

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Engineering Education

RE: Fast Track Action for Clarification to General Education Requirements: BSE degree in Multidisciplinary Engineering (MDE)

The Faculty of the School of Engineering Education has approved the attached degree requirement clarification. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Summary of Proposed Changes:

This EFD clarifies MDE degree program requirements around the use of pass/no-pass course grading for all program requirements including the University general education requirement. Specifically, all courses applied to a MDE student's plan of study must be taken for a letter grade (i.e. A, B, C etc.), this includes general education elective courses which must be taken for a letter grade and achieve a grade of a C- or above to meet program requirements.

Detailed Degree Requirements:

See attachment.

Current Requirements:

Based on EFD 73-17. See attachment.

Effective Date:

Effective for all students entering Purdue Fall 2018 or later

Reasons:

EFD 73-17 updated the MDE program requirements to defer to the then new College of Engineering general education policy (ref EFD 39-14). This EFD clarifies the standing MDE program interpretation and application of EFD 39-14, requiring letter grading for any general education requirement.



Donna Riley, Kamyar Haghighi Head
Professor of Engineering Education

Existing

**120 credit Degree Requirements for
Bachelor of Science in Engineering (BSE) Degree
in Multidisciplinary Engineering**

| Definition | | Credits |
|---|--|---------------------|
| First-Year Engineering Program | | 29-33 |
| <ul style="list-style-type: none"> If the common first-year program in engineering is changed, the BSE requirements will be changed to reflect these changes. | | |
| Required sophomore mathematics | | 8-10 |
| <ul style="list-style-type: none"> Multivariate calculus (MA 26100), and linear algebra & differential equations, MA 26200 or (MA 26500 & 26600), or equivalent. | | |
| Sophomore Science selective | | 3-4 |
| <ul style="list-style-type: none"> ENE approved selective. | | |
| Statistics selective | | 3 counted elsewhere |
| <ul style="list-style-type: none"> ENE approved statistics course from the Department of Statistics or approved engineering statistics course. | | |
| Accreditation Requirement for Mathematics and Basic Sciences | | minimum of 30 |
| <ul style="list-style-type: none"> There must be a minimum of 30 credits of ENE approved mathematics and basic sciences (biological, chemical and physical). | | |
| Oral Communication | | 3 |
| <ul style="list-style-type: none"> Com 11400 or equivalent course taken from Engineering's General Education Program requirements. | | |
| Written Communication | | 3 or 4 |
| <ul style="list-style-type: none"> ENGL 106 or 108 or equivalent course taken from Engineering's General Education Program requirements. | | |
| General Education | | 17-18 |
| <ul style="list-style-type: none"> Follow Engineering's General Education Program requirements. If EPICS is used to satisfy the Science, Technology & Society Outcome, three credits of EPICS are required | | |
| Engineering | | minimum of 45 |
| <ul style="list-style-type: none"> Credits at 20000 + levels, of which at least 18 credits are at 30000+ levels and 6 credits of the 18 must be at 40000+ level. Maximum number of credits from any engineering discipline is 24. | | |
| Required Engineering Core | | |
| <ul style="list-style-type: none"> Can substitute or transfer equivalent courses except for IDE 30100, IDE 48700 and major design experience courses, which must be taken at Purdue-West Lafayette campus. | | |
| Topic: | Example Courses | Credits |
| Electrical Circuits | ECE 20100 or equivalent | 3 |
| Statics and Dynamics | (ME 27000 + 27400), A&AE 20300, (CE 29700 + 29800) or equiv | 3/6 |
| Fluid Mechanics | ME 30900 (1 cr. counts as lab), CE 34000, A&AE 33300 & 33300L (1 cr. Counts as lab), ChE 37700 (1 cr. Counts as lab) or equivalent | 3 |

| Definition | | Credits |
|---|---|--|
| Thermodynamics | ME 20000, ABE 20100, ABE 21000, ChE 21100 or equivalent | 3 or 4 |
| Engineering Economics | IE 34300 (3 cr) or IDE 48300 (1 cr) or equivalent | 1 or 3 |
| Major Design Experience | EPCS 41100 & 41200, IDE 48400 & 48500, or other approved major design experience courses. | 3 or 4 |
| Professional Preparation | IDE 30100 (1) and IDE 48700 (1) | 2 |
| Typical Engineering Core Total Credits | | |
| Most Common Core | | 22 |
| Engineering Selectives: Do parts a, b, and c. | | Credits |
| a. Three additional credits of engineering design | Must be approved by School of Engineering Education. | 3 |
| b. Three credits of ENE approved hands-on laboratory (not computer lab) | At least 2 credits must be in engineering. | 1 cr lab (may be non-engr) + 2 engr lab |
| c. ENE approved engineering course in materials or strength of materials | | 3 |
| Total Credits Engineering Selectives | | 8 engr + 1 cr lab |
| Engineering Area | | Credits |
| <ul style="list-style-type: none"> ▪ Each plan of study may include required engineering courses, engineering selectives and/or electives; may also include extra engineering laboratory or design credits. | | Typically 9-18 |
| Minimum Engineering Credits @ 20000 + Level | | 45 |
| Area | | Credits |
| <ul style="list-style-type: none"> ▪ Chosen to satisfy educational objectives. For each plan of study may include required courses, selectives and/or electives. | | Typically 8-16 |
| Minimum Required for Graduation | | 120 |
| Other Graduation Requirements: | | |
| <ul style="list-style-type: none"> ▪ Plans of study for all concentrations must be approved by the School of Engineering Education. All concentrations must be sufficiently different from plans of study in other Schools of Engineering (outside of ENE) so student's educational goals <i>could not be met in one of those Schools</i>. ▪ An overall Graduation Index of 2.0 or higher and a minimum GPA of 2.0 in the engineering courses at the 20000 level and higher included in the plan of study are required. ▪ All other Purdue University graduation requirements must be satisfied. | | |

Proposed

**120 credit Degree Requirements for
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| General Education | | 17-18 |
| <ul style="list-style-type: none"> ▪ Follow Engineering's General Education Program requirements. Students must take any course selected for a letter grade and earn a C- or better in order to receive credit for meeting the Foundational Learning Outcomes and this General Education requirement [a unit level requirement]. The P/NP option is not available for this requirement. ▪ <i>If EPICS is used to satisfy the Science, Technology & Society Outcome, three credits of EPICS are required</i> | | |
| Engineering | | minimum of 45 |
| <ul style="list-style-type: none"> ▪ Credits at 20000 + levels, of which <i>at least 18 credits are at 30000+ levels and 6 credits of the 18 must be at 40000+ level.</i> ▪ Maximum number of credits from any engineering discipline is 24. | | |
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