

TO: The Faculty of the College of Engineering

FROM: The Faculty of the School of Mechanical Engineering

RE: Updates to the BS in Mechanical Engineering Plan of Study

The Faculty of the School of Mechanical Engineering has approved the following updates to the BSME plan of study. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Background: The School of Mechanical Engineering has approved the following changes to the core BSME requirements:

1. A new Math course sequence, which replaces
MA 26200 (Linear Algebra and Diff. Eq.) + MA 30300 (Partial Diff. Eqns.)
with
MA 265 (Linear Algebra) + MA 266 (Ordinary Differential Equations) + ME 23900 (Intro. to Data Science for ME).
2. An updated design-manufacturing sequence to include two new courses: ME 26400 (Introduction to Manufacturing for Design) and ME 364 (Systematic Engineering Design). These courses replace the current ME 263 (ME Design Innovation and Entrp.) and one ME elective.
3. ME 16400 (Geometric and Annotation Modeling) has been added as an option to MFET 16300.

The changes to the catalog description are highlighted in this document. The updated plan of study is also attached.



Jitesh Panchal
Associate Head for Undergraduate Programs
Professor of Mechanical Engineering

128 Credits Required

Mechanical Engineering Major Requirements (67-68 credits)

Mechanical Engineering Major Courses (37 41 credits)

- [ME 20000 - Thermodynamics I](#) Credits: 3.00 ♦
- [ME 23900 – Intro to Data Science for Mechanical Engineers](#) Credits: 1.00 ♦
- [ME 27000 - Basic Mechanics I](#) Credits: 3.00 ♦
- ~~[ME 26300 – Introduction To Mechanical Engineering Design, Innovation And Entrepreneurship](#) Credits: 3.00 ♦~~
- [ME 26400 – Intro. to Manufacturing for Design](#) Credits: 3.00 ♦
- [ME 27400 - Basic Mechanics II](#) Credits: 3.00 ♦
- [ME 29000 – Mechanical Engineering Seminar](#) Credits: 1.00 (satisfies Science, Technology & Society for core)
- [ME 30800 - Fluid Mechanics](#) Credits: 3.00 ♦
- [ME 30801 - Fluid Mechanics Laboratory](#) Credits: 1.00 ♦
- [ME 31500 - Heat And Mass Transfer](#) Credits: 4.00 ♦
- [ME 32300 - Mechanics Of Materials](#) Credits: 3.00 ♦
- [ME 32301 - Mechanics Of Materials Laboratory](#) Credits: 1.00 ♦
- [ME 35400 - Machine Design](#) Credits: 3.00 ♦
- [ME 36400 – Systematic Engineering Design](#) Credits: 3.00 ♦
- [ME 36500 - Measurement And Control Systems I](#) Credits: 3.00 ♦
- [ME 37500 - Measurement And Control Systems II](#) Credits: 3.00 ♦
- [ME 46300 - Engineering Design](#) Credits: 3.00 ♦

Other Departmental Required Courses (21-22 20-21 credits)

The courses listed below are also included in Major GPA calculation.

- [ECE 20001 - Electrical Engineering Fundamentals I](#) Credits: 3.00 ♦
- [ECE 20007 - Electrical Engineering Fundamentals I Lab](#) Credits: 1.00 ♦
- [MA 26100 - Multivariate Calculus](#) Credits: 4.00 ♦
- ~~[MA 26200 – Linear Algebra And Differential Equations](#) Credits: 4.00 ♦~~

- ~~MA 30300 – Differential Equations And Partial Differential Equations For Engineering And The Sciences Credits: 3.00 ♦~~
- MA 26500 – Linear Algebra Credits: 3.00 ♦
- MA 26600 – Ordinary Differential Equations Credits: 3.00 ♦
- [MSE 23000 - Structure And Properties Of Materials](#) Credits: 3.00 ♦
- [PHYS 24100 - Electricity And Optics](#) Credits: 3.00 ♦ OR
- [PHYS 27200 - Electric And Magnetic Interactions](#) Credits: 4.00 ♦

Engineering Requirements for First Year (29-39 credits)

All courses in this area must have a C- or higher

Requirement #1 - Intro to Engineering I (2-4 credits)

- [ENGR 13100 - Transforming Ideas To Innovation I](#) Credits: 2.00

OR

- [ENGR 16100 - Honors Introduction To Innovation And The Physical Science Of Engineering Design I](#) Credits: 4.00

OR

- [EPCS 11100 - First Year Participation In EPICS I](#) Credits: 1.00 and
- [EPCS 12100 - First Year Participation In EPICS II](#) Credits: 1.00

OR

- [VIP 17911 - First Year Participation In Vertically Integrated Projects \(VIP\) I](#) Credits: 1.00 and
- [VIP 17912 - First Year Participation In Vertically Integrated Projects \(VIP\) II](#) Credits: 1.00

OR

- [ENGR 13000 - Transforming Ideas Into Innovations](#)

Requirement #2 - Intro to Engineering II (2-4 credits)

- [ENGR 13000 - Transforming Ideas Into Innovations](#) Credits: 4.00 or
- [ENGR 13200 - Transforming Ideas To Innovation II](#) Credits: 2.00 or
- [ENGR 13300 - Transforming Ideas To Innovation, EPICS/VIP](#) Credits: 2.00 or
- [ENGR 16200 - Honors Introduction To Innovation And The Physical Science Of Engineering Design II](#) Credits: 4.00

Requirement #3 - Calculus I (4-5 credits) - satisfies Quantitative Reasoning for core

- [MA 16100 - Plane Analytic Geometry And Calculus I](#) Credits: 5.00 or
- [MA 16500 - Analytic Geometry And Calculus I](#) Credits: 4.00

Requirement #4: Calculus II (4-5 credits)

- [MA 16200 - Plane Analytic Geometry And Calculus II](#) Credits: 5.00 or
- [MA 16600 - Analytic Geometry And Calculus II](#) Credits: 4.00

Requirement #5: Chemistry (4-6 credits) - satisfies Science #1 for core

- [CHM 11500 - General Chemistry](#) Credits: 4.00 or
- [CHM 11510 - General Chemistry I](#) Credits: 3.00

AND

- [CHM 11520 - General Chemistry I - Laboratory](#) Credits: 1.00 or
- [CHM 11530 - General Chemistry I - Virtual Laboratory](#) Credits: 1.00

OR

- [CHM 11100 - General Chemistry](#) Credits: 3.00 and
- [CHM 11200 - General Chemistry](#) Credits: 3.00

Requirement #6: Physics (4 credits) - satisfies Science #2 for core

- [PHYS 17200 - Modern Mechanics](#) Credits: 4.00

OR

[ENGR 16100 - Honors Introduction To Innovation And The Physical Science Of Engineering Design I](#) and

[ENGR 16200 - Honors Introduction To Innovation And The Physical Science Of Engineering Design II](#)

Requirement #7: First-Year Engineering Selective (3-4 credits)

- [CHM 11600 - General Chemistry](#) Credits: 4.00 or
- [CS 15900 - C Programming](#) Credits: 3.00 or
- [BIOL 11000 - Fundamentals Of Biology I](#) Credits: 4.00 or
- [BIOL 11100 - Fundamentals Of Biology II](#) Credits: 4.00

Requirement #8: Written and Oral Communication (6-7 credits) - could satisfy Written Communication, Information Literacy or Oral Communication for core

- Written Communication - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Oral Communication - Credit Hours: 3.00 (satisfies Oral Communication for core)

OR

- [SCLA 11000 - American Language And Culture For International Students I](#) Credits: 3.00
- [SCLA 11100 - Language And Cultural Exchange II: Texts And Contexts](#) Credits: 3.00

Other Program/Department Requirements

Mechanical Engineering Electives (9.6 credits)

- ME Elective I - Credit Hours: 3.00
- ME Elective II - Credit Hours: 3.00
- ~~ME Elective III - Credit Hours: 3.00~~

Note: *Any ME 30000, 40000, 50000 Level Course (Includes any ME Course not used to fulfill Major Course requirements.) These courses are not included in the major GPA calculation*

Other Departmental Requirements (14-15 credits)

- [MFET 16300 - Graphical Communication And Spatial Analysis](#) Credits: 2.00 ♦
- OR
- [ME 16400 - Geometric and Annotation Modeling](#) Credits: 3.00 ♦

Economics Selective - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)

- [ECON 25100 - Microeconomics](#) Credits: 3.00 or
- [ECON 25200 - Macroeconomics](#) Credits: 3.00

Technical Electives (9 credits) -see supplemental information for list of courses

- Technical Elective I - Credit Hours: 3.00
- Technical Elective II - Credit Hours: 3.00
- Technical Elective III - Credit Hours: 3.00

General Education Requirement (15 credits)

- General Education-I - Credit Hours: 3.00
- General Education-II - Credit Hours: 3.00
- General Education-III - Credit Hours: 3.00
- General Education-IV - Credit Hours: 3.00

- World & Cultural Affairs Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)

See supplemental information for specific requirements and list of courses

Elective (3 credits)

- Elective - Credit Hours: 3.00 See supplemental information no count list for information on courses that do not count.

Semester 1	Crs	Semester 2	Crs
FYE Required Courses		Continue with FYE Required Courses	
*total semester credit hrs may vary		*total semester credit hrs may vary	
		Gen. Ed. (GE-1)	3
Total	14	Total	18
Semester 3	Crs	Semester 4	Crs
ME 200	3	ME 264 (L)	3
ME 270	3	ME 274	3
ME 290	1	MA 266	3
MA 261	4	ECE 20001	3
MSE 230	3	ECE 20007 (L)	1
MFET 163 / ME 164	2	ME 239 Data Sc.	1
		Gen. Ed. (GE-2)	3
Total	16	Total	17
Semester 5	Crs	Semester 6	Crs
ME 30800	3	ME 364	3
ME 365 ((L) Even Wks)	3	ME 375 ((L) Odd Wks)	3
ME 323	3	ME 315 (L)	4
MA 265	3	Tech. El. (TE-1)	3
ME 32301 (L)	1	ME 30801 (L)	1
Econ El. (Econ) GE	3	Gen. Ed. (GE-3)	3
Total	16	Total	17
Fall 20__ (7)	Crs	Spr. 20__ (8)	Crs
ME 354	3	ME 463 (L)	3
PHYS 241	3	Tech. El. (TE-3)	3
ME El. (ME-1)	3	ME El. (ME-2)	3
Tech. El. (TE-2)	3	Free El. (free)	3
Wrld/Cult El (WAC)	3	Gen Ed. (GE - 4)	3
Total	15	Total	15