元智大學機械工程學系「半導體」領域專長學程科目規劃表

Yuan Ze University Department of Mechanical Engineering

"Semiconductors" Field Specialty Program Course Planning Table

(**115**學年度申請適用**)**

**(For students applied in Academic Year 2026)**

115.04.29 一一四學年度第七次教務會議通過

Passed by the 7th Academic Affairs Meeting, Academic Year 2025, on April 29, 2026

一、教學目標 **Teaching Objectives**:

本學程旨在培育具備半導體製程設備與封裝技術之跨領域專業人才。學生將系統性修習機械工程、材料科學及自動控制等基礎理論，建立機構設計與半導體製程設備整合之工程實務與系統整合能力。課程內容涵蓋電路及電子學、半導體製程設備及封裝技術等核心專業領域，著重強化學生於製程設備操作、系統整合與實務應用之能力，進而培養其在半導體產業鏈中之跨域整合與工程問題解決能力。

This program aims to cultivate interdisciplinary professionals with expertise in semiconductor process equipment and packaging technology. Students will systematically study fundamental theories in mechanical engineering, materials science, and control engineering, and develop engineering implementation capabilities in mechanical design and semiconductor process equipment integration. The curriculum covers core professional areas including electric circuits and electronics, semiconductor process equipment and packaging technology. It emphasizes strengthening students' capabilities in equipment operation, system integration, and practical applications, thereby enhancing their ability to achieve cross-disciplinary integration and solve complex engineering problems within the semiconductor industry.

二、課程設計 **Curriculum Design**:

(一)基礎課程：Fundamental Courses

| 課號<br>Course ID | 課程名稱<br>Course Name | 學分<br>Credit(s) | 開課系所<br>Department Offered the Present Course(s) | 備註<br>Remarks |
|---|---|---|---|---|
| ME115 | 工程材料<br>Engineering Materials | 3 | 機械系<br>Department of Mechanical Engineering | |

(二)專業課程：Professional Courses

| 課號<br>Course ID | 課程名稱<br>Course Name | 學分<br>Credit(s) | 開課系所<br>Department Offered the Present Course(s) | 備註<br>Remarks |
|---|---|---|---|---|
| ME206 | 熱力學(一)<br>Thermodynamics (I) | 3 | 機械系<br>Department of Mechanical Engineering | |

| 課號<br>Course ID | 課程名稱<br>Course Name | 學分<br>Credit(s) | 開課系所<br>Department Offered the Present Course(s) | 備註<br>Remarks |
|---|---|---|---|---|
| ME224 | 電路及電子學<br>Introduction to Electric Circuits and Electronics | 3 | 機械系<br>Department of Mechanical Engineering | |

(三)核心課程: Core Courses

| 課號<br>Course ID | 課程名稱<br>Course Name | 學分<br>Credit(s) | 開課系所<br>Department Offered the Present Course(s) | 備註<br>Remarks |
|---|---|---|---|---|
| ME487 | 半導體製程與設備概論<br>Introduction to Semiconductor Manufacturing and Equipment | 3 | 機械系<br>Department of Mechanical Engineering | |
| ME488 | 半導體封裝技術概論<br>Introduction to Semiconductor Packaging | 3 | 機械系<br>Department of Mechanical Engineering | |

三、學程證書授予標準Certificate Award Criteria:

本系生修畢本學程不發證書;外系生修畢全部課程可申請證書。

Certificate Award Criteria: Students of this department who complete the program will not be issued a certificate; students from other departments who complete all required courses may apply for a certificate.

四、領域別Fields of Study:半導體Semiconductors

五、學程召集人 Program Director:李其源 Chi-Yuan Lee

六、負責規劃單位 Responsible Planning Unit:

機械工程學系 Department of Mechanical Engineering