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| For Academic Affairs and Research Use Only |
| CIP Code:  |  |
| Degree Code: |  |

**New Minor Proposal Form**

**[✓] Undergraduate Curriculum 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 | 4/10/2019 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Jason Stewart | 4/10/2019 |

**Department Chair:**  |

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**Head of Unit (If applicable)**   |
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| Jason Stewart | 4/10/2019 |

**College Curriculum Committee Chair** |

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**Undergraduate Curriculum Council Chair** |
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| Yeonsang Hwang | 4/10/2019 |

**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** |

**i. Proposed Program Title**

Surveying

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

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

**iii. Proposed Starting Date**

Fall 2019

**Minor Justification**

1. Justification for introduction of new minor:

The state of Arkansas passed legislation which changed the process by which one can become a licensed Professional Surveyor (P.S.). The law (effective January 1, 2017) requires specific coursework at the college level to be completed along with experience and passing a licensure exam (A.C.A. §17-48-203). Only two programs currently exist in the state which can provide the required coursework, and neither of them is in the NE quadrant of the state. Surveying is a natural companion to civil engineering, so the surveying minor would provide BSCE students an opportunity to expand their marketability and potential value in the workplace by becoming eligible for licensure with completion of this minor. The Civil Engineering Advisory Council for the A-State BSCE program has also requested that this program be introduced to serve the region and state due to their recognition of a looming shortage of licensed surveyors in the state since the removal of the provision for experience to be sufficient for licensure (in conjunction with passing the licensure exam).

1. Academic rationale (how will this minor fit into the mission established by the department for the curriculum?)
The surveying minor will increase the value/marketability of BSCE students by providing them with the tools needed to ultimately become licensed surveyors. Surveying is a crucial part of many civil engineering projects, and these courses will provide students with a better understanding of those surveying requirements.
2. List goals for the minor (faculty, enrollment and/or curricular goals.)

The minor will provide the coursework necessary (in conjunction with the BSCE degree) to complete that portion of the Arkansas licensure requirements for Professional Surveyors.

1. Student population served.

BSCE students.

2. New minor objective:

The objective is to produce graduates who are eligible to sit for the P.S. exam and ultimately become licensed as Professional Surveyors.

3. Provide the following:

a. Curriculum outline - List of required courses

SUR 3003 Route and Construction Surveying

SUR 3013 Survey Plats and Deeds

SUR 3023 Photogrammetry

SUR 4003 Boundary Control and Legal Principles

SUR 4013 Law and Professionalism in Surveying

SUR 4023 Advanced Surveying

b. New course descriptions

SUR 3003 Route and Construction Surveying: Horizontal and vertical curve construction, construction survey parameters for buildings and roads, subdivision design and layout, and location guidelines for cuts and fills along with volume determination.

SUR 3013 Survey Plats and Deeds: Study of plats of survey to include survey research and records interpretation, deeds, descriptions, plats and principles of the presentation of survey data.

SUR 3023 Photogrammetry: Principles, procedures, and technology in photogrammetry.

SUR 4003 Boundary Control and Legal Principles: Laws, practices, and legal elements required to understand boundary location in land surveying.

SUR 4013 Law and Professionalism in Surveying: Arkansas and other state-specific laws, practices, and legal elements required to understand boundary location and other practices in land surveying.

SUR 4023 Advanced Surveying: Principles and practices of advanced surveying techniques.

4. No Will the new minor be offered via distance delivery?

5. Mode of delivery to be used:

Standard classroom

6. Specify the amount of the additional costs required, the source of funds, and how funds will be used.

Costs will be $6000 in the first year, $15,000 in the second year, and $18,000 per year in subsequent years (assuming adjunct faculty members are utilized to teach the courses). The funding source would be differential tuition in the short term (first semester at least, possibly first year). Engineering instruction funds would be utilized ultimately. The funds would be used to pay adjunct faculty members who would be teaching these courses until such time as full-time instructors/professors could be justified and hired.

7. Yes Is this new minor cognate embedded with a current bachelor’s degree?

* 1. If yes, what is the name of the Bachelor’s program? Bachelor of Science in Civil Engineering (BSCE)

The new minor and its courses in professional surveying will be cognate embedded and complementary to the BSCE. Program-level assessment of minors which are part of an already assessed program is not required at this time. However, the BSCE faculty will monitor Professional Surveyor exam pass rates closely to determine if the curriculum is producing qualified and prepared graduates.

* 1. If no, complete the New Minor Assessment section.

**NEW MINOR ASSESSMENT**

**University Outcomes**

1. Please indicate the university-level student learning outcomes for which this new program will contribute. Please complete the table by adding program level outcomes (PLO) to the first column, and indicating the alignment with the university learning outcomes (ULO). If you need more information about the ULOs, go to the [University Level Outcomes Website](http://www.astate.edu/a/assessment/student-learning-outcomes/files/ULOs%20for%20Website2.pdf).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ULO 1: Creative & Critical Thinking** | **ULO 2: Effective Communication** | **ULO 3: Civic & Social Responsibility** | **ULO 4: Globalization & Diversity** |
| **PLO 1** |  |  |  |  |
| **PLO 2** |  |  |  |  |
| **PLO 3** |  |  |  |  |

**MINOR Student Learning Outcomes**

2. Please fill out the following table to develop a continuous improvement assessment process for this minor.

*For further assistance, please see the ‘Expanded Instructions’ document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

***Note: Best practices suggest 4-7 outcomes per program; minors would have 1 to 4 outcomes.***

|  |  |
| --- | --- |
| **Outcome 1** | Type outcome here. What do you want students to think, know, or do when they have completed the program? |
| Assessment Procedure Criterion | Please include direct and indirect assessment measure for outcome.  |
| Which courses are responsible for this outcome? | List courses. |
| Assessment Timetable | What semesters, and how often, is the outcome assessed? |
| Who is responsible for assessing and reporting on the results? | Who is responsible for assessing, evaluating, and analyzing results, developing action plants, etc.?  |

*Please repeat as necessary.*

**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 page 479, 2018-19 Undergraduate Bulletin

**CE 4893. Sustainability and Water Resources** Fundamental concepts of sustainability, the interconnection of the water system with other systems, the environmental and socio-economic aspects of water systems, and case studies for sustainable strategies. Lecture three hours per week. Dual listed as CE 5293. Prerequisite, C or better in CE 3253 and CE 3263. Fall, even.

***Surveying (SUR)***

***SUR 3003. Route and Construction Surveying*** *Horizontal and vertical curve construction, construction survey parameters for buildings and roads, subdivision design and layout, and location guidelines for cuts and fills along with volume determination. Lecture two hours, laboratory 3 hours per week. Prerequisite, C or better in CE 2202. Fall.*

***SUR 3013. Survey Plats and Deeds*** *Study of plats of survey to include survey research and records interpretation, deeds, descriptions, plats and principles of the presentation of survey data. Lecture three hours per week. Prerequisite, C or better in CE 2202. Spring.*

***SUR 3023. Photogrammetry*** *Principles, procedures, and technology in photogrammetry. Lecture three hours per week. Prerequisite, C or better in MATH (1033 or 2204). Fall.*

***SUR 4003. Boundary Control and Legal Principles*** *Laws, practices, and legal elements required to understand boundary location in land surveying. Lecture three hours per week. Prerequisite, C or better in MATH (1033 or 2204). Spring.*

***SUR 4013. Law and Professionalism in Surveying*** *Arkansas and other state-specific laws, practices, and legal elements required to understand boundary location and other practices in land surveying. Lecture three hours per week. Prerequisite, C or better in CE 2202. Spring.*

***SUR 4023. Advanced Surveying*** *Principles and practices of advanced surveying techniques. Lecture two hours per week, lab three hours per week. Prerequisite, C or better in SUR 3003. Fall.*

**ELECTRICAL ENGINEERING PROGRAM**

From page 213, the “Copy/Paste” functions mess up everything. Below the existing “Minor in Engineering”, the section shown below would be inserted.

**Minor in Surveying**

 Students who are majoring in Civil Engineering may elect to complete the Minor in Surveying. The student is encouraged to declare the Surveying minor no later than the end of their sophomore year and follow the BSCE degree plan with the Surveying minor modifications from that point forward. Civil Engineering advisors will have a modified degree plan for students taking the Surveying minor. For BSCE students, completion of the Surveying minor along with the appropriate work experience and references will qualify the student to take the Professional Surveyor (P.S.) licensure exam in the state of Arkansas. The student must earn a grade of C or better in all courses comprising the 18 credit hours or have a grade point average of 2.5 or above over these courses. The Surveying minor does not complete the educational requirements for P.S. licensure for non-BSCE majors.

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| **Required Courses:**Students must maintain a minimum GPA of 2.5 **OR** a grade of at least a “C” for each course in the minor. | **Sem. Hrs.** |
| SUR 3003, Route and Construction Surveying | 3 |
| SUR 3013, Survey Plats and Deeds | 3 |
| SUR 3023, Photogrammetry | 3 |
| SUR 4003, Boundary Control and Legal Principles | 3 |
| SUR 4013, Law and Professionalism in Surveying | 3 |
| SUR 4023, Advanced Surveying | 3 |
| **Total Required Hours:** | **18** |

**LETTER OF NOTIFICATION
New Minor**

1. Institution submitting request:

Arkansas State University

2. Contact person/title:

 Jason Stewart, Director of Civil Engineering

3. Phone number/e-mail address:

 (870)972-2088, jstewart@astate.edu

4. Proposed effective date:

Fall 2019

5. Title of degree program: (Indicate if the degree listed above is approved for distance delivery)

Bachelor of Science in Civil Engineering (BSCE)

6. CIP Code:

Enter text...

7. Degree Code:

Enter text...

8. Proposed name of new minor:

Surveying

9. Reason for proposed action:

New licensure requirements for Professional Surveyors, A.C.A. §17-48-203

10. New minor objective:

 The minor will provide the coursework necessary (in conjunction with the BSCE degree) to complete that portion of the Arkansas licensure requirements for Professional Surveyors.

11. Provide the following:

* 1. Curriculum outline - List of courses in new minor – Underline required courses

 1. SUR 3003 Route and Construction Surveying, 2. SUR 3013 Survey Plats and Deeds, 3. SUR 3023 Photogrammetry, 4. SUR 4003 Boundary Control and Legal Principles, 5. SUR 4013 Law and Professionalism in Surveying 6. SUR 4023 Advanced Surveying

* 1. Total semester credit hours required for minor

 18

* 1. New courses and new course descriptions

 SUR 3003 Route and Construction Surveying: Horizontal and vertical curve construction, construction survey parameters for buildings and roads, subdivision design and layout, and location guidelines for cuts and fills along with volume determination. SUR 3013 Survey Plats and Deeds: Study of plats of survey to include survey research and records interpretation, deeds, descriptions, plats and principles of the presentation of survey data. SUR 3023 Photogrammetry: Principles, procedures, and technology in photogrammetry. SUR 4003 Boundary Control and Legal Principles: Laws, practices, and legal elements required to understand boundary location in land surveying. SUR 4013 Law and Professionalism in Surveying: Arkansas and other state-specific laws, practices, and legal elements required to understand boundary location and other practices in land surveying. SUR 4023 Advanced Surveying: Principles and practices of advanced surveying techniques.

* 1. Goals and objectives of minor

 The surveying minor will increase the value/marketability of BSCE students by providing them with the tools needed to ultimately become licensed surveyors. Surveying is a crucial part of many civil engineering projects, and these courses will provide students with a better understanding of those surveying requirements.

* 1. Expected student learning outcomes

 Graduates should be capable of utilizing modern measurement technologies to acquire spatial data and employ industry-standard software to solve technical problems.

* 1. Documentation that minor meets employer needs

 Professional Surveyor licensure requirements are published as part of Arkansas Code (A.C.A. §17-48-203), and additional details are provided through the Arkansas State Board of Licensure for Professional Engineers and Professional Surveyors. The following link provides details about current licensure requirements which went into effect on January 1, 2017 (<https://www.pels.arkansas.gov/Websites/pels/images/New%20Rules%201.1.2017%20Surveyor.pdf>). Completion of the surveying minor proposed (in conjunction with the BSCE program) will satisfy the educational requirements to allow students to sit for the P.S. licensure exam.

* 1. Student demand (projected enrollment) for minor

 4 in the first year

* 1. Name of institutions offering similar programs or and the institution(s) used as a model to develop the proposed program option

 No institution in the state of Arkansas has a surveying minor to go along with an engineering degree that I am aware of or can find. There are stand-alone programs at two community colleges in the state which would ultimately allow a student to become a licensed P.S. Those programs at located at the University of Arkansas at Monticello and the University of Arkansas Community College at Morrilton. The surveying minor proposed wasn’t modeled after any existing program but rather modeled after the requirements specified in Arkansas law for P.S. licensure.

12. Institutional curriculum committee review/approval date:

13. **No** Will the new minor be offered via distance delivery?

 If yes, indicate mode of distance delivery:

 Enter text...

14. Explain in detail the distance delivery procedures to be used, if applicable:

 N/A

15. Specify the amount of additional costs required for program implementation, the source of funds, and how funds will be used.

 Year 1: $6000; Year 2: $15,000; Year 3 and thereafter: $18,000. These costs are the adjunct faculty costs only. Equipment needed is already present in the College of Engineering and Computer Science. First year costs could be covered from differential tuition funds in the College. Engineering instruction funds would be utilized from year 2 forward. Program growth would dictate additional expenditures if needed.

16. Provide additional program information if requested by ADHE staff.

President/Chancellor Approval Date: Click here to enter a date.

Board of Trustees Notification Date: Click here to enter a date.

Chief Academic officer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: Enter date.

 Name (printed): Click here to enter text.