

UC 12740 14.

UNIVERSITY of **HOUSTON** | **ENGINEERING**

Department of Mechanical Engineering

APPROVED FEB 19 2014
M.M.

MEMORANDUM

RECEIVED JAN 31 2014
J.R.

To: The Undergraduate Curriculum Committee,
Cullen College of Engineering

From: Dr. J.R. Rao
Associate Chair, Department of Mechanical Engineering

Date: January 27, 2014

Re: Updates to the 2014-15 Catalog entry for the BSME degree

Dean's Signature: _____
David P. Shattuck

Date: 31 JAN 2014

The Department of Mechanical Engineering has voted to propose the following changes in the BSME degree program. After these changes, the total number of credit hours for this degree program remains unchanged at 124:

1. Remove "MECE 3334 - Thermodynamics II" from the 5th semester and replace it by moving "MECE 3338 - Dynamics and Control of Mechanical Systems" into its place from the 6th semester. The MECE 3334 is modified into a new course "MECE 4343 - Thermal Design" which is placed in the 7th semester. The creation of this new course is in response to our most recent accreditation report by ABET. (CBM003 form for this new course has been submitted).
2. Interchange MECE 2361 and ENGI 2304 in the current curriculum (we are not sure why the current sequencing is in place, since three years ago, we obtained approval via the CBM003 process to make ENGI 2304 a prerequisite for MECE 2361).
3. Remove "MECE 3371 - Numerical Methods for Mechanical Engineers" from the 6th semester and replace it with the new course, "MECE 3381- Introduction to Finite Element Methods for Mechanical Engineers". (CBM003 form for this new course has been submitted).

4. Remove "ECE 3336 - Introduction to Circuits and Electronics" from the 5th semester and replace it with the "Social Science Core Course" moved from the 7th semester.
5. Move the "Visual and Performing Arts Core Course" from the 8th semester to 6th semester, replacing MECE 3338 previously moved to 5th semester. (See #1 above).
6. Remove "MECE 4372- Mechanics-Controls-Vibrations Laboratory" from the 7th semester and replace it with the new course, "MECE 4343 -Thermal Design". (CBM003 form for this new course has been submitted).
7. Place the new course, "MECE 4331- Design of Machine Elements" into the 7th semester replacing the Social Science Core Course (See #3 above). (CBM003 form for this new course has been submitted).
8. Place a new "MECE 53XX - Mechanical Engineering Elective" in 8th semester replacing the "Visual and Performing Arts Core Course" previously moved (See #4 above).
9. Replace "MECE 4371 - Thermal-Fluids Laboratory" in the 8th semester with "MECE 4371-Thermal-Fluids Laboratory **or** MECE 4372 - Mechanics-Controls-Vibrations Laboratory".

In addition, the following changes are proposed for the Catalog description of the BSME degree program:

1. The following requirement has been removed: "Students must earn a 2.25 GPA in all courses and, in particular, in the five courses -- MECE 1331, MECE 2334, MECE 2336, MECE 2361 and MECE 3336 -- in order to enroll in additional 3000-level and above MECE courses."
2. The following language has been added regarding the evaluation of petitions to transfer external courses towards the BSME degree program: "When petitioning for transfer credit for Mechanical Engineering courses, students are expected to submit details of course syllabi plus their graded assignments and exams from the courses taken at the external institution."

Current BSME Degree Plan

Proposed 2014-15 BSME Degree Plan

Mechanical Engineering, B.S.M.E.
Current Catalog Entry (2013-2014)

Undergraduate Catalog 2013 - 2014

University of Houston

Mechanical Engineering, B.S.M.E.

Mechanical engineering majors must earn a grade of C- or better in all engineering, mathematics, and science courses, including transfer courses. No grade lower than C- will be accepted for other courses transferred to the University of Houston.

Students must earn a 2.25 GPA in all courses and, in particular, in MECE courses ([MECE 1331](#), [MECE 2334](#), [MECE 2336](#), [MECE 2361](#), and [MECE 3336](#)) in order to enroll in additional 3000-level and above MECE courses. Each course must be completed with a minimum grade of C-. A minimum GPA of 2.000, both in MECE and overall, is required for graduation. The major GPA is calculated using all MECE courses except [MECE 3336](#), which cannot be applied to the MECE degree. Prerequisites and corequisites must be satisfied for a course before a student can enroll in that course.

Students with senior standing in Mechanical Engineering are required to take three MECE 5000-level courses, Mechanical Engineering Electives or two MECE 5000-level courses and one non-MECE 3000+ level course from other departments in engineering or math or science. Exceptions: 1. Students in the Fast Track Program can substitute 6000-level MECE courses for the 5000-level MECE courses. 2. Students doing an Honors thesis would have to take an extra three hours to satisfy the requirements for a Math Minor. One [MECE 4398](#) course (Individual Study) can be used in place of a 5000-level MECE course.

A drafting requirement (for no credit toward graduation) may be satisfied by completing [CNST 1330](#) or [MECT 3341](#) or an equivalent. A computer-aided course would be best. (This requirement may be met using other courses, high school drafting completed in the tenth, eleventh, or twelfth grade, or industrial experience by filing a petition in the department.)

First Year

Fall Semester

[CHEM 1117 - Fundamentals of Chemistry for Engineers Laboratory](#) Credit Hours: 1.0

[CHEM 1372 - Fundamentals of Chemistry for Engineers](#) Credit Hours: 3.0

[ENGL 1303 - First Year Writing I](#) Credit Hours: 3.0

[MATH 1431 - Calculus I](#) Credit Hours: 4.0 2

[POLS 1336 - U.S. and Texas Constitutions and Politics](#) Credit Hours: 3.0

Total 14

Spring Semester

[ENGL 1304 - First Year Writing II](#) Credit Hours: 3.0

[MECE 1100 - Introduction to Mechanical Engineering](#) Credit Hours: 1.0

[MECE 1331 - Computing for Mechanical Engineers](#) Credit Hours: 3.0

[MATH 1432 - Calculus II](#) Credit Hours: 4.0

[PHYS 1321 - University Physics I](#) Credit Hours: 3.0

Total 14

Second Year

Fall Semester

MECE 2336 - Mechanics I Credit Hours: 3.0

MECE 2361 - Introduction to Mechanical Design Credit Hours: 3.0

MATH 2433 - Calculus III Credit Hours: 4.0

PHYS 1322 - University Physics II Credit Hours: 3.0

Humanities Core Course Cr. 3.

Total 16

Spring Semester

MATH 3321 - Engineering Mathematics Credit Hours: 3.0

MECE 2334 - Thermodynamics I Credit Hours: 3.0

MECE 3336 - Mechanics II Credit Hours: 3.0

ENGI 2304 - Technical Communications Credit Hours: 3.0

POLS 1337 - U.S. Government: Congress, President, and Courts Credit Hours: 3.0

Total 15

Third Year

Fall Semester

ECE 3336 - Introduction to Circuits and Electronics Credit Hours: 3.0

MATH 3363 - Introduction to Partial Differential Equations Credit Hours: 3.0

MECE 3334 - Thermodynamics II Credit Hours: 3.0

MECE 3345 - Materials Science Credit Hours: 3.0

MECE 3369 - Solid Mechanics Credit Hours: 3.0

HIST 1377 - The United States to 1877 Credit Hours: 3.0

Total 18

Spring Semester

HIST 1378 - The United States Since 1877 Credit Hours: 3.0

MECE 3245 - Materials Science Laboratory Credit Hours: 2.0

MECE 3338 - Dynamics and Control of Mechanical Systems Credit Hours: 3.0

MECE 3360 - Experimental Methods Credit Hours: 3.0

MECE 3363 - Introduction to Fluid Mechanics Credit Hours: 3.0

MECE 3371 - Numerical Methods for Mechanical Engineers Credit Hours: 3.0

Total 17

Fourth Year

Fall Semester

MECE 4364 - Heat Transfer Credit Hours: 3.0

MECE 4340 - Mechanical Engineering Capstone I Credit Hours: 3.0

MECE 53xx. Mechanical Engineering Elective Cr. 3.

MECE 4372 - Mechanics-Controls-Vibration Laboratory Credit Hours: 3.0

Visual/Performing Arts Core Course Cr. 3.

Total 15

Spring Semester

MECE 4341 - Mechanical Engineering Capstone II Credit Hours: 3.0

MECE 4371 - Thermal-Fluids Laboratory Credit Hours: 3.0

MECE 53xx. Mechanical Engineering Elective Cr. 3.

MECE 53xx. Mechanical Engineering Elective Cr. 3.

Social Science Core Course Cr. 3.

Total 15

Degree Total 124

Mechanical Engineering, B.S.M.E.
Proposed Catalog Entry (2014-2015)

Mechanical Engineering, B.S.M.E.

Mechanical engineering majors must earn a grade of C- or better in all engineering, mathematics, and science courses, including transfer courses. No grade lower than C- will be accepted for other courses transferred to the University of Houston. When petitioning for transfer credit for Mechanical Engineering courses, students are expected to submit details of course syllabi plus their graded assignments and exams from the courses taken at the external institution.

A minimum GPA of 2.000, both in MECE and overall, is required for graduation. The major GPA is calculated using all MECE courses except [MECE 3400](#), which cannot be applied to the MECE degree. Prerequisites and co-requisites must be satisfied for a course before a student can enroll in that course.

Students with senior standing in Mechanical Engineering are required to take four technical electives. The elective requirement can be satisfied by one of the following options:

- Take four MECE 5000-level or higher Mechanical Engineering courses.
- Take three MECE 5000-level or higher Mechanical Engineering courses, and one course from the approved list of non-MECE 3000+ level courses from other departments in engineering or math or science.
- Complete a senior honors thesis using MECE 3399 and 4399, and then take two MECE 5000- level or higher Mechanical Engineering courses.

Students in the Fast Track Program can substitute 6000-level MECE courses for the 5000-level MECE courses. Students doing an Honors thesis would have to take an extra three hours to satisfy the requirements for a Math Minor. One [MECE 4398](#) course (Individual Study) can be used in place of a 5000-level MECE course.

A drafting requirement (for no credit toward graduation) may be satisfied by completing [MECT 1330](#) or [MECT 3341](#) or an equivalent. A computer-aided course would be best. (This requirement may be met using other courses, high school drafting completed in the tenth, eleventh, or twelfth grade, or industrial experience by filing a petition in the department.)

First Year

Fall Semester

- [CHEM 1117 - Fundamentals of Chemistry for Engineers Laboratory](#) Credit Hours: 1.0
- [CHEM 1372 - Fundamentals of Chemistry for Engineers](#) Credit Hours: 3.0
- [ENGL 1303 - First Year Writing I](#) Credit Hours: 3.0
- [MATH 1431 - Calculus I](#) Credit Hours: 4.0
- [POLS 1336 - U.S. and Texas Constitutions and Politics](#) Credit Hours: 3.0

Total 14

Spring Semester

- [ENGL 1304 - First Year Writing II](#) Credit Hours: 3.0
- [MECE 1100 - Introduction to Mechanical Engineering](#) Credit Hours: 1.0
- [MECE 1331 - Computing for Mechanical Engineers](#) Credit Hours: 3.0
- [MATH 1432 - Calculus II](#) Credit Hours: 4.0
- [PHYS 1321 - University Physics I](#) Credit Hours: 3.0

Total 14

Second Year

Second Year

Fall Semester

- [MECE 2336 - Mechanics I](#) Credit Hours: 3.0
- [ENGI 2304 - Technical Communications](#) Credit Hours: 3.0
- [MATH 2433 - Calculus III](#) Credit Hours: 4.0
- [PHYS 1322 - University Physics II](#) Credit Hours: 3.0
- Humanities Core Course Cr. 3.

Total 16

Spring Semester

- [MATH 3321 - Engineering Mathematics](#) Credit Hours: 3.0
- [MECE 2334 – Thermodynamics](#) Credit Hours: 3.0
- [MECE 3336 - Mechanics II](#) Credit Hours: 3.0
- [MECE 2361 - Introduction to Mechanical Design](#) Credit Hours: 3.0
- [POLS 1337 - U.S. Government: Congress, President, and Courts](#) Credit Hours: 3.0

Total 15

Third Year

Fall Semester

- [MECE 3338 – Dynamics and Control of Mechanical Systems](#) Credit Hours: 3.0
- [MATH 3363 - Introduction to Partial Differential Equations](#) Credit Hours: 3.0
- [MECE 3345 - Materials Science](#) Credit Hours: 3.0
- [MECE 3369 - Solid Mechanics](#) Credit Hours: 3.0
- [HIST 1377 - The United States to 1877](#) Credit Hours: 3.0
- Social Science Core Course Cr. 3.

Total 18

Spring Semester

- [HIST 1378 - The United States Since 1877](#) Credit Hours: 3.0
- [MECE 3245 - Materials Science Laboratory](#) Credit Hours: 2.0
- [MECE 3360 - Experimental Methods](#) Credit Hours: 3.0
- [MECE 3363 - Introduction to Fluid Mechanics](#) Credit Hours: 3.0
- [MECE 3371 - Numerical Methods for Mechanical Engineers](#) Credit Hours: 3.0
- [MECE 3381 – Introduction to Finite Element Methods](#) Credit Hours: 3.0
- Visual/Performing Arts Core Course Cr. 3.

Total 17

Fourth Year

Fall Semester

- [MECE 4364 - Heat Transfer](#) Credit Hours: 3.0
- [MECE 4340 - Mechanical Engineering Capstone I](#) Credit Hours: 3.0
- MECE 53xx. Mechanical Engineering Elective Cr. 3.
- MECE 4331: Design of Machine Elements Cr. 3.
- MECE 4343: Thermal Design Cr. 3.

Total 15

Spring Semester

- [MECE 4341 - Mechanical Engineering Capstone II](#) Credit Hours: 3.0
- [MECE 4371 - Thermal-Fluids Laboratory](#) or MECE 4372 – Mechanics, Controls, Vibrations Laboratory. Credit Hours: 3.0
- MECE 53xx. Mechanical Engineering Elective Cr. 3.
- MECE 53xx. Mechanical Engineering Elective Cr. 3.
- MECE 53xx. Mechanical Engineering Elective Cr. 3.

Total 15

Degree Total 124
