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| CIP Code:  |  |
| Degree Code: |  |

**Bulletin / Banner Change Transmittal Form**

**[x] Undergraduate Curriculum Council**

**[ ] Graduate Council**

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

Email completed proposals to curriculum@astate.edu for inclusion in curriculum committee agenda.

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| Jason Stewart | 12/4/2017 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Jason Stewart | 12/4/2017 |

**Department Chair:**  |

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**Head of Unit (If applicable)**   |
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| Jason Stewart | 12/4/2017 |

**College Curriculum Committee Chair** |

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**Undergraduate Curriculum Council Chair** |
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| Brandon Kemp | 12/4/2017 |

**College Dean** |

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**Graduate Curriculum Committee Chair** |
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**General Education Committee Chair (If applicable)**   |

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**Vice Chancellor for Academic Affairs** |

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

Jason Stewart, jstewart@astate.edu, 972-2088

**2.Proposed Change**

Degree plan changes

 1. Remove ENGR 2421 Laboratory for Electric Circuits I

 2. Add one hour of credit and content to CE 3223 C. E. Materials to become CE 3224 C. E. Materials

 3. Provide choice between ENGR 2423 and ENGR 3443 instead of requiring both courses

 4. Introduce a Civil Engineering elective (3 hours) into the degree plan

 5. Introduce 4 new civil engineering courses which could be used to fulfill the new C. E. elective requirement

 6. Modify Biology requirement to allow both BIOL 1063 People and the Environment and BIOL 1003 General Biology

**3.Effective Date**

Fall 2018

**4.Justification –** *Please provide details as to why this change is necessary.*

The Engineering Accreditation Commission of ABET establishes standards under which engineering degrees are evaluated and accredited. The BSCE degree at A-State is accredited by ABET, and the changes proposed will not negatively impact our current or future accreditation potential or status. Proposed changes will impact other engineering degrees (BSEE and BSME) since 7 hours will be removed from the Engineering Core Courses which are required for all engineering degrees at A-State. These 7 hours will be moved into the respective majors for the EE and ME programs.

The proposed changes are the result of faculty, student, and Civil Engineering Advisory Council input. Professional licensure is essential for many civil engineers, and our program is designed to prepare students for licensure within 4 years of graduation as permitted by law. A pre-licensure exam known as the Fundamentals of Engineering (FE) exam is taken by students close to graduation, and students must pass this exam before beginning a 4-year apprenticeship which can lead to licensure. Neither Electric Circuits nor Thermodynamics are topics on the FE exam any longer, so we are proposing to give students a choice of one of those courses instead of requiring both. Both were traditionally part of many if not all engineering degrees, but times have changed toward more specialization. The extra hour from the Circuits lab will be absorbed by our civil engineering materials class (CE 3223) where we currently require 5 contact hours each week for 3 hours of credit (2 hours lecture and 3 hours lab). We will add some new content to the course as well to help our students with FE topics which are not currently addressed under the 3 credit hour format. The “freed up” three hours will become a new C.E. elective, and students can choose from a total of 4 new courses being proposed or the single current non-chosen elective course which students have in our degree plan.

Concerning the biology change, we have long had a policy of accepting general biology from transfer students, and we are essentially leveling the field for all students who might prefer general biology over BIOL 1063 People and the Environment. From our accreditation point of view, it makes no difference which course is taken, and we have no specific need for one over the other in subsequent courses.

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Follow the following guidelines for indicating necessary changes.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)- New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font). - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)*You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.**Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

From Bulletin p. 120

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| **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 2423~~ **~~AND~~** ~~ENGR 2421, Electric Circuits I and Laboratory~~  | ~~4~~  |
| 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:**  | **~~27~~20** |

From Bulletin p. 123

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| **Engineering Core Courses:**  | **Sem. Hrs.**  |
| Refer to Engineering Core Courses  | **~~27~~ 20** |
| **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 ~~56~~63 hour major courses; **OR** 2. 2.5 (or greater) grade point average in the ~~56~~63 hour major courses listed below.  | **Sem. Hrs.**  |
| BIOL 1063, People and the Environment ***OR BIOL 1003 Biological Science*** | 3  |
| CE 2202, Civil Engineering Presentations  | 2  |
| CE 2223, Plane Surveying  | 3  |
| CE 3213, Structural Analysis I  | 3  |
| CE 322~~3~~4, Civil Engineering Materials  | ~~3~~ 4 |
| 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 ***CE Elective: CE 3233 Structural Analysis II OR CE 4263 Water and Waste Treatment OR CE 4293 Sustainability and Water Resources OR CE 4803 Open-Channel Flow OR CE 4813 Groundwater Hydrology OR CE 4823 Earthquake Engineering*** | 3***3***  |
| ENGR 2411, Mechanics of Materials Laboratory  | 1  |
| ENGR 2413, Mechanics of Materials***ENGR 2423 Electric Circuits I OR ENGR 3443 Engineering Thermodynamics I*** | 3***3*** |
| ENGR 3423, Dynamics  | 3  |
| ENGR 3471, Fluid Mechanics Laboratory  | 1  |
| ENGR 3473, Fluid Mechanics  | 3  |
| **Science Elective:** CHEM 1023, General Chemistry II **AND** CHEM 1021, General Chemistry II Lab **OR** GEOL 1003, Environmental Geology **AND** GEOL 1001, Environmental Geology Lab **OR** PHYS 2044, University Physics II  | 4  |
| **Sub-total**  | **6~~0~~7**  |
| **Additional Support Course:**  | **Sem. Hrs.**  |
| MATH 4403, Differential Equations  | **3**  |
| **Total Required Hours:**  | **128** |

From Bulletin p. 126 (electrical engineering major)

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| **Engineering Core Courses:**  | **Sem. Hrs.**  |
| Refer to Engineering Core Courses  | **~~27~~ 20** |
| **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 ~~56-58~~ 63-65 hour major courses; **OR** 2. 2.5 (or greater) grade point average in the ~~56-58~~ 63-65 hour major courses listed below.  | **Sem. Hrs.**  |
| CS 2114, Structured Programming  | 4  |
| CHEM 1023, General Chemistry II **AND** CHEM 1021, General Chemistry II Lab  | 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  | 3  |
| EE 3353, Signals and Systems  | 3  |
| EE 3363, Semiconductor Materials and Devices  | 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 4353, Power Systems  | 3  |
| EE 4333, Communications Theory  | 3  |
| EE 4373, Electronics II  | 3  |
| EE 4773, Electronics II Laboratory  | 3  |
| \*Electrical Engineering Electives ***ENGR 2423 AND ENGR 2421, Electric Circuits I and Laboratory******ENGR 3443 Engineering Thermodynamics I*** | 6-8 ***4******3*** |
| \*Approved Technical Electives  | 3  |
| **Sub-total**  | **6~~0~~7-6~~2~~9** |
| **Additional Support Course:**  | **Sem. Hrs.**  |
| MATH 4403, Differential Equations  | 3  |
| **Total Required Hours:**  | **128-130** |

From Bulletin p. 129 (mechanical engineering major)

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| **Engineering Core Courses:**  | **Sem. Hrs.**  |
| Refer to Engineering Core Courses  | **~~27~~ 20** |
| **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 ~~56~~63 hour major courses; **OR** 2. 2.5 (or greater) grade point average in the ~~56~~63 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***ENGR 2423 AND ENGR 2421, Electric Circuits I and Laboratory***  | 3***4***  |
| ENGR 3423, Dynamics ***ENGR 3443 Engineering Thermodynamics I*** | 3 ***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  |
| PHYS 2044, University Physics II  | 4  |
| \*ME Electives  | 6  |
| Professional Development Elective *This elective may be selected outside the Engineering Programs, subject only to advisor’s approval. It must make a rational contribution to the student’s personal and professional education goals.*  | 3  |
| **Sub-total**  | **6~~0~~7** |
| **Additional Support Course:**  | **Sem. Hrs.**  |
| MATH 4403, Differential Equations  | **3**  |
| **Total Required Hours:**  | **128** |