

**TO:** The Engineering Faculty

**FROM:** The Faculty of the School of Engineering Education

**RE:** Change in Engineering Master of Science in Engineering Education (MS ENE)

The Faculty of the School of Engineering Education has approved the following change to the Master of Science in Engineering Education from the College of Engineering. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**DESCRIPTION/BACKGROUND:**

Currently, the Master of Science in Engineering Education (MS ENE) requirements include **six credit hours of Engineering Education (ENE) electives** "selected from a specified group of ENE courses." The original list of courses was short. We are asking that the list of elective courses be expanded as described in the rationale.

**RATIONALE:**

As the MS ENE program has grown and drawn students from a broader range of backgrounds, the students have indicated an interest in a wider variety of ENE courses. We believe that any of the ENE graduate courses could be of value, depending on the student's current job or career plans. Thus, we want to change the requirement to "six elective credits of ENE or ENE-relevant courses to be selected from any 500 or 600 level ENE courses not required in the Engineering Education Foundation or any education research methods or assessment courses or social science statistics courses approved by the Engineering Education Graduate Chair. The majority of the credits for the MS ENE degree must be from ENE courses."

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Head/Director of the School of Engineering Education

Link to Curriculog entry:

<https://purdue.curriculog.com/proposal:29045/form>

*Please attach documentation detailing the change in curriculum.*

Attached is the current plan of study for the MS ENE. We want to remove the words highlighted in yellow and add the words highlighted in green. We can then remove the table of ENE electives as well.



# MS ENE Plan of Study

## Milestones, Timeline and Deadlines

As a graduate student, you must submit a Plan of Study (POS) that lists the specific courses and any other requirements that you expect to complete toward your degree. The plan initially is approved by your Graduate Advisory Committee and later approved by the head of the ENE Graduate Program, the school head (if requested by the school), and the dean of the Graduate School.

- In consultation with your faculty advisor, you will select elective credit courses that reflect your previous degrees and future plans after completing 9 credits in this program.
- With guidance from the graduate program manager, you will prepare and submit a POS listing coursework approved by your faculty advisor after completion of 15 credits in the program.
- Before the start of the semester prior to the semester that you plan to graduate, you will complete and submit your portfolio.

The non-thesis MS ENE requires completion of 30 credits, with 15 of those credits specified as the 'Engineering Education Foundation' and 15 credits of electives.

## MS ENE Required Courses\* - Engineering Education Foundation

Course Number	Course Name	Credit Hours
ENE 50101	Foundations of Engineering Education	3
ENE 50200	History and Philosophy of Engineering Education	3
ENE 50300	Engineering Education Inquiry	3
ENE 50400 or ENE 50500	Leadership, Policy and Change in STEM Education <b>or</b> Theories of Development in Engineering Thinking	3
ENE 50600	Content, Assessment and Pedagogy	3

Course Number	Course Name	Credit Hours
ENE 69000	Seminar in Engineering Education (Must be taken in fall and spring)	0

## MS ENE Electives

For the non-thesis MS ENE, the student is required to take 15 credit hours of elective specialization comprised of appropriate graduate level coursework in ENE and/or other programs. The elective specialization must be coherent, thematic, and named accordingly, with approval by the student's advisor. The elective courses fall into two groups – at least 6 credit hours to be selected from a specified group of ENE courses six elective credits of ENE or ENE-relevant courses to be selected from any 500 or 600 level ENE courses (not including courses used for the Engineering Education Foundation) or any education research methods or assessment courses or social science statistics courses approved by the Engineering Education Graduate Chair plus 9 additional credit hours which will be determined in consultation with (and require approval of) the advisor. Selection of those 9-credit hours will be based, in part, on the student's previous degrees and future plans. The majority of the credits for the MS ENE degree must be from ENE courses. Students who complete ENE 50400 as part of the Engineering Education Foundation may complete ENE 50500 as an ENE elective, and vice versa.

Course Number	Course Name	Credit Hours
ENE 50500	Theories of Development in Engineering Thinking	3
ENE 50400	Leadership, Policy and Change in STEM Education	3
ENE 68500	Engineering Education Methods	3
ENE 68700	Mentored Teaching	1
ENE 59500	Exploring Alternative Career Paths as an Engineering Educator	3
ENE 69500	Succeeding as an Engineering Professor	3

## Additional Credits

Students holding a bachelor's but not a master's degree in an engineering field must take 6 credit hours of a coherent sequence of graduate courses (500-600 level) in an engineering field other than engineering education plus 3 additional credit hours of electives with approval of the advisor. Students holding a master's degree in engineering, in consultation with and the approval of the advisor, will select 9 credit hours of courses that best serve the student's needs.

## **Portfolio Demonstrating Six Competencies**

The Engineering Education Graduate Competencies consist of 10 principles developed to engage students and develop critical thinking skills. The Online MS ENE Master's Program requires students to complete six of the ten competencies organized into a portfolio. ENE 50101 introduces students to the competencies and initiates their focus on this requirement.