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

**Reconfiguration of Existing Degree Program Proposal Form**

(Also requires Arkansas Department of Higher Education (ADHE) approval)

**[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.

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| Dr. Brandon Kemp | 11/12/2020 |

**Department Curriculum Committee Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**COPE Chair (if applicable)** |
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| Dr. Brandon Kemp | 11/12/2020 |

**Department Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Head of Unit (if applicable)**   |
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| Mary Elizabeth Spence | 10/29/2020 |
| **Director of Assessment** |  |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Undergraduate Curriculum Council Chair** |
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| Jason Stewart | 11/12/2020 |

**College Curriculum Committee Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Graduate Curriculum Committee Chair** |
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| --- | --- |
| Dr. Abhijit Bhattacharyya | 11/12/2020 |

**College Dean** |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Vice Chancellor for Academic Affairs** |
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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**General Education Committee Chair (if applicable)**   |  |

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

Dr. Alexandr M. Sokolov asokolov@astate.edu 870-972-3635

1. **Title(s) of degree programs to be consolidated/reconfigured:**

Master of Engineering Management

Bachelor of Science in Engineering Technology

Bachelor of Science in Business Administration

Bachelor of Arts in Political Science

1. **Proposed title of consolidated/reconfigured program:**

Degree: Bachelor of Science Major: Engineering Management Systems

1. **Proposed Effective Date:** FALL 2021
2. **Reason for proposed program consolidation/reconfiguration:**

*(Indicate student need/demand (projected enrollment) for the proposed program and document that the program meets employer needs using the ADFA Workforce Analysis Form)*

Engineering Management is a high demand and high paying field. There is a large need for the local industry to have an engineering management systems program where working adults can gain knowledge of engineering management techniques. The Bachelor of Science in Engineering Management Systems prepares graduates to understand the engineering relationships between the management tasks of planning, organization, leadership, control, and the human element in production, research, and service organizations; to understand and deal with the stochastic nature of management systems. The program also prepares graduates to integrate management systems into a series of different technological environments.

The projected number of program enrollments for Years 1 - 3.

 Year 1: 5 Students

 Year 2: 20 Students

 Year 3: 40 Students

The projected number of program graduates in 3-5 years.

 Year 3: 5 Students

 Year 4: 15 Students

 Year 5: 15 Students

ADFA Workforce Analysis Form on file.

1. **Provide current and proposed curriculum outline by semester.**

*For undergraduate programs, please use Appendix A-8-semester plan form*

 *Indicate total semester credit hours required for the proposed program. If new courses are needed for the reconfiguration, approval for the courses must be requested prior to approval for the new degree. Underline any new courses. Identify required general education core courses with an asterisk. If utilizing courses from other departments, please color-code them and provide a key.*

|  |
| --- |
| **Arkansas State University - Jonesboro** |
| **Degree: Bachelor of Science** |
| **Major: Engineering Management Systems** |
| **2020-21** |
| Students requiring developmental course work based on low entrance exam scores (ACT, SAT, ASSET, COMPASS) may not be able to complete this program of study in eight (8) semesters. Developmental courses do not count toward total degree hours. **Students having completed college level courses prior to enrollment will be assisted by their advisor in making appropriate substitutions. In most cases, general education courses may be interchanged between semesters.** A minimum of 45 hours of upper division credit (3000-4000 level) is required for this degree. Mandatory state and institutional assessment exams will be required during your degree program. ***Failure to participate in required assessments may delay graduation.*** |
|  |
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|  |
| **Year 1** |   | **Year 1** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **\*ENG 1003** | Composition I | **3** | X |   | **\*ENG 1013** | Composition II | **3** | X |  |
| **\*SCOM 1203** | Oral Communications | **3** | X |   | **\*ECON 2313** | Principles of Macroeconomics | **3** |   |  |
| **\*MATH 1023** | College of Algebra | **3** | X |   | **\*HIST 2763/2773 or POSC 2103** | US History to **or** since 1876 **or**  Intro to US Government | **3** | X |  |
| **\*ENG 2003 or ENG 2013 or PHIL 1103** | Intro to Lit I **or** Intro to Lit II **or** Intro to Philosophy | **3** | X |   | **\*Social Science** | Gen. Ed. Approved Social Science | **3** | X |  |
| **\*UC 1013** | Making Connections | **3** |   |   | **\*ART, MUS or, THEA 2503** | Fine Arts Visual, Musical, Theatre | **3** | X |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **15** |   |  |
| **Year 2** |   | **Year 2** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **\*Physical Science** | Gen. Ed. Approved Physical Science | **4** | X |   | **\*Life Science**  | Gen. Ed. Approved Life Science | **3** | X |  |
| **\*Social Science** | Gen. Ed. Approved Social Science | **3** | X |   | **\*Life Science Lab** | Gen. Ed. Approved Life Science Lab | **1** | X |  |
| **\*ECON 2323** | Principles of Microeconomics | **3** |   |   | **MGMT 3123** | Principles of Management | **3** |   |  |
| **MATH 2143** | Business Calculus | **3** |   |   | **ACCT 2133** | Intro to Managerial Accounting | **3** |   |  |
| **ACCT 2033** | Intro to Financial Accounting | **3** |  |   | **LAW 2023** | Legal Environment of Business | **3** |   |  |
|  |   |  |   |   | **Electives** |   | **3** |   |  |
| **Total Hours** |   | **16** |   |   | **Total Hours** |   | **16** |   |  |
| **Year 3** |   | **Year 3** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **TECH 3773** | Statistics | **3** |   |   | **TECH 4823** | Quality Assurance | **3** |   |  |
| **POSC 3003** | Introduction to Political Analysis | **3** |   |   | **EGRM 3013** | Project Management and Practice | ***3*** |  |  |
| **TECH 3863** | Industrial Safety | **3** |   |   | **EGRM 4023** | Engineering Management I | ***3*** |  |  |
| **TECH 4813** | Operations Systems Research | **3** |   |   | **Electives** |   | **6** |   |  |
| **EGRM 3003** | Technical Entrepreneurship | ***3*** |  |   |  |   |  |   |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **15** |   |  |
| **Year 4** |   | **Year 4** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **EGRM 4003** | Engineering Management Design I | ***3*** |  |   | **EGRM 4013** | Engineering Management Design II | ***3*** |  |  |
| **EGRM 4053** | Human Resources for Engineers | ***3*** |  |   | **EGRM 4073** | Facilities Management Systems | ***3*** |  |  |
| **EGRM 4033** | Value Engineering Systems | ***3*** |  |   | **EGRM 4043** | Logistics and Supply Chain Systems | ***3*** |  |  |
| **EGRM 4063** | Engineering Management Internship | ***3*** |  |   | **Electives**  |   | **4** |   |  |
| **Electives**  |   | **3** |   |   |  |   |   |   |  |
|  |  |   |  |   |  |   |  |   |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **13** |   |  |
|  |  |  |  |  |  |  |  |  |  |
| **Total Jr/Sr Hours after 1st 30** | **45** |  |  | **Total Degree Hours** | **120** |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Graduation Requirements:** |   |  |
| Completion of HIST 2763 or HIST 2773 or POSC 2103  |   |  |
| English Proficiency (Grade of C or better in ENG 1003 and ENG 1013) |   |  |
| Grade C or better in all Engineering Management Core courses |   |  |
| 2.00 GPA at ASU |   |  |
| 2.00 GPA Overall |   |  |
| Maximum of 25% of the degree program via examination, PLA, Military or similar means; CLEP (30 hrs max)  |  |
| 45 JR/SR Hours ***after completing 30 hours*** |   |  |
| 120 Total Credit Hours |   |  |
| 18 of last 24 hours must be ASU-Jonesboro courses |   |  |
| Complete half of the last 50% of semester hours through the A-State campus |   |  |
| Yellow is College of Business |  |  |
| Green is Engineering Technology |  |  |
| Blue is Political Science |  |  |
| Pink is Mathematics |  |  |
| \* General Elective |  |  |

1. **Will the proposed degree be offered:**
	1. **Traditional/Face-to-face** YES
	2. **Distance/Online** YES
		1. **If yes, indicate mode of distance delivery, and the percentage of courses offered via this modality (<50%, 50-99%, or 100%).**

100% online though Blackboard synchronous course delivery system and video recording software provided by A-State such as YuJa.

* + 1. **If online, will it be offered through Global Initiatives/Academic Partnerships (AP)?**

YES

1. **Will the proposed degree be offered off-campus?** YES
	1. **If yes, identify the off-campus location**

A-State Online

1. **Provide documentation that proposed program has received full approval by licensure/certification entity, if required.**

 *(A program offered for teacher/education administrator licensure must be reviewed/approved by the Arkansas Department of Education prior to consideration by the Coordinating Board; therefore, the Education Protocol Form also must be submitted to ADHE along with the Letter of Notification).*

N/A

1. **List institutions offering similar program and identify the institutions used as a model to develop the proposed program.**

The University of Tennessee at Chattanooga was used as a model.

* Arizona State University
* The University of Arizona
* California State University – Northridge
* University of the Pacific
* Fairfield University
* University of Connecticut
* George Washington University
* Northwestern University
* Southern Illinois University
* The University of Illinois at Urbana-Champaign
* University of Illinois – Chicago
* Iowa State University – Ames
* Kansas State University
* Lawrence Technological University
* Michigan Technological University
* Missouri University of Science & Technology
* Southeast Missouri State University
* University of Central Missouri
* Montana State University
* Stevens Institute of Technology
* The College of New Jersey
* Clarkson University
* Columbia University
* New York Institute of Technology
* New York University
* Rensselaer Polytechnic Institute
* United States Military Academy at West Point
* North Dakota State University
* Oklahoma State University
* Ohio University
* Bucknell University
* Wilkes University
* York College
* Augustana College
* South Dakota School of Mines & Technology
* Christian Brothers University
* University of Tennessee – Chattanooga
* Saint Mary's University
* University of Vermont
* Liberty University
* Salem University
* Gonzaga University
* Grantham University
1. **Provide scheduled program review or specialized accreditation initial review date (within 10 years of program implementation).**

In 2031

1. **Is there differential tuition requested?** *If yes, please fill out the New Program/Tuition and Fees Change Form.*

N/A

1. **Graduate programs only: Will this program require a comprehensive exam?**

N/A

**Student Learning Outcomes**

Provide outcomes that students will accomplish during or at completion of this reconfigured degree. Fill out the following table to develop a continuous improvement assessment process.

*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.*

**University Outcomes**

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** | **X** |  |  |  |
| **PLO 2** | **X** |  |  |  |
| **PLO 3** |  | **X** |  |  |
| **PLO 4** | **X** |  |  |  |
| **PLO 5** |  | **X** | **X** | **X** |

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

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| **Outcome 1** | An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline |
| Assessment Measure | Direct: Projects will be assessed with a Rubric; Indirect: Exit Survey |
| Which courses are responsible for this outcome? | EGRM 4003 Engineering Management Design I |
| Assessment Timetable | Collect data whenever course is offered. But assess every 3 years as the College of Engineering and Computer Science Assessment schedule. |
| Who is responsible for assessing and reporting on the results? | The course instructor, Program coordinator, and the Program Director |

|  |  |
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| **Outcome 2** | An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline |
| Assessment Measure | Direct: Projects will be assessed with a Rubric; Indirect: Exit Survey |
| Which courses are responsible for this outcome? | EGRM 4013 Engineering Management Design II |
| Assessment Timetable | Collect data whenever course is offered. But assess every 3 years as the College of Engineering and Computer Science Assessment schedule. |
| Who is responsible for assessing and reporting on the results? | The course instructor, Program coordinator, and the Program Director |

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| **Outcome 3** | An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature |
| Assessment Measure | Direct: Projects will be assessed with a Rubric; Indirect: Exit Survey |
| Which courses are responsible for this outcome? | EGRM 3003 Technical Entrepreneurship |
| Assessment Timetable | Collect data whenever course is offered. But assess every 3 years as the College of Engineering and Computer Science Assessment schedule. |
| Who is responsible for assessing and reporting on the results? | The course instructor, Program coordinator, and the Program Director |

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| **Outcome 4** | An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes |
| Assessment Measure | Direct: Projects will be assessed with a Rubric; Indirect: Exit Survey |
| Which courses are responsible for this outcome? | EGRM 4073 Facilities Management Systems |
| Assessment Timetable | Collect data whenever course is offered. But assess every 3 years as the College of Engineering and Computer Science Assessment schedule. |
| Who is responsible for assessing and reporting on the results? | The course instructor, Program coordinator, and the Program Director |

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| **Outcome 5** | An ability to function effectively as a member as well as a leader on technical teams. |
| Assessment Measure | Direct: Projects will be assessed with a Rubric; Indirect: Exit Survey |
| Which courses are responsible for this outcome? | EGRM 4033 Value Engineering Systems |
| Assessment Timetable | Collect data whenever course is offered. But assess every 3 years as the College of Engineering and Computer Science Assessment schedule. |
| Who is responsible for assessing and reporting on the results? | The course instructor, Program coordinator, and the Program Director |

*Please repeat as necessary.*

**Appendix A, 8-Semester Plan**

(**Referenced in #9** - **Undergraduate Proposals Only)**

*Instructions: Please identify new courses in italics*.

|  |
| --- |
| **Arkansas State University - Jonesboro** |
| **Degree: Bachelor of Science** |
| **Major: Engineering Management Systems** |
| **2020-21** |
| Students requiring developmental course work based on low entrance exam scores (ACT, SAT, ASSET, COMPASS) may not be able to complete this program of study in eight (8) semesters. Developmental courses do not count toward total degree hours. **Students having completed college level courses prior to enrollment will be assisted by their advisor in making appropriate substitutions. In most cases, general education courses may be interchanged between semesters.** A minimum of 45 hours of upper division credit (3000-4000 level) is required for this degree. Mandatory state and institutional assessment exams will be required during your degree program. ***Failure to participate in required assessments may delay graduation.*** |
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|  |
| **Year 1** |   | **Year 1** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **\*ENG 1003** | Composition I | **3** | X |   | **\*ENG 1013** | Composition II | **3** | X |  |
| **\*SCOM 1203** | Oral Communications | **3** | X |   | **\*ECON 2313** | Principles of Macroeconomics | **3** |   |  |
| **\*MATH 1023** | College of Algebra | **3** | X |   | **\*HIST 2763/2773 or POSC 2103** | US History to **or** since 1876 **or**  Intro to US Government | **3** | X |  |
| **\*ENG 2003 or \*ENG 2013 or PHIL 1103** | Intro to Lit I **or** Intro to Lit II **or** Intro to Philosophy | **3** | X |   | **\*Social Science** | Gen. Ed. Approved Social Science | **3** | X |  |
| **\*UC 1013** | Making Connections | **3** |   |   | **\*ART, MUS or, THEA 2503** | Fine Arts Visual, Musical, Theatre | **3** | X |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **15** |   |  |
| **Year 2** |   | **Year 2** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **\*Physical Science** | Gen. Ed. Approved Physical Science | **4** | X |   | **\*Life Science**  | Gen. Ed. Approved Life Science | **3** | X |  |
| **\*Social Science** | Gen. Ed. Approved Social Science | **3** | X |   | **\*Life Science Lab** | Gen. Ed. Approved Life Science Lab | **1** | X |  |
| **\*ECON 2323** | Principles of Microeconomics | **3** |   |   | **\*MGMT 3123** | Principles of Management | **3** |   |  |
| **\*MATH 2143** | Business Calculus | **3** |   |   | **\*ACCT 2133** | Intro to Managerial Accounting | **3** |   |  |
| **\*ACCT 2033** | Intro to Financial Accounting | **3** |  |   | **\*LAW 2023** | Legal Environment of Business | **3** |   |  |
|  |   |  |   |   | **\*Electives** |   | **3** |   |  |
| **Total Hours** |   | **16** |   |   | **Total Hours** |   | **16** |   |  |
| **Year 3** |   | **Year 3** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| **\*TECH 3773** | Statistics | **3** |   |   | **\*TECH 4823** | Quality Assurance | **3** |   |  |
| **\*POSC 3003** | Introduction to Political Analysis | **3** |   |   | ***\*EGRM 3013*** | *Project Management and Practice* | ***3*** |  |  |
| **\*TECH 3863** | Industrial Safety | **3** |   |   | ***\*EGRM 4023*** | *Engineering Management I* | ***3*** |  |  |
| **\*TECH 4813** | Operations Systems Research | **3** |   |   | **\*Electives** |   | **6** |   |  |
| ***\*EGRM 3003*** | *Technical Entrepreneurship* | ***3*** |  |   |  |   |  |   |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **15** |   |  |
| **Year 4** |   | **Year 4** |  |
| **Fall Semester** |   | **Spring Semester** |  |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |   | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  |
| ***\*EGRM 4003*** | *Engineering Management Design I* | ***3*** |  |   | ***\*EGRM 4013*** | *Engineering Management Design II* | ***3*** |  |  |
| ***\*EGRM 4053*** | *Human Resources for Engineers* | ***3*** |  |   | ***\*EGRM 4073*** | *Facilities Management Systems* | ***3*** |  |  |
| ***\*EGRM 4033*** | *Value Engineering Systems* | ***3*** |  |   | ***\*EGRM 4043*** | *Logistics and Supply Chain Systems* | ***3*** |  |  |
| ***\*EGRM 4063*** | *Engineering Management Internship* | ***3*** |  |   | **\*Electives**  |   | **4** |   |  |
| **\*Electives**  |   | **3** |   |   |  |   |   |   |  |
|  |  |   |  |   |  |   |  |   |  |
| **Total Hours** |   | **15** |   |   | **Total Hours** |   | **13** |   |  |
|  |  |  |  |  |  |  |  |  |  |
| **Total Jr/Sr Hours after 1st 30** | **45** |  |  | **Total Degree Hours** | **120** |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Graduation Requirements:** |   |  |
| Completion of HIST 2763 or HIST 2773 or POSC 2103  |   |  |
| English Proficiency (Grade of C or better in ENG 1003 and ENG 1013) |   |  |
| Grade C or better in all Engineering Management Core courses |   |  |
| 2.00 GPA at ASU |   |  |
| 2.00 GPA Overall |   |  |
| Maximum of 25% of the degree program via examination, PLA, Military or similar means; CLEP (30 hrs max)  |  |
| 45 JR/SR Hours ***after completing 30 hours*** |   |  |
| 120 Total Credit Hours |   |  |
| 18 of last 24 hours must be A-State-Jonesboro courses |   |  |
| Complete half of the last 50% of semester hours through the A-State campus |   |  |
| *\* Course offered online* |  |  |

**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. Please include a before (with changed areas highlighted) and after of all affected sections.** **\*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.**  |

**Reference 2020-21 Undergraduate Bulletin.**

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181 •Department of Computer Science

186 •Engineering Programs

188 •Civil Engineering Program

192 •Electrical Engineering Program

195 •Mechanical Engineering Program

202 •Engineering Technology Program

209 •Land Surveying and Geomatics Program

213 •College of Liberal Arts and Communication

**Pg. 9.**

209 •Land Surveying and Geomatics Program

213 •Engineering Management Systems

213 •College of Liberal Arts and Communication

**Pg. 62**

**Bachelor of Science (B.S.)**

|  |
| --- |
| Accounting |
| Biological Sciences (emphasis in): |
| —Biology |
| —Botany |
| —Pre-professional Studies |
| —Zoology |
| Biotechnology |
| Business Administration |
| —Sustainable Business Practices |
| Business Economics |
| Chemistry: |
| —Pre-Health Profession Studies |
| Clinical Laboratory Science |
| Communication Disorders |
| Computer and Information Technology |
| Computer Science |
| Creative Media Production (emphasis in): |
| —Corporate Media |
| —Graphic Communication |
| —Sports Media |
| Dietetics |
| Digital Innovations (emphasis in): |
| —Graphic Communications |
| —Strategic Communications |
| Disaster Preparedness/Emergency Mgmt. |
| Environmental Science |
| Exercise Science |
| Finance (emphasis in): |
| —Banking |
| —Financial Management |
| Global Supply Chain Management |
| Health Promotion |
| Health Studies |
| Interdisciplinary Studies |
| International Business |
| Land Surveying and Geomatics |
| Management (emphasis in): |
| —Hospitality Management |
| —Human Resource Management |
| —International Business |
| Marketing: |
| — International Business |
| — Logistics |
| — Marketing Analytics |
| — Sales |
| Mathematics |
| Multimedia Journalism |

**Pg. 62**

**Bachelor of Science (B.S.)**

|  |
| --- |
| Disaster Preparedness/Emergency Mgmt. |
| **Engineering Management Systems** |
| Environmental Science |

**Pg. 80.**

**COLLEGE OF ENGINEERING AND COMPUTER SCIENCE**

Department of Computer Science

Program for Civil Engineering

Program for Electrical Engineering

Program for Mechanical Engineering

Program for Engineering Technology

**Pg. 80.**

**COLLEGE OF ENGINEERING AND COMPUTER SCIENCE**

Department of Computer Science

Program for Civil Engineering

Program for Electrical Engineering

Program for Mechanical Engineering

Program for Engineering Technology

Program for Engineering Management Systems

**Pg. 180**

**College of Engineering and Computer**

**Science**

*Professor Abhijit Bhattacharyya, Dean*

*Associate Professor Yeonsang Hwang, Associate Dean*

**PROGRAMS OF STUDY**

The College of Engineering and Computer Science offers undergraduate degree programs in a broad spectrum of areas, including a Bachelor of Arts degree in Computer Science; a Bachelor of Science degree in Computer Science; a Bachelor of Science in Civil Engineering degree; a Bachelor of Science in Electrical Engineering degree; a Bachelor of Science and Associate of Applied Science in Land Surveying and Geomatics; a Bachelor of Science in Mechanical Engineering degree; and a Bachelor of Science and an Associate of Science in Engineering Technology degree. Minors are also available in Computer Science, Land Surveying and Geomatics, Engineering and Renewable Technology.

The College of Engineering and Computer Science grants a wide-range of master’s degree (M.E.M., M.S., M.S.E., M.S.Engr.) programs and multiple graduate certificates. For further information, see A-State’s Graduate Bulletin.

The college is comprised of one department and three programs:

Department of Computer Science

Program for Civil Engineering

Program for Electrical Engineering

Program for Mechanical Engineering

Program for Engineering Technology

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**College of Engineering and Computer**

**Science**

*Professor Abhijit Bhattacharyya, Dean*

*Associate Professor Yeonsang Hwang, Associate Dean*

**PROGRAMS OF STUDY**

The College of Engineering and Computer Science offers undergraduate degree programs in a broad spectrum of areas, including a Bachelor of Arts degree in Computer Science; a Bachelor of Science degree in Computer Science; a Bachelor of Science in Civil Engineering degree; a Bachelor of Science in Electrical Engineering degree; a Bachelor of Science and Associate of Applied Science in Land Surveying and Geomatics; a Bachelor of Science in Mechanical Engineering degree; ~~and~~ a Bachelor of Science and an Associate of Science in Engineering Technology degree; and a Bachelor of Science in Engineering Management Systems degree. Minors are also available in Computer Science, Land Surveying and Geomatics, Engineering and Renewable Technology.

The College of Engineering and Computer Science grants a wide-range of master’s degree (M.E.M., M.S., M.S.E., M.S.Engr.) programs and multiple graduate certificates. For further information, see A-State’s Graduate Bulletin.

The college is comprised of one department and ~~three~~ five programs:

Department of Computer Science

Program for Civil Engineering

Program for Electrical Engineering

Program for Mechanical Engineering

Program for Engineering Technology

Program for Engineering Management Systems

**Program description added immediately after pg 212.**

**Engineering Management Systems Program**

**Assistant Professors: Sokolov**

**Instructors: Burcham**

 The Bachelor of Science in Engineering Management Systems degree prepares graduates to understand the engineering relationships between the management tasks of planning, organization, leadership, control, and the human element in production, research, and service organizations; to understand and deal with the stochastic nature of management systems. The program also prepares graduates to integrate management systems into a series of different technological environments.

**PROGRAM EDUCATIONAL OBJECTIVES**

Specific program outcomes are listed below. The Engineering Management Systems program graduates will have:

* Graduates have successfully advanced in engineering management systems practice as evidenced by their achievements and contributions to their employers and the community.
* Graduates have pursued graduate degrees or completed professional development activities in continuing to advance their knowledge base in the engineering management systems or related professional fields.
* Graduates are actively working to improve their community and society in general by utilizing and sharing their engineering management systems expertise.

**PROGRAM LEARNING OUTCOMES**

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
3. an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and
5. an ability to function effectively as a member as well as a leader on technical teams.

Admission Requirements:

 Students must meet the University admission standards.

**Major in Engineering Management Systems**

**Bachelor of Science**

A complete 8-semester degree plan is available at <https://www.astate.edu/info/academics/degrees/>

|  |  |
| --- | --- |
| **University Requirements:** |  |
|   | See University General Requirements for Baccalaureate degrees |  |
| **First Year Making Connections Course:** | **Sem. Hrs** |
|   | UC 1013, Making Connections (or equivalent course) | **3** |
| **General Education Requirements:** | **Sem. Hrs** |
|   | See General Education Curriculum for Baccalaureate degrees | **35** |
|   |  |  |
|   | **Students with this major must take the following:** |  |
|   |  *MATH 1023, College Algebra or MATH course that requires MATH 1023 as a prerequisite* |
|   |  *COMS 1203, Oral Communication* |  |
|   |  *ECON 2313, Principles of Macroeconomics* |  |
|   |  *ECON 2323, Principles of Microeconomics* |  |
|   |  |  |
| **Major Requirements:** | **Sem. Hrs.** |
|   | Grade of "C" or better required for all major requirements |  |
|   | ACCT 2033, Introduction to Financial Accounting | 3 |
|   | ACCT 2133, Introduction to Managerial Accounting | 3 |
|   | EGRM 3003, Technical Entrepreneurship | 3 |
|   | EGRM 3013, Project Management and Practice | 3 |
|   | EGRM 4003, Engineering Management Design 1 | 3 |
|   | EGRM 4013, Engineering Management Design 2 | 3 |
|   | EGRM 4023 Engineering Management I | 3 |
|   | EGRM 4033 Value Engineering Systems | 3 |
|   | EGRM 4043 Logistics and Supply Chain | 3 |
|   | EGRM 4053 Human Resources for Engineers | 3 |
|   | EGRM 4063, Engineering Management Internship | 3 |
|   | EGRM 4073 Facilities Management | 3 |
|   | LAW 2023, Legal Environment of Business | 3 |
|   | MATH 2143, Business Calculus | 3 |
|   | MGMT 3123, Principles of Management | 3 |
|   | POSC 3003, Introduction to Political Analysis | 3 |
|   | TECH 3773, Statistics | 3 |
|   | TECH 3863, Industrial Safety | 3 |
|   | TECH 4813, Operations Systems Research | 3 |
|   | TECH 4823, Quality Assurance | 3 |
| **Sub-total** | **60** |
|   | Electives | 22 |
| **Total Required Hours** | **120** |

Course Descriptions to be added at page 475 in the 2020-2021 Undergraduate Bulletin.

**Engineering Management (EGRM)**

**EGRM 3003 Technical Entrepreneurship** Perspectives at the political, social, and personal levels for engineers dealing with entrepreneurship and innovation. Project required. Fall.

**EGRM 3013 Project Management and Practice** The identification, selection, and planning of projects, including structure, work breakdown structures (WBS), scheduling, PERT/Gantt charts, critical path method (CPM), budgeting, decision analysis, risk management, and the monitoring and control of projects. Spring.

**EGRM 4003 Engineering Management Design I** Multidisciplinary group work on a design problem from conceptualization through selection of best alternative. A project proposal is required. Prerequisites, C or better in MATH 2143 or MATH 2204. Fall.

**EGRM 4013 Engineering Management Design II** Group work to complete final design and testing aspects of a senior design project. A public oral presentation is required. Prerequisite, C or better in EGRM 4003. Spring.

**EGRM 4023 Engineering Management I** The essentials of management that are pertinent to practicing managers are emphasized. The theory, principles, and techniques are presented as an art and applying the science of the underlying organized knowledge of management to the realities of situations. Prerequisites, C or better in MATH 2143 or MATH 2204. Spring.

**EGRM 4033 Value Engineering Systems** Application of techniques which maximize the value of products, processes, construction, or services. Topics covered include functional analysis, functional costing, generation of alternative designs, evaluation of alternative designs, lifecycle cost analysis, proposal preparation, and presentations. Prerequisites, C or better in MATH 2143 or MATH 2204. Fall.

**EGRM 4043 Logistics and Supply** **Chain Systems** Topics of logistics operations in transportation, concepts of facilities and methods used in supply chain. Third party logistics, fleet management, physical distribution and a number of other concepts are introduced. Prerequisites, C or better in MATH 2143 or MATH 2204. Spring.

**EGRM 4053 Technical Human Resource Management for Engineers** Application of human resource management in an organization, including human resource leadership, recruitment strategies, equal employment selection, employee retention and turnover, performance management, employment law, diversity, and global talent management. Prerequisites, C or better in MATH 2143 or MATH 2204. Fall.

**EGRM 4063 Engineering Management Internship** Practical experience in engineering management. Evaluation and reports required. Prerequisites, program director approval. Fall, Spring.

**EGRM 4073 Facilities Management Systems** Methods of designing new facilities and expanding or renovating existing facilities. Planning facility layout, facility location, and activities are presented. Topics such as analysis of workspace, workflow, material handling systems, facility planning data collection methods, and process flow-charting are covered. Prerequisites, C or better in MATH 2143 or MATH 2204. Spring.

**Curriculum and Instruction (ELCI)**

**ELCI 4013. Curriculum and Assessment Instructional Theory and Practice** Course focuses on current theory and practice for instructional techniques and fundamentals of educational measurement as they apply to classroom situations. This course is a corequisite to the TI 4013 Teaching Internship