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

**Bulletin / Banner Change Transmittal Form**

**[ ] Undergraduate Curriculum Council**

**[X] 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](mailto:curriculum@astate.edu) for inclusion in curriculum committee agenda.

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| |  |  | | --- | --- | | Dr. David Jeong | 4/10/2019 |   **Department Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **COPE Chair (if applicable)** |
| |  |  | | --- | --- | | Joan Burcham | 4/10/2019 |   **Department Chair:** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Head of Unit (If applicable)** |
| |  |  | | --- | --- | | Jason Stewart | 4/10/2019 |   **College Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Undergraduate Curriculum Council Chair** |
| |  |  | | --- | --- | | Dr. Yeonsang Hwang | 4/10/2019 |   **College Dean** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Graduate Curriculum Committee Chair** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (If applicable)** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Vice Chancellor for Academic Affairs** |

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

Joan Burcham, [dburcham@astate.edu](mailto:dburcham@astate.edu), 870-972-4838

**2.Proposed Change**

Update course requirements for the Master of Engineering Management by adding new EGRM courses and removing courses from other disciplines.

**3.Effective Date**

Fall 2019 (2019-20 Bulletin)

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

The Master of Engineering Management program has been modified to include courses that are specifically-focused on knowledge and skills needed in the engineering management field.

**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 158

**Program of Study for the Master of Engineering Management Degree**

The Master of Engineering Management (MEM) program, a one-year master’s degree plan consisting of 30 semester credit hours, is designed for all engineers on management career paths as well as for those charged with managing technology in engineering, manufacturing, and other high-tech organizations. The MEM degree program will also benefit engineers pursuing licensure in states where candidates for professional licensure are required to have an additional 30 semester credit hours of coursework beyond the bachelor’s degree or a master’s degree in engineering. The curriculum consists of courses offered by the A-State College of Engineering and Computer Science ~~and the Neil Griffin College of Business~~.

Specific program outcomes are listed below. MEM program graduates will have:

• An ability to plan, make decisions, implement actions, and measure results related to human resources and capital aspects of engineering management;

• An ability to identify critical issues, formulate~~s~~ realistic solutions, evaluate alternatives, and solve engineering management problems;

• A good understanding of statistical concepts and methods and an ability to apply this knowledge to engineering and management problems;

• A good understanding of quality control and improvement techniques and an ability to apply this knowledge to manufactured products and other engineering applications;

• A good understanding of deterministic modeling and ability to apply this knowledge to engineering management problems including design of experiments;

• An ability to function on multi-disciplinary management teams; and

• An ability to communicate effectively, both orally and in writing.

**MEM ADMISSION REQUIREMENTS**

Students seeking admission into the Master of Engineering Management degree program must meet the admission requirements of Graduate Programs. In addition, applicants for the master’s program in Engineering Management will be evaluated by the College of ~~Agriculture,~~ Engineering and Computer Science ~~Technology~~ based upon their undergraduate academic record, scores on the Graduate Record Examination, resume, and letters of recommendation. Students judged to be deficient in some areas of undergraduate preparation may be required to complete certain undergraduate preparatory courses. Minimum specific requirements for unconditional admission include: 1) 18 undergraduate hours in engineering with a grade of C or better, a grade of C or better in upper-level mathematics courses, and an overall undergraduate grade point average of 2.75 or greater (on a 4.0 scale); 2) A minimum GRE score of 143 on verbal reasoning; 3) two letters of recommendation; and 4) a resume. Applicants not meeting all of the above criteria may be admitted on a conditional basis if they meet other Graduate Programs admission requirements. New students not having completed the GRE may be admitted on a conditional basis, but they must complete this requirement prior to finishing the first semester of coursework. New students are normally admitted for the fall semester with applications due by June 1. Applications submitted after June 1 or any other time during the year will be considered based on qualifications and space availability. A candidate for the Master of Engineering Management must pass a comprehensive exam in addition to completing the 30 hours required for the degree.

**MEM DEGREE REQUIREMENTS**

The number of semester credit hours for the master’s degree is 30. Students are required to complete core courses (21 semester credit hours) and elective courses (~~6~~ 9 semester credit hours). 65 The bulletin can be accessed at http://www.astate.edu/a/registrar/students/ Engineering Management Master of Engineering Management University Requirements: See Graduate Degree Policies for additional information (p. 35) Program Requirements: ~~Sem. Hrs.~~ ~~Select~~ T~~t~~wenty-one ~~four~~ hour~~s~~ ~~from the following:~~ core which consists of EGRM 6003 Engineering Statistics, EGRM 6013 Quality Control and Improvement, EGRM 6023 Engineering Management I, ~~EGRM 6033, Engineering Management II~~ EGRM 6043 Operations Research, EGRM 6063 Engineering Law and Ethics, EGRM 6083 Project Management for Engineers, EGRM 6113 Engineering Finance and Budgeting; Nine hours of electives selected from ~~MBA 500V, Survey of Accounting OR POSC 6553, Public Budgeting and Finance MBA 501V, Survey of Finance AND MBA 507V, Survey of Law OR POSC 6593, Seminar in Human Resources Management MKTG 6223, Strategic Marketing OR COMS 5113, Integrated Marketing Communication 24 Elective Track~~ ~~(Select nine hour from the following~~ ~~one of the following tracks~~): ~~Option 1: For those pursuing Professional Engineering Licensing in states that require coursework beyond the B.S. degree in Engineering. Engineering course~~ ~~EGRM 6073, Special Problems in Engineering Management,~~ EGRM 6053 Engineering Economy, EGRM 6073 Special Problems in Engineering Management ~~Option 2 (Select two of the following): For those not pursuing Professional Engineering Licensing. ECON 6353, Environmental Economics~~ EGRM 6103 Entrepreneurship for Engineers, EGRM 6123 Human Resource Management for Engineers~~MGMT 6413~~, or CE/CS/EE/ME/ENGR course, 5000-level or above. ~~dual-listed,~~  ~~Seminar in Organizational Behavior and Leadership MIS 6413, Management Information Systems 6~~ ~~Sub-total 30~~ Total Required Hours: 30

p. 159

**Engineering Management**

Master of Engineering Management

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| **University Requirements:** |  |
| See Graduate Degree Policies for additional information (p. 47) |  |
| **Program Requirements:** | **Sem. Hrs.** |
| **~~Select twenty-four hours from the following:~~**  EGRM 6003, Engineering Statistics  EGRM 6013, Quality Control and Improvement  EGRM 6023, Engineering Management I  ~~EGRM 6033, Engineering Management II~~  EGRM 6043, Operations Research  *EGRM 6063, Engineering Law and Ethics*  *EGRM 6083, Project Management for Engineers*  *EGRM 6113, Engineering Finance and Budgeting*  ~~MBA 500V, Survey of Accounting~~ **~~OR~~**  ~~POSC 6553, Public Budgeting and Finance~~  ~~MBA 501V, Survey of Finance~~ **~~AND~~** ~~MBA 507V, Survey of Law~~ **~~OR~~**  ~~POSC 6593, Seminar in Human Resources Management MKTG 6223, Strategic Marketing~~ **~~OR~~**  ~~COMS 5113, Integrated Marketing Communication~~ | 2~~4~~1 |
| **~~Elective Track (~~Selectnine hours from the following:~~one of the following tracks):~~**  **~~Option 1:~~**  *~~For those pursuing Professional Engineering Licensing in states that require coursework beyond the B.S. degree in Engineering.~~*  *EGRM 6053, Engineering Economy*  EGRM 6073, Special Problems in Engineering Management  *EGRM 6103, Entrepreneurship for Engineers*  *EGRM 6123, Human Resource Management for Engineers*  CE/CS/EE/ME/ENGR course, 5000-level or above ~~dual-listed, engineering course~~  **~~Option 2 (Select two of the following):~~**  *~~For those not pursuing Professional Engineering Licensing.~~*  ~~ECON 6353, Environmental Economics~~  ~~EGRM 6073, Special Problems in Engineering Management MGMT 6413, Seminar in Organizational Behavior and Leadership MIS 6413, Management Information Systems~~  ~~MIS 6523, Simulation and Predictive Decision Making~~ | ~~6~~**9** |
| **Sub-total** | **30** |
| **Total Required Hours:** | **30** |

p. 337

**Engineering Management (EGRM)**

**EGRM 6003. Engineering Statistics** Basic concepts and methods of descriptive and inferential statistics including graphical techniques, measures of central tendency and dispersion, interval estimation, hypothesis and goodness of fit tests, comparisons of two populations, and analysis of variance. Prerequisite MATH 2204.

**EGRM 6013. Quality Control and Improvement** A brief review of the evolution of quality control and improvement theory particularly as influenced by key pioneers such as Deming, Juran, and Taguchi. Extensive coverage of selected quality improvement techniques includes statistical process control, inspection sampling, and design of experiments. Prerequisites, EGRM 6003.

**EGRM 6023. Engineering Management I** Basic principles and practices of engineering management activities including planning, organization, leadership, controlling, motivating, ethics, communications, and decision making; group research of special topics with written and oral presentations is required. ~~This course is restricted to graduate students majoring in Engineering Management.~~

**EGRM 6033. Engineering Management II** Principles and practices of engineering management including marketing management, globalization, time management, forecasting, finance, cost, accounting, managing technology, engineering management in the new millennium; invited lectures and seminars covering projects of interest to civil, electrical, mechanical, and manufacturing engineers in management positions. ~~Prerequisite, MBA 500V, MBA 501V, and EGRM 6023.~~ ~~This course is restricted to graduate students majoring in Engineering Management.~~

**EGRM 6043. Operations Research** Quantitative techniques for decision making; break-even analysis, economic models, Gaussian distributions, inventory control, production models, and mathematical programming. Prerequisite: EGRM 6003, Engineering Statistics.

***EGRM 6053. Engineering Economy Methodical assessment of the economic benefits and expenditures of projects concerning engineering design and analysis, including economic analysis for decision-making among contending opportunities.***

***EGRM 6063. Engineering Law and Ethics Introduction and application of legal concepts relating to the field of engineering management, including general principles, contracts, torts, real property, agency, intellectual property, product liability and safety, and professional legal ethics.***

**EGRM 6073. Special Problems in Engineering Management** A capstone, project-based course consisting of an investigation of an engineering management topic approved by the faculty; weekly project meetings, a formal engineer’s log book of activities, progress reports, oral presentation, and a comprehensive written report are required. ~~Prerequisite, EGRM 6033.~~ This course is restricted to graduate students in Engineering Management ~~and can only be taken during the first semester prior to graduation~~.

***EGRM 6083. Project Management for Engineers Fundamentals of project management for engineering and information systems projects based on the principles established by the Project Management Institute's Project Management Body of Knowledge.***

***EGRM 6103. Entrepreneurship for Engineers* *Entrepreneurship and innovation from perspectives at the political, social, and personal levels.***

***EGRM 6113. Engineering Finance and Budgeting Introduction and orientation to financial matters that concern engineers, with an emphasis on financial statements, cash flows, net present value calculations, and capital budgeting.***

***EGRM 6123. Human Resource Management for Engineers*  *Introduction to the strategic application of human resource management in an organization, including human resource leadership, e-recruitment strategies, equal employment selection, employee retention and turnover, performance management, employment law, diversity and global talent management.***