

# DUAL M.S.E. ELECTRICAL ENGINEERING/MASTER OF BUSINESS ADMINISTRATION

The mission of the Dual Degree M.S.E. in Electrical Engineering/ MBA program is to educate working engineers and scientists in the engineering and business disciplines that will make them leaders of complex technical endeavors within their sponsoring organizations.

The dual degree M.S.E./MBA program will confer two degrees upon its graduates: an MBA and an M.S.E. in Electrical Engineering. Pursuing the dual degree program saves the student several courses compared to pursuing the two degrees separately.

The dual degree program is designed to be completed in approximately three years. Typically, electrical-engineering courses are completed first, followed by taking the required courses in the MBA program.

## Learning Outcomes

### For the MSE in Electrical Engineering

Graduates will:

- Possess in-depth expertise for a successful engineering career and/or a successful undertaking of further graduate level studies, including but not limited to:
  - an ability to apply advanced knowledge of mathematics, science, and engineering to identify, formulate and solve complex engineering problems in a specialized area, such as electronic circuit design, telecommunications and networks, or digital and computer engineering
  - an ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet constraints and specifications, which include societal, environmental, and ethical factors as appropriate to the design
  - an ability to develop and conduct appropriate experimentation and testing procedures using advanced analytical/numerical techniques and/or modern engineering tools, and to analyze and draw conclusions from data
  - an ability to conduct graduate level research with adequate research skills including information literacy and self-learning
  - an ability to communicate effectively with a range of audiences through various media
  - an ability to plan and manage engineering projects, including goal establishment, task scheduling, and risk and uncertainty management
- Meet the challenges of the future through continuing professional growth
- Exhibit concern for social and environmental impact of engineering decisions

### For the MBA

- Graduates will possess the knowledge and skills to be able to apply key business concepts in organizational settings.
- Graduates will possess the knowledge and skills to manage in a global economy
- Graduates will possess critical thinking skills and the ability to integrate concepts.

- Graduates will have the ability to communicate effectively.
- Graduates will have the knowledge and skills to function effectively as members, managers, and leaders in the organizations in which they are employed.
- Graduates will be able to incorporate ethical reasoning, social responsibility, and sustainability in making decisions in their organizations.

## Admission Requirements

Both the MBA Program in the College of Business Administration and the Electrical Engineering Program in the Frank R. Seaver College of Science and Engineering must accept students applying to the dual degree program for admission.

Prospective dual degree students should apply first to the MSE in Electrical Engineering degree program. After receiving admission to the MSE in Electrical Engineering degree program and completing 12 semester hours towards the MSE degree, students interested in the MSE/ MBA Dual Degree program should contact Graduate Business Education for admission to the MBA portion of the Dual Degree. Eligibility for the dual degree program is based upon good academic standing (minimum GPA 3.0) in the MSE in Electrical Engineering and approval from their respective Seaver College academic advisor. The preferred start term for the MBA portion of the Dual Degree program is the fall term.

The MSE in Electrical Engineering degree program application is online at: <https://graduatestudies.lmu.edu/apply> (<https://graduatestudies.lmu.edu/apply/>). Applicants must submit:

- Official transcripts from all colleges and universities attended
- Statement of Intent describing the candidate's background, career goals, and interest in the program
- Essay discussing how the two degrees fit into applicant's career development

Additional coursework may be recommended or required as a condition of admission for applicants that have not completed an undergraduate program in electrical or computer engineering.

**Transfer Credit:** Students may transfer six (6) semester hours for courses completed at another accredited college or university. Credits to be transferred must be taken prior to admission. Each transferred course grade must be at least B (3.0), and the course must not have been used to satisfy degree requirements at another college or university.

## Graduation Requirements

### (60 Semester Hours)

Students enrolled in the Dual Degree MSE/MBA Program are jointly advised by their Seaver College academic advisor and the MBA Program Director in the College of Business Administration. It is recommended that incoming students take 12 semester hours of Electrical Engineering courses per fall and spring semester and complete the MSE in year one of the dual-degree program, then begin the MBA curriculum in year two.

Dual degree students will take a total of 24 semester hours of Electrical Engineering graduate-level coursework (i.e., 5000- level or 6000-level courses) and 36 semester hours of MBA courses. 15 semester hours from the Electrical Engineering courses will also count towards the emphasis/concentration requirement for the MBA degree. 6 semester hours of the MBA courses that are taken as part of the MBA coursework will also count toward the MSE in Electrical Engineering. Separately, the

MSE degree requires 30 semester hours and the MBA degree requires 51 semester hours, for a total of 81 semester hours. The Dual Degree program lessens the load by 21 (15+6) semester hours.

## Suggested Curriculum Flowchart for all Dual Degrees with Seaver College of Science & Engineering

During the first semester of attendance, the student should prepare a program of study with an academic advisor. The 24 semester hours of required coursework is allocated as follows:

Code	Title	Semester Hours
<b>Year 1 (Summer, Fall, and Spring)</b>		
Required courses		
EECE 5120	Microwave Engineering and Antennas	4
EECE 5140	Computer Architecture with VHDL	4
EECE 5210	Random Processes	4
EECE 5000 level or EECE 6000 level course		4
Select one of the following options:		8
<i>Option 1</i>		
EECE 6000 level course		
EECE 6901	Graduate Capstone Project I	
EECE 6902	Graduate Capstone Project II	
<i>Option 2</i>		
EECE 6994	Thesis I	
EECE 6995	Thesis II	
EECE 6996	Thesis III	
EECE 6997	Thesis IV	
Master's Thesis Option <sup>1,2</sup>		24
<b>Subtotal</b>		<b>24</b>
<b>Year 2 <sup>3</sup></b>		
<i>Fall Semester</i>		
MBAW 6400	MBA Orientation	0
MBAA 6020	Financial and Managerial Accounting	3
MBAA 6030	Global Economic Structures and Systems	1.5
MBAA 6040	Managing Markets and Customer Relationships	3
MBAA 6050	Managing Operations	1.5
MBAA 6090	Managing Information Systems	3
<i>Spring Semester</i>		
MBAA 6010	Managing People and Organizations	3
MBAA 6060	Strategic Management	3
MBAA 6070	Managing Financial Resources	3
MBAA 6080	Data, Models, and Decisions	3
MBAW 6402	The Elements of Becoming A Strategic Leader	0
<i>Summer Session</i>		
Business & Society Core		3
MBA Elective		3
<i>Spring Semester</i>		
MBAA 6100	Managing International Business	3
MBAW 6307	Management Leadership Workshop: Planning Your Future	0
<i>Summer Session</i>		

MBAI 691	Comparative Management Systems (CMS)	3
<b>Subtotal</b>		<b>36</b>
<b>Total Semester Hours</b>		<b>60</b>

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Preparation of a Master's Thesis is optional and can fulfill 8 semester hours of EECE course requirements. The student selecting the thesis option must obtain a thesis advisor before Departmental consent will be considered, and the thesis must conform to the Frank R. Seaver College of Science and Engineering requirements. The thesis and associated work is intended to advance the state of knowledge in the thesis subject, not "rehash" previous work by others nor a serve as a "literature search." To the extent possible, there should be some experimental work involved. The thesis ideally will form the basis for a paper or article, produced by a student, which would be submitted and hopefully published in a peer-reviewed journal or presented at a professional organization's conference. A thesis is completed after being successfully defended to the thesis committee. The thesis committee consists of the student's thesis advisor, a full-time faculty member from the student's department, and a third member from other than the student's department.

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**Total MSE Degree Requirement:** 24 semester hours + 6 semester hours from MBA, satisfying the MSE degree requirement of 30 semester hours

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**Total MBA Degree Requirement:**

36 semester hours + 15 semester hours from MSE in Electrical Engineering, satisfying the MBA degree requirement of 51 semester hours. The overall minimum GPA required for graduation is 3.0. Students who receive a grade of less than "B" in any 500/5000-level course or a grade of less than "C" in any 600/6000-level course will not have the course count toward their degree.

When the course requirements outlined above are completed, the student should submit an application for degree to be awarded both the MBA and the MSE in Electrical Engineering. Students must file separately for each degree and both degrees must be awarded in the same term.