電子研究所碩士班

115 學年度

最低修業年限	一年
應修學分數	24 學分
應修（應選）課程及符合畢業資格之修課相關規定	一、固態電子組，電路與系統組共同必修： 1. 三必選一：電子專題研討固態組、電子專題研討系統組、本所開設之其他電子專題研討 外籍生四必選一:電子專題研討固態組、電子專題研討系統組、本所開設之其他電子專題研討、電機資訊學院國際學位學程之「專題研討」(新舊生適用) (自 100 學年度起，在學期間至少須通過二學期。) (自 96 學年度，正式核可之交換學生，出國一學期得免修電子專題研討一學期。) 2. 專題研究。(須通過四學期，各 1 學分，不計入畢業最低 24 學分內。提前畢業者不在此限，若需於學期中辦理畢業離校者，得以退選此課程。) 3. 欲進入半導體實驗室者，須選修「半導體實驗」課程，但其學分數不列入畢業最低 24 學分內。 二、固態電子組必修科目 1. 必修：半導體物理及元件(一) 2. 五必選二：a. 固態理論 b. 固態物理 c. 高等電磁學(一) d. 量子力學 e. 本組開設之其他專業課程，其中「量子力學」需先修過大學部的「近代物理」、「量子力學」、「量子化學」、「量子物理」、「固態物理」其中之一者方得選修該課程。 3. 固態組碩士新生，若大學未修過「近代物理」、「量子力學」、「量子化學」、「量子物理」、「固態物理」其中之一者均需補修大學部的「量子力學」課程。 三、電路與系統組必修科目 七必選三：a. 數位積體電路 b. 類比積體電路或射頻積體電路 c. 計算機結構 d. 計算機輔助設計特論或 VLSI 測試與可測試性設計 e. 數位訊號處理或隨機過程 f. 數位通訊或檢測與估計 g. 機器學習或深度學習 主修組別之專業科目須修滿 15 學分，其他則須為本所相關之科目，如為外組或外系所所開之課程，須經提出申請由本所認定。

Institute of Electronics, MS Program

Academic Year 2026

Mini. Term of Study	One year
Minimum Credits	24 Credits
Curriculum and Regulations	★ Common required elective courses for both the Solid State Electronics Group and the Circuits and Systems Group: 1.For domestic students, one out of the following three: Seminar on Solid State Electronics (formerly Seminar on Electronics (I) and (II)),Seminar on Circuits and Systems (formerly Seminar on Electronics (I) and (II)), and any other Seminar course offered by this Institute. For foreign students, one of the following four: Seminar on Solid State Electronics (formerly Seminar on Electronics (I) and (II)),Seminar on Circuits and Systems (formerly Seminar on Electronics (I) and (II)),any other Seminar course offered by this Institute, and Seminars offered by the EECS International Graduate Program of NYCU. (The above is applicable to both new and current students.) (Beginning with admissions of the 2011 academic year, a student must complete at least two semesters of the course during his/her study.) (Starting from academic year 2007, a properly approved outgoing exchange student may waive his/her Seminar for each semester he/she studies overseas.) 2.Graduate Research. (A student must pass this course for at least four semesters. The course carries one credit per semester, but is not counted towards the minimum 24 credits required for graduation. **The students who graduate earlier may not be limited by this condition, and need to graduate and leave in the middle of the semester may withdraw the course.)** 3. Students who need access to the Semiconductor Lab must take the corresponding lab courses, whose credits are not counted towards the fulfillment of the 24 required credits for graduation. ★ Solid State Electronics Group (1)Required: Semiconductor Physics and Devices (I) (2)2 out of the 5 selections below:a.State Theory b.Solid State Physics c.Advanced Electromagnetics (I) d.Quantum Mechanics e.Other specialty courses offered in this Group Note that the graduate-level Quantum Mechanics course above requires one of the following undergraduate courses as prerequisite: Modern Physics, Quantum Mechanics, Quantum Chemistry, Quantum Physics, and Solid State Physics. (3)A new master's student of this Solid State Electronics Group who has not taken any of the following courses must make it up by taking the undergraduate-level Quantum Mechanics course: Modern Physics, Quantum Mechanics, Quantum Chemistry, Quantum Physics, and Solid State Physics. (Please refer to the application form concerning the Quantum Mechanics course later in this handbook.) ★ Circuits and Systems Group 3 out of the **7** selections below:a.Digital Integrated Circuits b.Analog Integrated Circuits or RF Integrated Circuits c.Computer Architecture d.Special Topics in Computer Aided Design or VLSI Testing and Design for Testability e. Digital Signal Processing or Stochastic Processes f. Digital Communication or Detection and Estimation g. Machine Learning or Deep Learning

電子研究所博士班

115 學年度

最低修業年限	二年
應修學分數	18 學分
逕博應修學分數	24 學分
應修（應選）課程及符合畢業資格之修課相關規定	一、固態電子組，電路與系統組共同必選： 1. 博一、博二之選課均須經由所長或指導教授認可。 2. 畢業前至少須修畢專業科目(不含專題研討及專題研究)共 18 學分，其中包含本所開設之專業必選課程(所屬組別)共 9 學分和專業選修課程共 3 學分，其餘學分須修習副修之外組主要課程共 6 學分。其中如已申請免修必選課程或外組課程者則仍須另修滿 18 學分專業科目。 3. 博士生如在大學部或研究所已修過本所要求之專業科目(必選課程 9 學分及專業選修 3 學分須為本所課程，外組課程 6 學分須為台灣聯合大學系統內之研究所課程)，經指導教授與所長同意，可於入學時申請畢業學分抵減。課程承認訂十年為有效期限。 4. 碩士逕讀博士學位學生畢業前碩士班及博士班已修及格課程合計至少應修滿 24 學分(含副修之外組主要課程) 其中包含本所開設之專業必選課程(所屬組別)共 9 學分和專業選修課程共 9 學分，其餘學分須修習副修之外組主要課程共 6 學分。學士逕讀博士學位學生畢業前至少須修畢專業科目（不含專題研討及專題研究）共 24 學分，其中包含本所開設之專業必選課程(所屬組別)共 9 學分和專業選修課程共 9 學分，其餘學分須修習副修之外組主要課程共 6 學分。惟可比照碩士班規定申請抵免學分。 5. 博一、博二均須修專題研究四學期及專題研討二學期(四必選一：電子專題研討固態組、電子專題研討系統組、本所開設之其他電子專題研討、電機資訊學院國際學位學程之專題研討)並通過及格，否則應予重修。自 96 學年度，正式核可之交換學生，出國一學期得免修電子專題研討一學期。 6. 欲進入半導體實驗室需選修「半導體實驗」課程，其學分數不列入專業必選修科目 18 學分(直攻生 24 學分)內。 二、固態電子組：四必選三：a. 固態理論 b. 高等電磁學(一) c. 半導體物理及元件(一) d. 本組開設之其他專業課程 三、電路與系統組：七必選三：a. 數位積體電路 b. 類比積體電路或射頻積體電路 c. 計算機結構 d. 計算機輔助設計特論或 VLSI 測試與可測試性設計 e. 數位訊號處理或隨機過程 f. 數位通訊或檢測與估計 g. 機器學習或深度學習

Institute of Electronics, Ph.D. Program

Academic Year 2026

Mini. Term of Study	Two Years
Minimum Credits	18 Credits
Minimum Credits for Direct-Entrance Ph.D.	24 Credits
Curriculum and Regulations	I. Common Required Electives Courses for the Solid State Electronics Group and the Circuits and Systems Group： 1. Ph.D. students of the 1st and 2nd years, course selection must be approved by the Director of the Institute or advising professor. 2. A Ph.D. student must complete at least 18 credits of specialty courses (excluding Seminar courses and Graduate Research) before graduation. These credits must include at least nine (9) credits of required courses and three (3) credits of elective courses offered by the institute for the respective group. Six (6) credits of main courses in a minor area or minor areas outside his/her Group.Student who has applied for waiving of required electives or minor courses is nonetheless required to complete 18 credits of specialty courses. 3. Should a Ph.D. student in his/her undergraduate or master's study have taken courses requested (i.e. Nine (9) credits of required electives and three (3) credits of general electives must be graduate courses of this Institute. Six (6) credits of main courses in a minor area or minor areas outside his/her Group must be graduate courses of University System of Taiwan (UST)), after being approved by the Director of the Institute and the students' respective advisors, he/she may apply for credit deduction during the registration and course selection period of the first semester. Only credits acquired within the most recent ten years are allowed to be deductable. 4. Master's students directly pursuing a Ph.D. degree must complete at least 24 credits of professional courses before graduation (including courses completed and passed during the master's and Ph.D. programs). This includes nine (9) credits of required courses and nine (9) credits of professional elective courses offered by the institute for the respective group. Six (6) credits of main courses in a minor area or minor areas outside his/her Group. Bachelor's students directly pursuing a Ph.D. degree must also complete at least 24 credits of professional courses before graduation, including nine (9) credits of required courses and nine (9) credits of professional elective courses offered by the Institute for the respective group. The remaining credits must be earned by taking 6 credits of core courses from other Group or other departments. However, credit exemptions may be applied for following the regulations of the master's program. 5. Ph.D. students of the 1st and 2nd years must complete four semesters of Graduate Research and two semesters of the following seminars courses : *Seminar on Solid State Electronics, *Seminar on Circuits and Systems, *Other Seminar course offered by this Institute, and *Seminars offered by the EECS International Graduate Program of NYCU. Starting from academic year 2007, a properly approved outgoing exchange student may waive his/her Seminar for each semester he/she studies overseas. 6. Students who need to enterthe Semiconductor Lab must take the corresponding lab courses, whose credits are not counted toward the 18 required credits of the specialty courses (24 credits are required for direct-pursuit students). II. Solid State Electronics Group 3 out of the following 4 selections:a.Solid State Theory b.Advanced Electromagnetics (I) c.Semiconductor Physics and Devices (I) d.Other specialty courses of the Solid State Electronics Group III. Circuit and System Group 3 out of the following **7** selections: a.Digital Integrated Circuits b.Analog Integrated Circuits or RF Integrated Circuits c.Computer Architecture d.Special Topics in

	Computer Aided Design or VLSI Testing and Design for Testability e. Digital Signal Processing or Stochastic Processes f. Digital Communication or Detection and Estimation g. Machine Learning or Deep Learning