

Marquette University

Department of Electrical and Computer Engineering

Five-Year, BS/MS Degrees Program

PROGRAM

The Department of Electrical and Computer Engineering offers a program where eligible students may obtain both a BSEE degree and a MSEE degree in five years. Students with a QPA of 3.25 or better in their Mathematics, Science and Engineering courses are eligible to apply to this program in their junior year.

Students in the program may take masters level courses in their **junior or senior undergraduate year depending upon their program**. Up to **nine** graduate credits 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 (Course Option - see below), can also complete the program in five years. Summer session course work may be required for students pursuing the Plan B (Course Option - see below).

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 Graduate Bulletin** and the EECE Department's "**Graduate Student Handbook**" (available from the Director of Graduate Studies) for admission to the program. On the application, in the section "Graduate School Plans", you must check the box "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 200-level and "pound-sign" 100-level courses (the #-sign indicates that the course is available for graduate credit). Students in the five-year program wishing to apply course(s) toward both degrees must check the box marked "5 year program" in the "Additional Information" section of the form. Permission forms for courses applied only to the M.S. degree should have the box marked "I do not intend to use this course to satisfy undergraduate...". Once the student has completed the undergraduate degree, the permission form is no longer necessary.

FINANCIAL AID

Graduate financial aid is available in the form of TA/RA assistantships to graduate students. 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.

DETAILED 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 **nine** graduate-level credits be completed that are applied to both the BS and MS degrees, and that **three** additional graduate credits be completed that apply solely toward the M.S. degree. This represents three credits over and above the undergraduate requirements for the undergraduate degree, but does not constitute an overload. Twelve credits toward the M.S. degree will have been completed once the undergraduate degree is awarded.

The twelve graduate credits typically are earned in two upper division electives (that count toward both degrees), and the two required courses in the M.S. program (EECE 205 that counts toward both degrees and EECE 206 that counts toward the MSEE degree only). Completion of the M.S. degree must follow one of the three options, as described below.

It is **STRONGLY** recommended that students plan ahead to reduce the course load in the senior year by shifting one or more of the 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 299, Thesis Research. Additionally, a Master's thesis must be written on the student's research, and defended in an oral Comprehensive Examination. Requirements for the course work are as follows (this includes those courses taken during the senior year):

EECE 205

EECE 206

EECE 299(6 credits)

18 credits of additional course work, of which

at least 3 credits must be at the 200 level or above in the "major field"*,

at least 6 credits must be at the 200 level or above*

at least 6 credits must be In the "major field"*

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

PLAN B (COURSE OPTION)

The fifth year will require 24 additional credits of course work. Requirements for the course work are as follows (this includes those courses taken during the senior year):

EECE 205

EECE 206

30 credits of additional course work, of which

at least 12 credits must be at the 200 level or above*,

at least 18 credits must be in the "major field"*

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

FOR ADDITIONAL INFORMATION

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

This program is subject to change so please consult the Department's web page for the latest program requirements at <http://www.marquette.edu/engineering/pages/AllYouNeed/electric.html>

5 Year BS/MS Program - Electrical & Electronic Engineering Major

It is STRONGLY recommended that students plan ahead to reduce the course load in the senior year by shifting one or more of the core electives to the junior year or, if possible, even earlier in their program.

Senior Year

fall term		spring term	
EECE 114	3	EECE 147	3
EECE 142	2	EECE/Technical elective #	3
EECE 146	3	Theology elective (e)	3
EECE Design elective#	3	Core elective (c)	3
Core elective (c)	3	Core elective (c)/Free elective (d)	3
EECE 205†	3	EECE 206*	3
EECE 297	0	EECE 297	0
TOTAL	17	TOTAL	18

Both of these courses (up to 6 credits) count for both degrees. Must be taken as “#1xx-level” courses, in major field.

† This course counts as the Science/Math elective for the undergraduate degree and also for the MS degree.

* This course counts for the MS degree only.

(c),(d),(e) these footnotes refer to information associated with the University Core of Common Studies. Explanation of these footnotes is available in the most recent undergraduate bulletin.

Graduate Year - Thesis option

fall term		spring term	
EECE 299	3	EECE 299	3
200 level, major field	3	200 level (may be in major field)	3
100#, or 200 level, major field†	3	100# or 200 level (may be in major field)	3
EECE 297	0	EECE 297	0
TOTAL	9	TOTAL	9

Graduate Year - Course option

fall term		spring term	
100#, or 200 level, major field	3	100# or 200 level, major field†	3
100#, or 200 level, major field	3	100# or 200 level, major field†	3
200 level, major field	3	200 level (may be in major field)	3
200 level, major field	3	200 level (may be in major field)	3
EECE 297	0	EECE 297	0
TOTAL	12	TOTAL	12

† If the #1xx courses taken in senior year are in the major field, these courses may be chosen from technical courses outside the major field

5 Year BS/MS Program - Electrical & Computer Engineering Major

It is STRONGLY recommended that students plan ahead to reduce the course load in the senior year by shifting one or more of the core electives to the junior year or, if possible, even earlier in their program.

Senior Year

fall term		spring term	
EECE 142	2	EECE 147	3
EECE 146	3	Core elective (c)	3
EECE Design elective #	3	Core elective (c)/Free elective (d)	3
Core elective (c)	3	Program elective #	3
Theology elective	3	EECE/Technical elective #	3
EECE 205†	3	EECE 206*	3
EECE 297	0	EECE 297	0
TOTAL	17	TOTAL	18

Both of these courses (up to 6 credits) count for both degrees. Must be taken as “#1xx-level” courses in major field.

† This course counts as the Science/Math elective for the undergraduate degree and also for the MS degree.

* This course counts for the MS degree only.

(c),(d),(e) these footnotes refer to information associated with the University Core of Common Studies. Explanation of these footnotes is available in the most recent undergraduate bulletin.

Graduate Year - Thesis option

fall term		spring term	
EECE 299	3	EECE 299	3
200 level, major field	3	200 level (may be in major field)	3
100#, or 200 level, major field†	3	100# or 200 level (may be in major field)	3
EECE 297	0	EECE 297	0
TOTAL	9	TOTAL	9

Graduate Year - Course option

fall term		spring term	
100#, or 200 level, major field	3	100# or 200 level, major field†	3
100#, or 200 level, major field	3	100# or 200 level, major field†	3
200 level, major field	3	200 level (may be in major field)	3
200 level, major field	3	200 level (may be in major field)	3
EECE 297	0	EECE 297	0
TOTAL	12	TOTAL	12

† If the #1xx courses taken in senior year are in major field, these courses may be chosen from technical courses outside the major field

5 Year BS/MS Program - Computer Engineering Major

It is recommended that for the BS/MS Program in Computer Engineering students take EECE 113 in the first semester of their junior year to prepare for the graduate courses in their senior year. EECE 113 counts as a COEN/Technical elective in the Computer Engineering major.

Junior Year

fall term		spring term	
EECE 112	4	Math 145	3
Math 164	3	COEN 171	3
Chem 1	4	COEN 183	3
Phil 104	3	EECE 143	2
EECE 113 #	4	COEN/Tech elective (2) ##	3
		Core elective (c)	3
TOTAL	18	TOTAL	17

Senior Year

fall term		spring term	
COEN 140	3	COEN 147	3
COEN 146	3	COEN elective (2) ##	3
Core elective (c)	3	COEN elective (2) ##	3
COEN elective (2) ##	3	COEN elective (2) ##	3
EECE 205 †	3	Core elective (c)/Free elective (d)	3
Theology elective (e)	3	EECE 206 *	3
EECE 297	0	EECE 297	0
TOTAL	18	TOTAL	18

counts as a COEN/Technical elective in the COEN program.

Two of these courses (up to 6 credits) count for both degrees. Must be taken as “#1xx-level” courses in major field.

† counts as a COEN/Technical elective in the COEN program and also for the MS degree.

* This course counts for MS degree only.

- (2) At least five of the seven electives must be COEN design electives. Of the five COEN design electives, one must in the Hardware Engineering area, one must be in the Software Engineering area, and one must be in either the Intelligent Systems area or the Applications area. Of the five COEN design electives, three must be in one of the following areas: Hardware Engineering, Software Engineering, Intelligent Systems, or Applications. A course listed in two concentrations areas may be counted toward only one elective requirement.

(c),(d),(e) These footnotes refer to information associated with the University Core of Common Studies. Explanation of these footnotes is available in the most recent undergraduate bulletin.

Graduate Year - Thesis option

fall term			spring term	
EECE 299	3		EECE 299	3
200 level, major field	3		200 level (may be in major field)	3
100#, or 200 level, major field†	3		100# or 200 level (may be in major field)	3
EECE 297	0		EECE 297	0
TOTAL	9		TOTAL	9

Graduate Year - Course option

fall term			spring term	
100#, or 200 level, major field	3		100# or 200 level, major field†	3
100#, or 200 level, major field	3		100# or 200 level, major field†	3
200 level, major field	3		200 level (may be in major field)	3
200 level, major field	3		200 level (may be in major field)	3
EECE 297	0		EECE 297	0
TOTAL	12		TOTAL	12

† If the #1xx courses taken in senior year are in major field, these courses may be chosen from technical courses outside the major field