Code # EN23 (2014) Rev2 with corrected formatting 042415

**Bulletin Change Transmittal Form**

[x]  **Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.

[ ]  **Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to pheath@astate.edu

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

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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)

Shubhalaxmi Kher, skher@astate.edu, 870.972.2088

Paul Mixon, pmixon@astate.edu, 870.972.2088

**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.

**From the most current electronic version of the bulletin, copy all bulletin pages that this proposal affects and paste it to the end of this proposal.**

**To copy from the bulletin:**

1. Minimize this form.
2. Go to <http://registrar.astate.edu/bulletin.htm> and choose either undergraduate or graduate.
3. This will take you to a list of the bulletins by year, please open the most current bulletin.
4. Find the page(s) you wish to copy, click on the “select” button and highlight the pages you want to copy.
5. Right-click on the highlighted area.
6. Click on “copy”.
7. Minimize the bulletin and maximize this page.
8. Right-click immediately below this area and choose “paste”.
9. For additions to the bulletin, please change font color and make the font size larger than the surrounding text. Make it noticeable.
10. For deletions, strike through the text, change the font color, and enlarge the font size. Make it noticeable.

Page 190, 2014-15 Undergraduate Bulletins

|  |  |
| --- | --- |
| **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**  |

Page 192, 2014-15 Undergraduate Bulletin

**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~~53 |
| **Total 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 |

Page 193, 2014-15 Undergraduate Bulletin

**Area of Concentration: Electrical Engineering**

|  |  |
| --- | --- |
| **Electrical 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~~  |
| 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~~~~EE 3363, Semiconductor Matl and Devices I~~  | 3  |
| EE 4773, ~~Intermediate Electrical Engineering~~ Electronics II Laboratory ~~OR~~ ~~EE 3303, Semiconductor and Optoelectronic Materials and Devices I Laboratory~~  | 3  |
| ~~EE 4383, Digital Electronics II OR~~ ~~EE 4313, Control Systems~~  | ~~3~~ |
| ~~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 |

Page 196, 2014-15 Undergraduate Bulletin

**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)  | **-**  |
| **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** |

Page 199, 2014-15 Undergraduate Bulletin 199

**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)  | **-**  |
| **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 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. 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 Materials 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 3313, Electric Circuits II~~  | ~~3~~ |
| ~~EE 3333, Digital Electronics I~~  | ~~3~~ |
| ~~EE 3343, Engineering Fields and Waves I~~  | ~~3~~ |
| ~~EE 3353, Continuous and Analog Systems~~  | ~~3~~ |
| ~~EE 3383, Principles and Practices in Electrical Engineering~~  | ~~3~~ |
| EE 4313, Control Systems | 3 |
| ~~EE 4323, Electrical Machinery OR~~ EE 4353, Power Systems  | 3  |
| EE 4333, Communications Theory  | 3  |
| EE 4373, Electronics II ~~OR~~ ~~EE 3363, Semiconductor Materials and Devices I~~  | 3  |
| EE 4773, ~~Intermediate EE~~ Electronics II Laboratory ~~OR~~ ~~EE 3303, Semiconductor and Optoelectronics Matl and Devices I Lab~~  | 3  |
| ~~EE 4383, Digital Electronics II OR~~ ~~EE 4313, Control Systems~~  | ~~3~~ |
| ~~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 |

Page 202, 2014-15 undergraduate Bulletin

**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)  | **-**  |
| **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 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 Sci­ence 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 Electives  | 3  |
| Professional Development Elective *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.*  | 3  |
| **Sub-total**  | ~~49~~ 56 |
| **Total Required Hours:**  | **128** |