

National Taiwan University

Ph.D. Program in Semiconductor Devices, Materials, and Hetero-integration Degree Regulations

- I. Study period: 2 to 7 years
- II. Minimum graduation credits:
 - General student: 15 credits (Thesis, Special Project, Seminar, and Internship excluded).
 - Direct admission to Ph.D. student: 27 credits. (Thesis, Special Project, Seminar, and Internship excluded).
- III. At least 9 credits of professional electives are required from the program (courses subject to advisor approval).
- IV. Online learning of Academic Ethics is a required course and does not count toward graduation credits.
- V. Credits from undergraduate courses do not fulfill the minimum graduation credit requirements.
- VI. For those enrolled in the 2022 academic year, 35% of English-taught courses should be registered for graduation requirements.

For those enrolled in the 2023 and 2024 academic year, 50% of English-taught courses should be registered for graduation requirements.

- VII. For any matters not covered, please refer to the regulations of Graduate School of Advanced Technology.

Required Curriculum

必修課程 Required Curriculum		
課程名稱 Course Title	學分 Credit Points	備註 Note
研發實習 Internship	3	必修，一學期 1 semester
專題討論 Seminar	1	必修，四學期 4 semesters
專題研究 Special Project	1	必修，在學必修 Every semester
博士論文 Thesis	0	必修，畢業學期當修 Semester of graduation
學術倫理 Academic Ethics	0	必修，不及格者不得申請學位考試 Students who fail the Academic Ethics are Not eligible to apply Defense

Required Competency

必選修課程 (六選一) Required Competency (Choose one out of six)		
學位 Degree	課程名稱 Course Title	學分 Credit Points
碩博 Ms. Ph.D.	固態物理學一 Solid State Physics(I)	3
	積體電路工程 Integrated Circuit Technology	3
	半導體元件物理 Physics of Semiconductor Devices	3
	材料熱力學 Thermodynamics of Materials	3
	電子顯微鏡學 Electron Microscopy	3
	電磁學二 Electromagnetics(II)	3

Elective Curriculum

選修課程 Elective Curriculum		
學位 Degree	課程名稱 Course Title	學分 Credit Points
碩博 Ms. Ph.D.	金氧半電容元件 MOS Capacitor Device	3
	量子物理與應用 Principles and Applications of Quantum Physics	3
	先進半導體與顯示技術 Advanced Technologies for Semiconductor and Display	3
	有機光電半導體與元件 Organic Semiconductors for Optoelectronic and Electronic Devices	3
	光電半導體物理 Semiconductor Physics in Optical-electronics	3
	半導體雷射原理 Principles of Semiconductor Lasers	3
	微感測器 Micro Sensors	3
	量子電子學一 Quantum Electronics(I)	3
	數位積體電路工程 Digital IC Engineering	3
	記憶體電路技術 Memory Circuit Technology	3

選修課程 Elective Curriculum		
學位 Degree	課程名稱 Course Title	學分 Credit Points
碩博 Ms. Ph.D.	奈米電子學 Nanoelectronics	3
	磁性材料 Magnetic Materials	3
	材料分析 Materials Analysis	3
	表面分析技術 Surface Analysis Technology	3
	訊號完整性 Signal Integrity	3
	系統構裝電源完整性 Power Integrity for System-in-Packages	3
	電磁相容 Electromagnetic Compatibility	3
	圖解 MOS 元件 Schematic MOS Devices	2
	先進積體電路元件及技術 Advanced IC Devices and Technologies	3
	半導體材料與元件量測技術 Semiconductor Material and Device Characterization	3
	鐵電材料與元件技術 Ferroelectric materials and component technology	3
	半導體產業面面觀、經驗分享與實際演練 Semiconductor Industry Experiences Sharing	2
	異質整合-3D IC 技術簡介與應用 Heterogeneous Integration-3D IC Technology and Application	1

* 課程非於每學年開授，請依本校課程資訊與選課系統公告規劃選課。

Please refer to the current course catalog for the actual course offerings each semester.