Program for Integrated Circuit Design and Automation, Graduate School of Advanced Technology, National Taiwan University
Degree Regulations for the Ph.D. Program

I. Duration of Study: The minimum and maximum duration of study is 2 to 7 years.

II. Ph.D. Students (Regular Track):

i. A minimum of 15 credits is required for graduation (excluding Seminar, Special Project, Academic Ethics, and Internship courses).

ii. At least 9 credits of professional electives are required from the program (courses subject to advisor approval).

III. Direct-entry Ph.D. Students:

i. A minimum of 27 credits is required for graduation (excluding Seminar, Special Project, Academic Ethics, and Internship courses).

ii. At least 9 credits of professional electives are required from the program (courses subject to advisor approval).

iii. At least 15 credits of professional electives are required from the program (courses subject to advisor approval). (Applicable to students admitted from Spring 2025 onward)

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. Proportion of English-Taught Courses:

i. For those enrolled in Fall 2022 or Spring 2023, at least 35% of the minimum graduation credits must consist of English-taught courses; Ph.D. Students (Regular Track) must complete at least 5 credits, and Direct-entry Ph.D. Students must complete at least 9 credits.

ii. For students admitted in Fall 2023, Spring 2024, Fall 2024, or Spring 2025, at least 50% of the minimum graduation credits must consist of English-taught courses; Ph.D. Students (Regular Track) must complete at least 8 credits, and Direct-entry Ph.D. Students must complete at least 14 credits.

iii. For students admitted in Fall 2025, Spring 2026, Fall 2026, or Spring 2027, at least 55% of the minimum graduation credits must consist of English-taught courses; Ph.D. Students (Regular Track) must complete at least 8 credits, and Direct-entry Ph.D. Students must complete at least 15 credits.

VII. For any issues 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

Professional Electives

選修課程 Elective Curriculum		
學位 Degree	**課程名稱 Course Title**	**學分 Credit Points**
碩博 Ms. Ph.D.	電腦輔助積體電路系統設計 Computer-aided VLSI System Design	3
	類比積體電路 Analog Integrated Circuit	3
	演算法 Algorithms	3
	數位訊號處理架構設計 Digital Signal Processing in VLSI Design	3
	高等積體電路設計 Advanced Integrated Circuit Design	3
	數位視訊技術 Digital video technology	3
	系統晶片設計實驗 SoC Design Experiment	3
	通信數位積體電路設計 Digital Communication Integrated Circuits Design	3
	人工智慧架構與系統設計 Computing Architecture and System Design for AI Machine Learning	3
	高等類比積體電路 Advanced Analog Integrated Circuits	3
	鎖相迴路原理及應用 Theory and Application of Phase-locked Loop	3
	電力電子學 Power Electronics	3
	混合訊號積體電路設計 Mixed-Signal Integrated Circuit Design	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.	通訊積體電路設計 Design of Communication Integrated Circuits	3
	高等數位系統設計 Advanced Digital System Design	3
	射頻積體電路設計 Rf Integrated Circuit Design	3
	高速介面積體電路設計 High-speed interface bulk circuit design	3
	生醫電子電路設計 Bioelectronics Circuit Design	3
	系統晶片驗證 Soc Verification	3
	積體電路測試 VLSI Testing	3
	積體電路實體設計 VLSI Physical Design	3
	積體電路系統測試 VLSI System Testing	3
	邏輯合成與驗證 Logic Synthesis and Verification	3
	晶片系統封裝 Chip System Package	3
	電腦輔助分析與最佳化 Computer Aided Analysis & Optimization of Integrated Circuit	3
	應用數學邏輯特論 Special Treatise on Applied Mathematical Logic	3
	車用電子概論 Introduction to Automotive Electronics	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.