ENGINEERING MANAGEMENT
(EM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees
Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (http://louisville.edu/bursar/tuitionfee/).

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EM 525. Project Management 3 Units
Prerequisite(s): Admission into the Industrial Engineering or Engineering Management program or instructor permission.
Description: Use of CPM, PERT, precedence diagramming, resource allocation heuristics, and other techniques for planning, managing, and controlling engineering projects involving research and development, production, maintenance, and construction. Computer procedures and codes for analyzing complex project networks will be covered.
Note: Cross-listed with IE 525.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 560. Construction Management 3 Units
Prerequisite(s): Admission into the Engineering Management program or instructor permission.
Description: An investigation of the engineer’s role in the construction process. Study of the many variables influencing the project and associated methods of managing variables. Includes a practical demonstration of student’s understanding schedule and cost estimate for a project of the student’s choosing.
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EM 624. Human Resource Management 3 Units
Prerequisite(s): Admission into EM program or instructor permission.
Description: This course will introduce concepts of designing, operating, maintaining, and managing safety programs. Topics will be drawn from hazard avoidance, risk management, legislation (including OSHA & Worker’s Compensation), health management, accident investigation, building/facility safety, industrial hygiene, fire safety, personal protection, ergonomics, materials handling, machine guarding, electrical hazards, construction safety, systems safety, certification issues, ethics, and professionalism.
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EM 626. Effective Communication for Engineers 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): Admission into the EM program, or instructor permission.
Description: Students will gain knowledge in the processes and techniques of communication in an engineering setting and in the effective presentation of ideas. Students will develop skills in written and oral communication, and information analysis, research, and planning. Emphasis will be placed on learning the communication needs for a variety of audiences. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 627. Information Technology Management 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Admission in EM program or instructor permission.
Description: This course will focus on the role of information technology in business environments. The use and management of data supplied externally to the firm (e.g., customer transactions) and data generated internally by the firm (e.g., production orders) will be considered. Emphasis will be placed on leveraging reliable data to derive meaningful information that is relevant to the decisions a firm must make. The following topics will be included: Data Structure, Network Structure, System Security, System Access, System Reliability, Component Integration, User Interfaces, and Analytical Reports. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 628. Engineering Management 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: This course will focus on the role of engineering management in the application of information systems in business environments. The use and management of data supplied externally to the firm (e.g., customer transactions) and data generated internally by the firm (e.g., production orders) will be considered. Emphasis will be placed on leveraging reliable data to derive meaningful information that is relevant to the decisions a firm must make. The following topics will be included: Data Structure, Network Structure, System Security, System Access, System Reliability, Component Integration, User Interfaces, and Analytical Reports. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 632. Quality Management 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EM 661 and IE 563; admission in EM program or instructor permission.
Description: This course will focus on the role of quality improvement methodology in both manufacturing and service environments. Emphasis will be placed on behavioral approaches to quality improvement and quantitative methods of quality control. The following topics will be included: Corporate Quality Programs, Applications for Quality Improvement, Measurement Systems Analysis, Statistical Process Control, Experimental Design, Root Cause Analysis, and Design for Quality. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 640. Applied Systems Analysis 3 Units
Prerequisite(s): IE 360 or equivalent; admission into the EM program or instructor permission.
Description: This course examines various approaches for managing financial resources in the technology enterprise, including cost accounting and cost estimating. The focus is both direct and indirect costs for materials, labor and overhead. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 645. Decision and Risk Analysis 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission in EM program or instructor permission.
Description: This course will focus on the role of decision-making in an engineering setting and in the effective presentation of ideas. Students will develop skills in written and oral communication, and information analysis, research, and planning. Emphasis will be placed on learning the communication needs for a variety of audiences. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 646. Marketing and the Engineer 3 Units
Prerequisite(s): Admission into the EM program or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion, and distribution. Case studies and problems are used throughout the course to highlight important concepts and principles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 655. Supply Chain Management 3 Units
Prerequisite(s): EM 613 and admission in EM program, or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion, and distribution. Case studies and problems are used throughout the course to highlight important concepts and principles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 656. Supply Chain Management II 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Admission in EM program, or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion, and distribution. Case studies and problems are used throughout the course to highlight important concepts and principles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 661. Engineering Statistics II 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): IE 360 (or equivalent) and admission into the EM program, or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion, and distribution. Case studies and problems are used throughout the course to highlight important concepts and principles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 667. Engineering Financial Management 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion, and distribution. Case studies and problems are used throughout the course to highlight important concepts and principles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
EM 672. Management Law for Engineers 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission in EM program or instructor permission.
Description: In this course, students will study the common law as it pertains to Contracts, Torts and Real Estate; rules governing business transactions in the area of creditors' rights in secured transactions and suretyship; sales as covered by the Uniform Commercial Code; business relationships such as agency and forms of business ownership, and ethics and professional liability.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 674. Intellectual Property Law for Engineers 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: A study of U.S. law governing the protection for various forms of intellectual property including patent, trademark, and copyright law. Issues addressed include creation, ownership, acquisition, use, and transfer of various forms of intellectual property.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 676. Effective Leadership 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: In this course, students will gain a comprehensive understanding of the leadership skills and practices required to advance the mission of an organization. Emphasis will be placed on establishing strategic direction with supporting tactics, enhancing the organization's problem solving capabilities, fostering an environment of reliable change implementation, and communicating with impact. The following topics will be included: Mission and Vision Statements, Corporate Values, Sourcing Decisions, Performance Improvement Systems, Change Management, and Leadership Styles.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 684. Applications for Process Improvement I 1.5 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EM 613/IE 240, EM 661/IE 563; admission in EM program or instructor permission.
Corequisite(s): EM 685.
Description: In this course, students will learn the process improvement methodologies of six sigma. Emphasis will be placed on the quantitative and qualitative tools covered in EM 613 (IE 240 equivalent) and EM 661 (IE 563 equivalent) and how to use these tools within framework of the DMAIC process of six sigma. Students will compete the Define Phase of DMAIC.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 685. Applications for Process Improvement II 1.5 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EM 613/IE 240, EM 661/IE 563; admission in EM program or instructor permission.
Corequisite(s): EM 684.
Description: In this course, students will apply the tools learned in EM 684 to complete a project. Students entering the class will have already completed the Define phase of DMAIC and in this class, will complete Measure, Analyze, Improve, Implement, and Control. At the end of the class, students have the option of taking an exam (for an additional fee) to obtain their Six Sigma Black Belt Certification.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 693. Independent Study in Engineering Management 1-6 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 694. Special Topics in Engineering Management 1-6 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: A theoretical or experimental investigation of an engineering management problem.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 697. MEng Thesis in Engineering Management 1-6 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Admission in EM program, or instructor permission, and EM 694 to complete a project. Students entering the class will have already completed the Define phase of DMAIC and in this class, will complete Measure, Analyze, Improve, Implement, and Control. At the end of the class, students have the option of taking an exam (for an additional fee) to obtain their Six Sigma Black Belt Certification.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

EM 699. Engineering Management Master's Degree Project 3 Units
Prerequisite(s): Instructor permission required.
Description: The Engineering Management MEng student carries out an engineering project under the supervision of a faculty mentor, prepares an acceptable written report, and presents a seminar on the project.
Note: Cross-listed with IE 699.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)