Graduate Studies in
Engineering Management

David L. Davidson
Program Director
Graduate Studies in Engineering Management

• Master of Science

Justin A. Myrick, Dean, Raymond B. Jones College of Engineering
David L. Davidson, P.E., Program Director

The mission of the engineering management program at Lipscomb University is to assist the student with his/her need for lifelong learning that will enhance leadership and technical skills, along with the moral guidance to ethically lead engineering focused organizations.

Lipscomb’s Masters of Science in Engineering Management is an executive-level program which allows students to complete their degree in as little as 12 months while continuing their present careers. The degree program consists of a 30-hour curriculum designed to give the student an in-depth study into the areas of responsibilities of an executive-level position within an engineering-focused organization.

Admission Policies and Procedures

Applicants to graduate programs must submit the following:

1. Application Form. Each applicant must complete an application form. The application form is available at www.lipscomb.edu/admissions/graduate, then click on “Apply by Program” to complete the online application.

2. Application Fee. Each application should be accompanied by a $50 nonrefundable application fee ($75 for international students).

3. Standardized Exam Score. Scores from the Graduate Record Examination must be consistent with:
   - 154 (Verbal)
   - 166 (Quantitative)
   - 3.6 (Analytical Writing).
   Students with these scores will be given preference for entrance into the program.

4. References. Two letters of reference are required as follows: one from a college or university administrator or professor and one from a professional supervisor/employer or personal reference.

5. Official Transcript(s). Each applicant must submit an official transcript, showing degree conferral when appropriate, from all schools attended.

6. Health Form.* Each applicant must submit a completed health form signed by a health care provider. (To print a copy of the health form, visit www.lipscomb.edu/healthcenter/forms).

7. FERPA.* The Family Educational Rights and Privacy Act affords students certain rights of access to educational records; even if you are independent of your parents, you must submit this form prior to enrollment.

8. Resume. A resume detailing the applicant’s work and academic experience is required.

9. Goals Essay. Explain your goals and purpose for pursuing the degree in a clear, concise essay. There is no minimum word count required.

10. TOEFL. The Test of English as a Foreign Language is required for international students. (See section titled “International Students” for more information.)

All application items should be sent to: Graduate Studies in Engineering Management, Lipscomb University, One University Park Drive, Nashville TN 37204-3951. Once all application materials are received and reviewed, a determination on the candidate’s admission will be made. Application deadlines are posted on the program’s website (graduateengineering.lipscomb.edu). Classes are offered in 8 week segments. Students may take one class per 8 weeks and attend one night per week, or take two classes per 8 weeks and attend class two nights per week.

*These forms must be submitted after acceptance into the program.
Transfer and Waiver of Courses
Although all graduate credit hours may be transferred from another accredited institution, a maximum of nine hours will be counted toward the M.S. in engineering management. The director or appropriate faculty member of the graduate program will evaluate the course(s) being proposed for transfer and make a determination of suitability. No course with a grade below a “B” will be considered for transfer.

Special consideration for course waiver may be given to the student who has special study and/or experience in a given subject area. The waiver will be by means of an examination that is passed with a grade of “B” or better. A $170 fee is charged for each examination taken (includes $70 for evaluating and recording and $100 per course for constructing and administering). A maximum of six hours may be waived by examination. Arrangements for a waiver are to be made through the graduate studies in engineering office. No graduate credit is awarded.

Documentation
Students are required to provide satisfactory documentation of personal identification for off-site learning experiences required in many programs of graduate study at Lipscomb University. Failure to provide proper credentials will result in failure to complete the desired course of study. For complete policy, see section entitled Required Documentation for Off-Site Learning Experiences in the opening section of this catalog.

Student Classifications
Students are admitted to graduate courses in one of five categories:

1. Graduate Student: one who has satisfied all admissions requirements. (Average of 3.0 on undergraduate work.) The student must be graduate of an ABET accredited institution, all others will be decided upon on a case by case basis. A student with an incomplete admission file can be accepted to the program at the discretion of the program director but will be placed on an academic hold which will prevent registration for the following semester. Once the proper admissions documents have been received, the hold will be removed and the student will be allowed to register for the following semester.

2. Conditionally Admitted Student: one who has been admitted conditionally, at the discretion of the program director, without satisfying all admission requirements. Students admitted with the following criteria may be required to complete a minimum of nine hours of graduate work with a grade of “B” or above before the conditional admission is removed.
   a. From an unaccredited school or with a GPA or GRE score below admission requirements.
   b. A transfer student with a graduate GPA between 2.50 and 2.99. The transfer student must be in good standing at the previous institution attended.

3. Non-Degree Student: one who has been admitted to graduate studies and has met all admission requirements except GPA. The student may take up to nine semester hours for graduate credit. Those hours may be applied toward a master’s degree if the student makes a grade of “B” or better in the courses taken for credit and if all admission requirements (GPA) are met and the student is formally admitted to a graduate program as a degree-seeking student.

4. Visiting Student: one who is currently enrolled as a student in good standing at the post-bachelor’s level at another graduate school, wishes to take courses at Lipscomb and desires to have transcript evidence of course work done at Lipscomb provided for the school of primary enrollment.

5. Probationary Student: one who has been readmitted to a graduate program following academic suspension from the program.

Admission to a program does not imply admission to candidacy for the master’s degree. Only those students who meet the requirements for “graduate student” described above are eligible for candidacy.
Academic Policies

Course Load
A student enrolled for nine hours is considered a full-time student. A student enrolled for six hours is considered a half-time student. A student enrolled for less than six hours is considered a part-time student. No student will be permitted to enroll for more than 12 hours per semester without special approval from the director of the graduate program.

Academic Standing

1. **Good Academic Standing**: To remain in good academic standing, the M.S. in engineering management student must maintain a cumulative 3.00 GPA and a 3.00 GPA on the most recent 12 semester hours of work.

2. **Probation**: Should the student’s cumulative graduate GPA fall below 3.00, he or she will be placed on academic probation. A student on academic probation will not be allowed to enroll for more than 6 hours during any term the probation applies. The probationary student is required to achieve a 3.00 cumulative GPA by the time the student has completed the next nine hours of course work. A course(s) may be repeated to achieve the requisite GPA. If the requisite GPA is attained, the academic probation status will be removed.

3. **Suspension**: If the requisite GPA is not attained, the student will be suspended from graduate studies at Lipscomb for the following semester, after which the student may apply for readmission. The student may be required to appear before the graduate committee. Failing grades will provide no credit toward the degree but will be included in figuring scholarship level, unless replaced with a higher grade by repeating the course(s). A 3.00 GPA must be maintained to be eligible for financial assistance.

4. **Appeals**: Appeals to suspension decisions should be made in writing to the vice provost for academic development and graduate studies. Appeals must be received no later than 4:30 p.m. on the Monday of the week before classes begin for the term during which the student wishes to be readmitted.

Degree Completion Requirements

Residency
No period of formal residency is required for a degree in a master’s program.

Statute of Limitations
All requirements for the M.S. in engineering management degree must be completed within a five-year period from the time of initial matriculation.

Candidacy
Admission to a program does not imply admission to candidacy for the master’s degree. During the course of pursuing the M.S. degree, the student must be admitted to “candidacy.” For admission to candidacy the student must satisfy the following:

1. Complete all required undergraduate deficiencies if admitted on condition.
2. Complete at least 12 hours of graduate work.
3. Maintain a 3.00 GPA on all courses taken toward the requirements for the degree with no incomplete grades.
4. File a degree plan/application for candidacy in the graduate program office which meets all requirements and is approved by the administrator of the graduate program and the dean of the college. The degree plan must be filed during the second semester of graduate work in the program.

After admission to candidacy and approval of the degree plan, any changes in the degree plan must be approved by the administrator of the graduate program and the dean of the college. The application for candidacy must be filed before the beginning of the student’s last semester in the program. No student will be allowed to graduate in the same semester in which the application for candidacy is filed.

Minimum Credits
The M.S. in engineering management requires 30 semester hours, exclusive of hours accumulated to satisfy academic deficiencies.

The minimum cumulative grade point average for all graduate education programs is 3.00 for all graduate courses taken for graduate credit while pursuing the degree. No grade below a “C” is acceptable. Such grades will not apply toward degree completion.
Graduation
Students must register for GN 999X the semester in which all course work will be completed for graduation. Students who do not file their intent to graduate form in the registrar’s office by the end of the first week of their last semester may be delayed in graduating. Graduate students receiving degrees are hooded during the May and Dec. commencement exercises.

Appeals
Any exceptions to the above stated requirements would require approval via the appeal process established by the graduate academic leadership team.
Financial Information

Tuition and Fees for 2015-16

Basic charges* per semester:
Tuition per semester hour of graduate credit ...........$1,286
Tuition to audit without credit ...........50% of regular tuition

Special Fees
Application fee .......... $50 ($75 for international students)
Application for Graduation fee ......................... $195
Returned check fee ........................................ $30
TouchNet (monthly payment) .......................... $60
enrollment fee per semester
Withdrawal fee ............................................ $195

*Effective May 1, 2015

Master of Science in Engineering Management
(30 hours required)

Core Courses (18 Hours):
EMGT 5103  Applied Engineering Statistics
EMGT 5153  Engineering Project Management
EMGT 5163  Operations Analysis I
EMGT 5173  Operations Analysis II
EMGT 5343  Engineering Economics
BU 6533    Leadership and Organizational Behavior
OR
BU 6933    Accounting: Professional Services

Electives (9 Hours):
EMGT 5133  Manufacturing Systems and Supply Chain Design
EMGT 5143  Quality Systems
EMGT 5183  Advanced Project Management
EMGT 5213  Leading Professionals
EMGT 5233  Developing Opinion Leaders
EMGT 5323  Procurement Management
EMGT 5353  Managing Professional Services Firms
EMGT 599V  Special Topics in Engineering Management

Capstone Project (3 Hours):
The course of study will conclude with a capstone project that requires a comprehensive application of the new skills learned.
EMGT 5443  Applied Research-Engineering Management

Course Descriptions

EMGT 5103  Applied Engineering Statistics (3)
Modeling and analysis of uncertainty and variation by probability models and distribution, regression, and basic statistical procedures pertinent to engineering. The course will cover introduction to experimental design, Taguchi methods and statistical process control.

EMGT 5133  Manufacturing Systems and Supply Chain Design (3)
Focuses on decision making for system design, as it arises in manufacturing systems and supply chains. Students exposed to frameworks and models for structuring key issues and tradeoffs. Presents and discusses new opportunities, issues and concepts introduced by the internet and e-commerce. Introduces various models, methods and software tools for logistics network design, capacity planning and flexibility, make-buy and integration with product development. Industry applications and cases illustrate concepts and challenges.

EMGT 5143  Quality Systems (3)
Principles and practices of quality control methods. Topics include the Deming’s Total Quality Management for process improvement, Six Sigma, System Thinking and ISO.

EMGT 5153  Engineering Project Management (3)
Introduction to the concepts and overview of project management. Topics covered include planning successful projects, effective leadership, team building, organizing work assignments, scheduling, managing conflict, record keeping, status reporting, communicating and closeout.
EMGT 5163  Operations Analysis I (3)
Application-oriented introduction to systems optimization focusing on modeling and understanding system tradeoffs. Introduces modeling methodologies including linear programming (simplex method and sensitivity analysis) network, integer, and nonlinear programming, modeling tools (sensitivity, duality, and post optimal analysis), the transportation model, applications in production planning and scheduling, supply network optimization, project scheduling, and facility sizing.

EMGT 5173  Operations Analysis II (3)
A continuation of quantitative methods to develop modeling and decision-making skills. Topics include the traveling salesperson problem, deterministic inventory models, Markov processes, decision analysis techniques, goal programming, queuing theory, and simulation of systems using software to simulate and analyze these systems. Analysis of an actual system as a group project, including formal written report and class presentation.

EMGT 5183  Advanced Project Management (3)
This course will provide a study of advanced concepts used in project management and an overview of related project management principles, both in theory and as practice in the “real world” business environment. This course is an excellent review for students desiring to take the Project Management Institute’s (PMI) Project Management Professional (PMP) examination.

EMGT 5213  Leading Professionals (3)
This course provides insights to identifying and understanding personality types and behaviors associated with each type. Topics of study will include the ladder of inference and its role in conflict resolution, dialogue’s role in communications and the role of trustworthiness in developing adaptive skills in order to build support for desired outcomes.

EMGT 5233  Developing Opinion Leaders (3)
This course focuses on developing skills necessary to effect community change. Leadership skills developed will include using metaphors to communicating technical solutions, identification of actual and perceived decision makers and those that influence decision makers, identification of allied groups to support your goals and development of key talking points to insure a clear message. The student will develop an understanding of the importance of influence skills, within an ethical framework, in the change process.

EMGT 5173  Developing Opinion Leaders (3)
This course focuses on developing skills necessary to effect community change. Leadership skills developed will include using metaphors to communicating technical solutions, identification of actual and perceived decision makers and those that influence decision makers, identification of allied groups to support your goals and development of key talking points to insure a clear message. The student will develop an understanding of the importance of influence skills, within an ethical framework, in the change process.

EMGT 5323  Procurement Management (3)
This course develops a holistic approach to business decision-making by integrating mission, vision, and marketing within an engineering organization. Topics covered will include determination of mission and vision external and internal analysis of market segments and assessing a firm’s strategic advantages. The QBS process of marketing to government clients will be covered. The overall objective is to sharpen the students’ abilities to “think strategically” in diagnosing market opportunities and align operations from a strategic advantage.

EMGT 5343  Engineering Economics (3)
The purpose of this course is to understand the effective and efficient management of engineering operations in an organization. This course focuses on critical issues such as product development, process planning and design, demand theory, forecasting, demand analysis, resource allocation and cost analysis, staffing, job design and workforce measurement.
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<th>Course Code</th>
<th>Course Title</th>
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<td>EMGT 5353</td>
<td>Managing Professional Service Firms (3)</td>
<td>This course covers firm strategy and client relationship management, exploring what it takes to become, and remain, a “trusted advisor.” The second module is grounded in the idea that developing competitive advantage in a firm’s ability to attract, hire, nourish and motivate the best talent in the labor market and succeeding and thriving as a professional.</td>
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<td>EMGT 5443</td>
<td>Applied Research-Engineering Management I</td>
<td>In partnership with a local industry professional services firm, or as a special topic, this course will allow the student to apply newly learned skills to address a specific issue. A capstone project will be completed requiring a comprehensive application of skills learned in the program.</td>
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<td>BU 6933</td>
<td>Accounting: Professional Services (3)</td>
<td>This course introduces financial and managerial accounting concepts for professional services organizations and their application in the decision-making process. Specific topics include basic concepts underlying corporate financial statements and the performance evaluation tools necessary for analyzing profitability, cash flows, financial ratios and information needed for internal planning, decision making and control.</td>
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<td>BU 6533</td>
<td>Leadership and Organizational Behavior (3)</td>
<td>This course will examine the challenges associated with leading and managing organizational behavior within complex situations. The course focuses on developing skills for identifying behavioral and organizational problems, creating alternative solutions, making and communicating decisions and winning commitment for your position. We will be looking for nuances of behavior that will lead to a higher level of understanding and hence more effective leadership—nuances of adapting to different management styles, understanding the boss or subordinates, coping with conflict, developing career strategies and meeting other leadership challenges.</td>
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**Engineering Management Core Faculty**

Faculty is supplemented with several excellent adjunct faculty members who are experts in their fields.

**David L. Davidson**, P.E., B.S.C.E., M.S. (Tennessee Technological University), Director, Graduate Studies in Engineering, Raymond B. Jones College of Engineering; Executive in Residence; Assistant Professor of Civil and Environmental Engineering

**Justin A. Myrick Sr.**, B.S. (University of Alabama), M.S.(New York University), Ph.D.(University of Missouri-Columbia), Professor and Dean, Raymond B. Jones College of Engineering