Code # EN23 (2014) Rev

**Bulletin Change Transmittal Form**

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| **Bulletin Change** Please attach a copy of all catalogue pages requiring editorial changes. |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **General Education Committee Chair (If applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

**1.Contact Person** (Name, Email Address, Phone Number)

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**2.Proposed Change**

Change Engineering Core Course Credits in the BSEE Degree Plan from 34 to 27.

**3.Effective Date**

Fall 2015

**4.Justification**

As per the advisory council and faculty recommendations, the BSEE degree plan needs to provide more electrical engineering foundation courses. It was proposed to substitute the following engineering core courses namely; ENGR 2413 Mechanics of materials, ENGR 2411 Mechanics of Materials I lab, and ENGR 3423 Dynamics with electrical engineering foundation courses.

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College of Engineering Core Courses:

Grade of “C” or better required.

Sem. Hrs.

ENGR 1402, Concepts of Engineering 2

ENGR 1412, Software Applications for Engineers 2

ENGR 2401, Applied Engineering Statistics 1

ENGR 2403, Statics 3

~~ENGR 2413 AND ENGR 2411, Mechanics of Materials and Laboratory 4~~

ENGR 2423 AND ENGR 2421, Electric Circuits I and Laboratory 4

~~ENGR 3423, Dynamics 3~~

ENGR 3433, Engineering Economics 3

ENGR 3443, Engineering Thermodynamics I 3

ENGR 4401, Senior Seminar 1

ENGR 4453, Numerical Methods for Engineers 3

ENGR 4463, Senior Design I 3

ENGR 4482, Senior Design II 2

Total: ~~34~~27

Additional Support Courses:

The additional support courses listed below are required for all engineering

baccalaureate degrees.

Sem. Hrs.

MATH 4403, Differential Equations 3

Science Elective 4

Total: 7

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Major in Engineering

Bachelor of Science in Engineering

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

University Requirements:

See University General Requirements for Baccalaureate degrees (p. 41)

First Year Making Connections Course: Sem. Hrs.

ENGR 1402, Concepts of Engineering (See College of Engineering Core Courses) -

General Education Requirements: Sem. Hrs.

See General Education Curriculum for College of Engineering 38

Additional Support Courses: Sem. Hrs.

Refer to Additional Support Courses for College of Engineering 7

College of Engineering Core Courses: Sem. Hrs.

Refer to College of Engineering Core Courses ~~34~~ 27

Areas of Concentration: In addition to the University requirements for all Baccalaureate Degrees, a Bachelor of Science

in Engineering requires that one of the two following conditions be met:

1. “C” or better in each course in the ~~46~~53-hour concentration area;

OR

2. 2.5 (or greater) grade point average in the 46-hour concentration areas listed below .

Sem. Hrs.

Students must select an area of concentration from one of the three following areas

(see below for detailed area of concentration course lists):

Civil Engineering

Mechanical Engineering

Electrical Engineering

~~46~~ 53Total Required Hours:

125

Area of Concentration: Civil Engineering

Civil Engineering:

Sem. Hrs.

BIOL 1063, People and the Environment 3

CE 2202, Civil Engineering Presentations 2

CE 2223, Plane Surveying 3

CE 3213, Structural Analysis I 3

CE 3223, Civil Engineering Materials 3

CE 3233, Structural Analysis II OR

CE 4263, Water and Waste Treatment 3

CE 3253, Engineering Hydrology 3

CE 3263, Introduction to Environmental Engineering 3

CE 3273, Water and Waste Systems 3

CE 4203, Transportation Engineering I 3

CE 4233, Foundation Engineering 3

CE 4243, Reinforced Concrete Design 3

CE 4253, Soil Mechanics 3

CE 4251, Soil Mechanics Laboratory 1

CE 4283, Structural Steel Design 3

ENGR 2411, Mechanics of Materials Laboratory 1

ENGR 2413, Mechanics of Materials 3

ENGR 3423, Dynamics 3

ENGR 3471, Fluid Mechanics Laboratory 1

ENGR 3473, Fluid Mechanics 3

Total Required Hours: ~~46~~53

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Area of Concentration: Electrical Engineering

Electrical Engineering:

Electives denoted with an asterisk (\*) may be selected from any courses within the desig-

nated elective group; subject to a program advisor’s approval. They must make a rational

contribution to the student’s personal and professional education goals.

Sem. Hrs.

~~CHEM 1023, General Chemistry II 3~~

CS 2114, Structured Programming 4

EE 2322, Electrical Workshop 2

EE 3313, Electric Circuits II 3

EE 3331, Digital Electronics I Lab 1

EE 3333, Digital Electronics I 3

EE 3343, Engineering Fields and Waves~~I~~ 3

EE 3353, ~~Continuous and Analog Systems~~ Signals and Systems 3

EE 3363, Semiconductor Matl and Devices ~~I~~ 3

EE 3383, Principles and Practices in Electrical Engineering 3

EE 3393, Probability and Random Signals 3

EE 3401, Electronics I Laboratory 1

EE 3403, Electronics I 3

EE 4313, Control Systems 3

~~EE 4323, Electrical Machinery OR~~

EE 4353, Power Systems 3

EE 4373, Electronics II ~~OR~~ 3

EE 4773, ~~Intermediate Electrical Engineering~~ Electronics II Laboratory ~~OR~~ 3

~~EE 3303, Semiconductor and Optoelectronic Materials and Devices I Laboratory 3~~

~~EE 4383, Digital Electronics II OR~~

~~ENGR 4413, Engineering Problem Solving 3~~

\* Electrical Engineering Electives ~~2~~6-8

\*Approved Technical Electives 3

Total Required Hours: ~~46~~53-55

Area of Concentration: Mechanical Engineering

Mechanical Engineering:

Electives denoted with an asterisk (\*) may be selected from any courses within the designated elective group; subject to a program advisor’s approval. They must make a rational

contribution to the student’s personal and professional education goals.

Sem. Hrs.

CHEM 1023, General Chemistry II 3

ENGR 2411, Mechanics of Materials Laboratory 1

ENGR 2413, Mechanics of Materials 3

ENGR 3423, Dynamics 3

ENGR 3471, Fluid Mechanics Laboratory 1

ENGR 3473, Fluid Mechanics 3

ME 2502, Solid Modeling for Mechanical Engineers 2

ME 3504, Process Monitoring and Control 4

ME 3513, Mechanical Vibrations 3

ME 3533, Engineering Thermodynamics II 3

ME 4503, Fluid and Thermal Energy Systems 3

ME 4543, Machine Design 3

ME 4553, Heat Transfer 3

ME 4563, Introduction to Manufacturing Processes 3

ME 4573, Mechanical System Design 3

\*Mechanical Engineering Electives 9

\*Approved Electives 3

Total Required Hours: ~~46~~ 53

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Major in Civil Engineering

Bachelor of Science in Civil Engineering

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

University Requirements:

See University General Requirements for Baccalaureate degrees (p. 41)

First Year Making Connections Course:

Sem. Hrs.

ENGR 1402, Concepts of Engineering (See College of Engineering Core Courses)

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General Education Requirements: Sem. Hrs.

See General Education Curriculum for College of Engineering 38

Additional Support Courses:Sem. Hrs.

Refer to Additional Support Courses for College of Engineering 7

College of Engineering Core Courses:Sem. Hrs.

Refer to College of Engineering Core Courses ~~34~~ 27

Major Requirements:

In addition to the University requirements for all Baccalaureate Degrees, a Bachelor of Science

in Civil Engineering requires that one of the two following conditions be met:

1. “C” or better in each course in the ~~49~~56-hour major courses;

OR

2. 2.5 (or greater) grade point average in the ~~49~~56-hour major courses listed below

.

Sem. Hrs.

BIOL 1063, People and the Environment 3

CE 2202, Civil Engineering Presentations 2

CE 2223, Plane Surveying 3

CE 3213, Structural Analysis I 3

CE 3223, Civil Engineering Materials 3

CE 3233, Structural Analysis II OR

CE 4263, Water and Waste Treatment 3

CE 3253, Engineering Hydrology 3

CE 3263, Introduction to Environmental Engineering 3

CE 3273, Water and Waste Systems 3

CE 4203, Transportation Engineering I 3

CE 4223, Transportation Engineering II 3

CE 4233, Foundation Engineering 3

CE 4243, Reinforced Concrete Design 3

CE 4253, Soil Mechanics 3

CE 4251, Soil Mechanics Laboratory 1

CE 4283, Structural Steel Design 3

ENGR 2411, Mechanics of Materials Laboratory 1

ENGR 2413, Mechanics of Materials 3

ENGR 3423, Dynamics 3

ENGR 3471, Fluid Mechanics Laboratory 1

ENGR 3473, Fluid Mechanics 3

Sub-total ~~49~~ 56

Total Required Hours: 128

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The bulletin can be accessed at http://www.astate.edu/a/registrar/students/

Major in Electrical Engineering

Bachelor of Science in Electrical Engineering

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

University Requirements:

See University General Requirements for Baccalaureate degrees (p. 41)

First Year Making Connections Course:Sem. Hrs.

ENGR 1402, Concepts of Engineering (See College of Engineering Core Courses)

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General Education Requirements:Sem. Hrs.

See General Education Curriculum for College of Engineering 38

Additional Support Courses:Sem. Hrs.

Refer to Additional Support Courses for College of Engineering 7

College of Engineering Core Courses:Sem. Hrs.

Refer to College of Engineering Core Courses ~~34~~ 27

Major Requirements:

Electives denoted with an asterisk (\*) may be selected from any courses within the desig

-nated elective group; subject to a program advisor’s approval. They must make a rational

contribution to the student’s personal and professional education goals.

In addition to the University requirements for all Baccalaureate Degrees, a Bachelor of

Science in Electrical Engineering requires that one of the two following conditions be met:

1. “C” or better in each course in the ~~49~~56-58-hour major courses;

OR

2. 2.5 (or greater) grade point average in the ~~49~~56-58-hour major courses listed below

.

Sem. Hrs.

~~CHEM 1023, General Chemistry II 3~~

CS 2114, Structured Programming 4

EE 2322, Electrical Workshop 2

EE 3313, Electric Circuits II 3

EE 3331, Digital Electronics I Lab 1

EE 3333, Digital Electronics I 3

EE 3343, Engineering Fields and Waves~~I~~ 3

EE 3353, ~~Continuous and Analog Systems~~ Signals and Systems 3

EE 3363, Semiconductor Matl and Devices ~~I~~ 3

EE 3383, Principles and Practices in Electrical Engineering 3

EE 3393, Probability and Random Signals 3

EE 3401, Electronics I Laboratory 1

EE 3403, Electronics I 3

EE 4313, Control Systems 3

~~EE 4323, Electrical Machinery OR~~

EE 4333, Communications Theory 3

EE 4353, Power Systems 3

EE 4373, Electronics II ~~OR~~ 3

EE 4773, ~~Intermediate Electrical Engineering~~ Electronics II Laboratory ~~OR~~ 3

~~EE 3303, Semiconductor and Optoelectronic Materials and Devices I Laboratory 3~~

~~EE 4383, Digital Electronics II OR~~

~~ENGR 4413, Engineering Problem Solving 3~~

\* Electrical Engineering Electives ~~2~~6-8

\*Approved Technical Electives 3

Sub-total ~~49~~56-58

Total Required Hours: 128-130

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The bulletin can be accessed at http://www.astate.edu/a/registrar/students/

Major in Mechanical Engineering

Bachelor of Science in Mechanical Engineering

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

University Requirements:

See University General Requirements for Baccalaureate degrees (p. 41)

First Year Making Connections Course: Sem. Hrs.

ENGR 1402, Concepts of Engineering (See College of Engineering Core Courses)

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General Education Requirements:Sem. Hrs.

See General Education Curriculum for College of Engineering 38

Additional Support Courses:Sem. Hrs.

Refer to Additional Support Courses for College of Engineering7

College of Engineering Core Courses:Sem. Hrs.

Refer to College of Engineering Core Courses ~~34~~ 27 Major Requirements:

Electives denoted by an asterisk (\*) must be chosen from a list of approved electives,

which is available from Mechanical Engineering advisors and through the department

office. All students must complete at least one thermal/fluid systems stem elective and one

mechanical systems stem elective.

In addition to the University requirements for all Baccalaureate Degrees, a Bachelor of Sci

-ence in Mechanical Engineering requires that one of the two following conditions be met:

1. “C” or better in each course in the ~~49~~56-hour major courses;

OR

2. 2.5 (or greater) grade point average in the ~~49~~56-hour major courses listed below.

Sem. Hrs.

CHEM 1023, General Chemistry II 3

ENGR 2411, Mechanics of Materials Laboratory 1

ENGR 2413, Mechanics of Materials 3

ENGR 3423, Dynamics 3

ENGR 3471, Fluid Mechanics Laboratory 1

ENGR 3473, Fluid Mechanics 3

ME 2502, Solid Modeling for Mechanical Engineers 2

ME 3504, Process Monitoring and Control 4

ME 3513, Mechanical Vibrations 3

ME 3533, Engineering Thermodynamics II 3

ME 3613, Control Systems for Mechanical Engineers 3

ME 4503, Fluid and Thermal Energy Systems 3

ME 4543, Machine Design 3

ME 4553, Heat Transfer 3

ME 4563, Introduction to Manufacturing Processes 3

ME 4573, Mechanical System Design 3

ME 4613 Introduction to Mechatronics 3

\*ME Elective, Thermal Systems 3

\* ME Elective 3

Professional Development Elective 3

This elective may be selected outside the College of Engineering, subject only to advisor’s

approval. It must make a rational contribution to the student’s personal and professional

education goals.

Sub-total ~~49~~ 56

Total Required Hours: 128