

一、教學目標 Teaching Objectives：

本學程旨在培養學生具備半導體基礎專業知識與應用能力，內容涵蓋元件物理、電路設計及製程技術等核心領域，並兼顧不同學術背景學生之修習需求，提供循序漸進之學習架構。透過實務導向與跨領域整合之課程設計，提升學生於半導體及新興科技領域之應用能力與整合素養。

This program aims to introduce students to fundamental semiconductor concepts and their applications in modern electronic systems. It provides essential knowledge in device physics, circuit design, and fabrication technologies while maintaining accessibility for students from diverse academic backgrounds. The program emphasizes practical understanding and interdisciplinary integration, enabling students to apply semiconductor knowledge in emerging technology areas.

二、課程設計 Curriculum Design：

核心課程：至少 3 學分

Core Courses: At least 3 credits

課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Degree structure	開課系所 Department Offered the Present Course(s)	備註 Remarks
EI312	半導體元件物理 Semiconductor device physics	3	大學部 Undergraduate Program	電通學院英語學士班 International Bachelor Program in Electrical and Communication Engineering	

專業課程：至少 6 學分

Professional courses: at least 6 credits

課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Degree structure	開課系所 Department Offered the Present Course(s)	備註 Remarks
EI332	半導體元件模擬實驗 Semiconductor device simulation lab	3	大學部 Undergraduate Program	電通學院英語學士班 International Bachelor Program in Electrical and Communication Engineering	
EI413	半導體製程技術 Semiconductor Processing Technology	3	大學部 Undergraduate Program	電通學院英語學士班 International Bachelor Program in Electrical and Communication Engineering	
EI421	太陽能光電技術 Photovoltaics Technology	3	大學部 Undergraduate Program	電通學院英語學士班 International Bachelor Program in Electrical and Communication Engineering	

課號 Course ID	課程名稱 Course Name	學分 Credit(s)	學制 Degree structure	開課系所 Department Offered the Present Course(s)	備註 Remarks
EI423	半導體人工智慧 AI for semiconductors	3	大學部 Undergraduate Program	電通學院英語學士班 International Bachelor Program in Electrical and Communication Engineering	
EEC509	固態物理 Solid-State Physics	3	碩士班 Master Program	電機系丙組 Department of Electrical Engineering (Program C)	
AI503	深度學習 Deep learning	3	碩士班 Master Program	AI聯盟 AI Alliance	

三、學程證書授予標準 Certificate Award Criteria：

1. 須至少修習一門非學生所屬學系（組、班）之科目（不可包含院必修「AI程式設計」、與他系合開之課程）。

Students are required to take at least one course outside their own department (or program/class). (The college-compulsory course 'Fundamentals of AI Programming' and courses co-offered with other departments are not included.)

2. 修讀本學程之學生須修畢9學分，包含核心課程3學分、專業課程6學分，即授予學程證書

Students enrolled in this program must complete 9 credits, including 3 credits of core courses and 6 credits of professional courses, to be awarded a program certificate.

四、領域別 Fields of Study：半導體 Semiconductors

五、學程召集人 Program Director：巴拉吉 Balaji Gururajan

六、負責規劃單位 Responsible Planning Unit：電機通訊學院英語學士班 International Bachelor Program in Electrical and Communication Engineering