

Marquette University

Department of Electrical and Computer Engineering

Five-Year BS/MS Degree Program

PROGRAM

The Department of Electrical and Computer Engineering offers a Five Year BS/MS Program where eligible students may obtain both a Bachelor's degree and a MSEE degree in five years. Students with a QPA of 3.5 or better in their Mathematics, Science and Engineering courses are eligible to apply to this program in their junior year. This program is available to undergraduate students in Electrical and Computer Engineering or Physics.

Students in the program may take graduate courses in their junior or senior undergraduate year (up to 12 credits total, minimum grade of B required). Up to **nine** graduate credits can count toward both degrees. Remaining courses and credits toward the M.S. degree are completed during the fifth year. For students following Plan A (Thesis Option - see below), work on the thesis research should begin during the summer between the junior and senior undergraduate years. Students following Plan B (Non-Thesis Option - see below), can also complete the program in five years.

TO APPLY

Students wishing to participate in the Five Year Program must apply and be admitted to the program before their senior year. Students need to fill out an "Application for Graduate Admission and Financial Aid" form (available from the Graduate School) and follow the guidelines in both the Marquette Graduate Bulletin and the EECE Department's Graduate Student Handbook (available from the department office or online) for admission to the program. On the application, in the section "Graduate School Plans", students should check "BS to MS".

TAKING COURSES FOR GRADUATE CREDIT

Undergraduate students wishing to take courses for graduate credit must fill out a "Permission to Enroll in a Graduate Course" form, available from the Graduate School. This is done for both 5000-level and 6000-level courses. Students in the Five-Year Program wishing to apply course(s) toward both degrees must check the box "5 year program" in the "Additional Information" section of the form. Permission forms for courses applied only to the M.S. degree should check the box "I do not intend to use this course to satisfy undergraduate requirements". For 5000-level courses, students must also fill out a "Graduate Credits Requested for Undergraduate Course" form.

Once the undergraduate degree is completed, the student must fill out a "Master's Degree Transfer of Credit Request" form to formally transfer the coursework taken into their MS program. *All coursework taken as an undergraduate must meet university transfer guidelines before it can be used toward the Master's degree, including a maximum of 12 transfer credits and a minimum grade of B in all courses.*

FINANCIAL AID

Limited graduate financial aid is available in the form of TA/RA assistantships during year 5 of the program. These awards are competitive and are based on academic merit, not financial need. Students in the Five-Year program are not eligible for graduate financial aid until the B.S. degree is completed, and aid is typically limited to students participating in Plan A (Thesis Option).

SAMPLE PROGRAM PLANS

Students in the Five-Year program must carefully choose their courses to successfully finish within five years. During the senior year, it is expected that up to **nine** graduate-level credits be completed that are applied to both the BS and MS degrees, and that up to **three** additional graduate credits be completed that apply solely toward the MS degree. This can normally be accomplished with requiring a course overload. Up to twelve credits toward the MS degree will have been completed once the undergraduate degree is awarded, which can be transferred into the graduate degree program.

Typically, these twelve graduate credits are earned in two upper division electives and the two required EECE MS courses EECE 6010 and EECE 6020 (one of which may be used as an undergraduate math/science elective). It is **STRONGLY** recommended that students plan ahead to reduce the course load in the senior year by shifting one or more of their core electives to the junior year or, if possible, even earlier in their program.

PLAN A (THESIS OPTION)

The fifth year will require 12 additional credits of course work and 6 credits of EECE 6999, Thesis Research. Additionally, a Master's thesis must be written on the student's research, and defended in an oral Comprehensive Examination. Plan A requirements are outlined in detail in the EECE Graduate Student Handbook, and include:

EECE 6010

EECE 6020

EECE 6999 (6 credits)

18 credits of additional course work, of which

at least 6 credits must be at the 6000 level or above*

at least 12 credits must be in the EECE*

at least 3 credits of EECE courses must be at the 6000 level or above*,

* a given course may satisfy more than one of these requirements

Oral comprehensive exam to defend thesis

PLAN B (NON-THESIS OPTION)

The fifth year will require 18 additional credits of course work. Plan B requirements are outlined in detail in the EECE Graduate Student Handbook, and include:

EECE 6010

EECE 6020

24 credits of additional course work, of which

at least 12 credits must be at the 6000 level or above*,

at least 15 credits must be in EECE*

at least 6 credits must be in EECE at the 6000 level or above*

none may be independent study or research seminar credits

* a given course may satisfy more than one of these requirements

Written comprehensive examination at end of program (typically January of 5th year)

FOR ADDITIONAL INFORMATION

Detailed degree requirement guidelines are given in the EECE Graduate Student Handbook and the Marquette Graduate Bulletin, available online and in the EECE department office.

If you have any additional questions concerning the Five-Year BS/MS Program, please contact the Marquette University Graduate School or the Department of Electrical and Computer Engineering Director of Graduate Studies.

GUIDELINES AND NOTES

General guidelines

- Up to nine credits of 5000-level design, technical, science/math, or other electives may be designated as dual-credit courses counting for both degrees. In cases where a course is offered simultaneously at the 4000-level and 5000-level, students must register for the 5000-level in order for it to count toward the MS degree. Students need to remember to fill out the "Permission to Enroll in a Graduate Course" and Graduate Credits Requested for Undergraduate Course" forms for each 5000-level course.
- The required graduate courses EECE 6010 and EECE 6020 qualify to be used to fulfill the math/science elective undergraduate requirement. To take these or other 6000-level courses, the "Permission to Enroll in a Graduate Course" form needs to be completed.
- All students interested in the 5 Year Program should take ELEN 3020 Linear Systems (prerequisite material for EECE graduate studies) during their Junior Year.
Note: For EE and ECE majors, this is already a required course. For COEN majors, this may be used as a technical elective, and for PHYS students it may be used as a general elective.
- Students must obtain a minimum grade of B in all courses taken while still an undergraduate, in order for them to count for their MS program. Once students graduate with their undergraduate degrees, they should notify the graduate school that they have done so and also fill out a "Master's Degree Transfer of Credit Request" to formally transfer this coursework.

Typical Plan A (Thesis Option) plan of study

Junior year: Students apply to the program, identify a faculty advisor with whom they would like to pursue a research project, and begin learning about that area of study.

Senior year: Up to nine credits of 5000-level design, technical, science/math, or other electives are designated as dual-credit courses counting for both degrees, and three credits of 5000-level or 6000-level coursework is taken to apply to the MS degree only. Students continue work on their thesis project with their faculty advisor

5th year: Students take an additional 12 credits of coursework, plus 6 credits of thesis, during which they complete, write up, and defend their MS thesis.

Typical Plan B (Non-Thesis Option) plan of study

Junior year: Students apply to the program.

Senior year: Up to nine credits of 5000-level design electives, technical electives, or science/math electives are designated as dual-credit courses counting for both degrees, and three credits of 5000-level or 6000-level coursework is taken to apply to the MS degree only. Students continue work on their thesis project with their faculty advisor

5th year: Students take an additional 18 credits of coursework, and study for the comprehensive examination, which they take at the January offering.