National Taiwan University
Ph.D. Program in Nanoengineering and Nanoscience
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（七選一） Required Competency (Choose one out of seven)		
學位 Degree	**課程名稱 Course Title**	**學分 Credit Points**
碩博 Ms. Ph.D.	近代物理 Modern Physics	3
	量子力學(一) Quantum Mechanics (I)	3
	量子力學(二) Quantum Mechanics (II)	3
	量子物理 Quantum Physics	3
	奈米科技導論 Introduction to Nanotechnology	3
	奈米科學與工程 Nanoscience and Nanotechnology	2
	精細元件與精密系統 Precision Elements and Systems	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.	材料化學 Materials Chemistry	3
	高等材料力學 Advanced Strength of Materials	3
	流體力學導論 Fundamental of Fluid Dynamics	3
	光學量測系統原理設計 Design Principle of Optical Measurement System	3
	精密量測 Precision Metrology	3
	半導體智慧製造系統概論 Introduction to Semiconductor Intelligent Manufacturing Systems	3
	壓電系統設計與製造 The Design & Construction of Piezoelectric Systems	3
	壓電振動能量擷取導論 Introduction to Piezoelectric Energy Harvesting	3
	微感測器特論 Special Topics on Microsensors	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.	有限元素法 Method of Finite Elements	3
	資料分析方法 Data Analytics	3
	微奈米尺度熱傳 Micro/Nanoscale Heat Transfer	3
	電漿材料製程技術 Plasma Materials Fabrication Technology	3
	生醫奈微米工程 Nano/micro Engineering in Biomedicine	3
	細胞微機電及微流體導論 Introduction to Cellular BioMEMS and Biomicrofluidics	3
	膠體與界面現象 Colloid and Interfacial Phenomena	3
	應用電化學 Applied Electrochemistry	3
	微感測器實務 Practices of Microsensors	3
	奈米材料與應用 Applications of Nanomaterials	3
	能源科學 Energy Science	3
	材料物性分析 Physical Characterizations of Materials	3
	電催化反應導論 Introduction of Electrocatalysis	3
	半導體智慧製造概論 Introduction to Semiconductor Intelligent Manufacturing	3
	半導體設備元件實務 Practice of Semiconductor Equipment Components	1
	半導體製程機台實務 Practice of Semiconductor Manufacturing Tools	1
	低維度半導體物理 Low-Dimensional Semiconductor Physics	3

* 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.