Date Submitted: 03/15/19 2:50 pm

# Viewing: MEEGBS : Mechanical Engineering, Bachelor of Science in Mechanical Engineering

Last approved: 05/08/18 12:29 pm

Last edit: 03/18/19 4:31 pm

Changes proposed by: chstung

Catalog Pages Using this Program

Mechanical Engineering B.S.M.E.

Mechanical Engineering (MEEG)

Submitter: User ID: **chstung** ~~crsleaf1~~ Phone: **575-5557** ~~575-4153~~

Program Status Active

Academic Level Undergraduate

Type of proposal Major/Field of Study

Select a reason for this modification

Making Minor Changes to an Existing Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding/changing Focused Study or Track)

Are you adding a concentration?

**No** ~~Yes~~

Are you adding a track?

No

Are you adding a focused study?

No

Effective Catalog Year Fall 2020

College/School Code

## In Workflow

1. **ENGR Dean Initial**
2. **Director of Program Assessment and Review**
3. **Registrar Initial**
4. **Institutional Research**
5. **MEEG Chair**
6. **ENGR Curriculum Committee**
7. **ENGR Faculty**
8. **ENGR Dean**
9. **Global Campus**
10. **Provost Review**
11. **University Course and Program Committee**
12. **Faculty Senate**
13. Provost Final
14. ADE Licensure Approval
15. Provost's Office--Notification of Approval
16. Registrar Final
17. Catalog Editor Final

## Approval Path

1. 03/15/19 3:56 pm Norman Dennis (ndennis): Approved for ENGR Dean Initial
2. 03/18/19 4:32 pm Alice Griffin (agriffin): Approved

College of Engineering(ENGR)

Department Code

Department of Mechanical Engineering(MEEG)

Program Code MEEGBS

Degree Bachelor of Science in Mechanical Engineering

CIP Code

for Director of Program Assessment and Review

3. 03/26/19 3:06 pm Lisa Kulczak (lkulcza): Approved for Registrar Initial
4. 03/26/19 5:08 pm Gary Gunderman (ggunderm): Approved for Institutional Research
5. 03/26/19 6:34 pm Darin Nutter (dnutter): Approved for MEEG Chair
6. 04/01/19 1:34 pm Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee
7. 04/01/19 2:24 pm Norman Dennis (ndennis): Approved for ENGR Faculty
8. 04/01/19 2:29 pm Norman Dennis (ndennis): Approved for ENGR Dean
9. 04/01/19 2:30 pm Leigh Ann Marshall (lamarsh): Approved for Global Campus
10. 04/04/19 10:43 am Terry Martin (tmartin): Approved for Provost Review

11. 04/19/19 4:30 pm Alice Griffin (agriffin): Approved for University Course and Program Committee

## History

1. Aug 15, 2014 by Leepfrog Administrator (clhelp)
2. Feb 24, 2015 by Charlie Alison (calison)
3. Mar 8, 2016 by Charlie Alison (calison)
4. Mar 8, 2016 by Charlie Alison (calison)
5. May 8, 2018 by Melynda Hart (melhart)

14.1901 - Mechanical Engineering.

Program Title

Mechanical Engineering, Bachelor of Science in Mechanical Engineering

Program Delivery Method

On Campus

Is this program interdisciplinary?

No

Does this proposal impact any courses from another College/School?

**No** ~~Yes~~

What are the total hours needed to 124

complete the program?

## Program Requirements and Description

Requirements

**Requirements for the B.S.M.E.:** The Bachelor of Science in Mechanical Engineering curriculum includes, in addition to the required 18 hours of history, government, fine arts/humanities/social science elective courses, a total of 12 hours of technical and science electives. A student must select all electives with the approval of his or her adviser. The fine arts/humanities/social science electives must be selected from the University Core in the Academic Regulations chapter for university requirements for the program. It is expected that technical and science electives will be chosen to provide a coherent program within one or more areas of specialization or options available to mechanical engineers. Traditional areas of specialization are available in mechanical systems, materials, and energy systems. Other areas include pre-medical, management, and aerospace.
The first-year curriculum is essentially the same as prescribed for all engineering freshmen. Students entering the mechanical engineering program are required to take two, four hour laboratory based science electives. One of the four hour science electives must be PHYS 2074. The other four hour science elective must be chosen from one of the following:

| | | |
|---|---|---|
| ASTR 2003 | Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) | 4 |
| & ASTR 2001L | and Survey of the Universe Laboratory (ACTS Equivalency = PHSC 1204 Lab) | |
| BIOL 1543 | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) | 4 |
| & BIOL 1541L | and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) | |
| BIOL 2213 | Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) | 4 |
| & BIOL 2211L | and Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab) | |
| CHEM 1103 | University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) | 4 |
| & CHEM 1101L | and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) | |
| GEOS 1113 | General Geology (ACTS Equivalency = GEOL 1114 Lecture) | 4 |
| & GEOS 1111L | and General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab) | |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3544 | Optics | 4 |
| PHYS 3603 | Introduction to Modern Physics | 4 |
| & PHYS 360VL | and Modern Physics Laboratory | |

## Fine Arts/Humanities/Social Science Electives

Students must follow the University Core curriculum in selecting their history, government, fine arts, humanities, and social science electives. Each student in the College of Engineering is required to complete 18 semester hours in the humanities and social sciences.
The courses taken must include:

| | | |
|---|---|---|
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) | 3 |
| or HIST 2013 | History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) | |
| or PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) | |
| ECON 2143 | Basic Economics: Theory and Practice | 3 |
| or ECON 2013 | Principles of Macroeconomics (ACTS Equivalency = ECON 2103) | |
| PHIL 3103 | Ethics and the Professions | 3 |

The remaining three courses must be selected from an approved list. The humanities and social sciences chartfrom the University Core page should be used as a guide for selecting these courses.

8-Semester Plan

# Mechanical Engineering B.S.M.E.

## Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Mechanical Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students interested in obtaining a sequencing schedule of courses may contact the Mechanical Engineering office.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy in the Academic Regulations chapter for university requirements of the program.

Either the science elective in the second semester of Year 1 or the science elective in the first semester of Year 2 must include PHYS 2074. Other science electives should be chosen from an approved list. See the mechanical engineering office.

| First Year | Units | |
|---|---|---|
| | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) | 3 | |
| CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) | 3 | |
| PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) | 4 | |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) | 4 | |
| GNEG 1111 Introduction to Engineering I | 1 | |
| Select one of the following: | | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) | | |
| HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) | | |
| PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) | | |
| GNEG 1121 Introduction to Engineering II | | 1 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) | | 4 |
| Freshman Science Elective (See Above) | | 4 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) | | 3 |

| | | |
|---|---|---|
| Year Total: | 15 | 15 |
| | | |
| Second Year | Units | |
| | Fall | Spring |
| ~~MEEG 2100 Computer-aided Design Competency~~ | ~~0~~ | - |
| **MEEG 2101** **Course MEEG 2101 Not Found** | **1** | |
| Science Elective (See Note Above) | 4 | |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) | 4 | |
| MEEG 2303 Introduction to Materials | 3 | |
| MEEG 2003 Statics | 3 | |
| MATH 2584 Elementary Differential Equations | | 4 |
| MEEG 2013 Dynamics | | 3 |
| MEEG 2403 Thermodynamics | | 3 |
| MEEG 2703 Computer Methods in Mechanical Engineering | | 3 |
| MEEG 2103 Introduction to Machine Analysis | | 3 |
| Year Total: | 15 | 16 |
| | | |
| Third Year | Units | |
| | Fall | Spring |
| MEEG 3013 Mechanics of Materials | 3 | |
| MEEG 3113 Machine Dynamics and Control | 3 | |
| MEEG 3202L Mechanical Engineering Laboratory I | 2 | |
| MEEG 3503 Mechanics of Fluids | 3 | |
| ELEG 3903 Electric Circuits and Machines | 3 | |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) | 3 | |
| or ECON 2143 Basic Economics: Theory and Practice | | |
| MEEG 3212L Mechanical Engineering Laboratory II | | 2 |
| MEEG 4413 Heat Transfer | | 3 |
| ~~MEEG 4104 Machine Element Design~~ | - | ~~4~~ |
| **MEEG 4103** **Course MEEG 4103 Not Found** | | **3** |
| ELEG 3933 Circuits & Electronics | | 3 |
| Technical/Science Elective | | 3 |
| PHIL 3103 Ethics and the Professions | | 3 |
| Year Total: | 17 | 17 |
| | | |
| Fourth Year | Units | |
| | Fall | Spring |
| MEEG 4132 Professional Engineering Practices | 2 | |
| MEEG 4182 Creative Project Design I | 2 | |
| MEEG 4202L Mechanical Engineering Laboratory III | 2 | |
| MEEG 4483 Thermal Systems Analysis and Design | 3 | |

| | | |
|---|---|---|
| Technical/Science Elective | 3 | |
| Fine Arts Elective (from University/State Core List) | 3 | |
| MEEG 4192 Creative Project Design II | | 2 |
| Two Technical/Science Elective | | 6 |
| Two Social Science Elective (from University/State Core List) | | 6 |
| Year Total: | 15 | 14 |
| | | |
| Total Units in Sequence: | | 124 |

Are Similar Programs available in the area?

No

Estimated Student Demand for Program: 50

Scheduled Program Review Date: 2020

Program Goals and Objectives

| Program Goals and Objectives |
|---|
| Beyond the BSME, the objective of the aerospace concentration is to produce graduates who have specialized analytical, experimental and/or computational skills relating to the aerospace engineering industry. |

Learning Outcomes

| Learning Outcomes |
|---|
| In addition to the learning outcomes of the BSME, students with an aerospace concentration can demonstrate:<br>A. An ability to apply fundamental aerospace engineering concepts and applications; and,<br>B. An ability to design aerospace systems, components, and processes. |

Description and justification of the request

| Description of specific change | Justification for this change |
|---|---|
| One hour is added to MEEG 2100 computer-aided design and one hour is removed from MEEG 4104 Machine Element Design. The total hour of the program remains unchanged. | Changes are made to better reflect students' effort and revised course contents. |

Upload attachments

Reviewer Comments

**Norman Dennis (ndennis) (03/15/19 3:55 pm):** Added new Course Numbers

**Alice Griffin (agriffin) (03/18/19 2:59 pm):** Changed effective catalog year from fall 2019 to fall 2020. It is too late to complete the campus approval process for this fall.

**Alice Griffin (agriffin) (03/18/19 4:29 pm):** Removed duplicate courses so that the credit hours would total correctly to 124 hours for the program.

**Alice Griffin (agriffin) (03/18/19 4:31 pm):** Verified that the courses in red box have been submitted into the approval workflow. These include changing MEEG from 2100 to 2101 and MEEG 4104 to MEEG 4103. The additional language was removed so that the notes would not appear in the catalog copy.

Key: 494