List of Required Elective Courses for the Master’s Program

Amended by the Curriculum Committee, 29 March, 2019

A student must finish all the required elective courses of the master’s program in the duration allowed for master’s study. A student who has taken a required elective course below or has taken a graduate-level course of equivalent contents may nevertheless apply for waiving the required elective course if he/she has obtained a grade 70 or above for the course, even if it is not qualified for credit transfer to this Institute. However, such a course shall not be counted towards the fulfillment of the student’s graduation credits requirement.

Required elective courses:

★ 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 NCTU.

(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.)

1. **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. A student who graduates in one year may pass the course for two semesters only, and a student who graduates in one and a half years may pass the course for three semesters only. If a student completes the oral thesis defense in the middle of the second semester in the second year and fulfills other graduation requirements for early graduation, he/she may withdraw this course for that semester and is exempted from having to pass it for that semester. This regulation applies to both new and current students. For students admitted up until the 2010 academic year, their credits earned for “Seminar” are considered equivalent; however, note that this “Seminar” is different from “Seminar on Electronics.”)

3. Students who need access to the Semiconductor Lab must take the corresponding lab/training 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:
3. **Solid State Theory**
4. **Solid State Physics**
5. **Advanced Electromagnetics (I)**
6. **Quantum Mechanics**
7. **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.

1. 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 6 selections below:

1. **Digital Integrated Circuits**
2. **Analog Integrated Circuits** or **RF Integrated Circuits**
3. **Computer Architecture**
4. **Special Topics in Computer Aided Design** or **VLSI Testing and Design for Testability**
5. **Advanced Digital Signal Processing**
6. **Digital Communication**