air-conditioning engineering technicians and other related technicians) must complete all course of the 4-year College of the Day School Division where reaching 60 points will be regarded as qualification and not included into the graduation credits (Any two courses from Refrigeration Engineering and Practices, Air-conditioning Engineering and Practices and Automatic Control).

- 六、外籍生學生修習碩士班日間部開授全英文授課課程兩門，可抵修核心選修課程兩門。本國籍學生可以全英文授課課程抵修一門核心選修。

Foreign students completing two courses taught all in English of the master's degree of the Day School Division can be regarded as the transfer of two core elective courses. Taiwanese students can transfer one core elective course with a course taught all in English.

- 七、為因應法規變更、評鑑建議或政府計畫規定等外在因素，本系保有調整學分計畫之權利。若有修訂，將於學期開始前公告，並明確說明修訂內容、影響範圍及相關配套措施，以保障學生權益。

The department reserves the right to adjust the curriculum in response to external factors such as changes in regulations, suggestions of evaluation and accreditation, or government program regulations. If there are any revisions, will be announced before the start of the semester, and the revised content, scope of impact, and related supporting measures will be clearly stated to protect the rights and interests of students.