MASTER OF ELECTRICAL ENGINEERING (MEE) DEGREE

Program Learning Outcomes for the MEE Degree

Upon completing the MEE degree, students will be able to:

1. Apply the principles of mathematics and science necessary to solve advanced electrical engineering problems.
2. Practice at an advanced level in at least one of the major sub-fields of electrical engineering.

Requirements for the MEE Degree

The MEE degree is a non-thesis master’s degree. For general university requirements, please see Non-Thesis Master’s Degrees (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). Students pursuing the MEE degree must complete:

- A minimum of 10 courses (30 credit hours) at the 500-level or higher to satisfy degree requirements.
- A minimum of 6 courses (18 credit hours) from an Area of Specialization (as a major area of focus).
- A minimum of 2 courses (6 credit hours) from another Area of Specialization (as a minor area).
- A minimum of 8 of the 10 courses in the major and minor Areas of Specialization taught by ECE faculty. Only exceptions approved by the Chair of the MEE Committee will be permitted.
- A minimum overall GPA of 3.0 in required coursework with a minimum grade of C (2.0 grade points) in each course.
- A maximum of 1 course (3 credit hours) of graduate-level coursework from transfer credit. For additional departmental guidelines regarding transfer credit, see the Policies tab.
- ELEC 698 each semester of full-time enrollment.

Students are admitted to the MEE degree program in the fall semester. MEE students are to consult with an academic advisor on the MEE Committee each semester in order to identify and clearly document their individual curricular requirements or degree plan to be followed. An MEE degree planning form and current requirements may be found on the ECE website (http://www.ece.rice.edu).

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<td>30</td>
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Degree Requirements

Select 1 Area of Specialization from the following (see below for Areas of Specialization):

- Computer Engineering
- Data Science
- Neuroengineering
- Photonics, Electronics, and Nano-Devices

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Area of Specialization: Computer Engineering

Select 6 from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ELEC 513 / COMP 513</td>
<td>COMPLEXITY IN MODERN SYSTEMS</td>
<td>18</td>
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<tr>
<td>ELEC 516</td>
<td>ANALOG INTEGRATED CIRCuits</td>
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<tr>
<td>ELEC 522</td>
<td>ADVANCED VLSI DESIGN</td>
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<tr>
<td>ELEC 524 / COMP 524</td>
<td>MOBILE AND WIRELESS NETWORKING</td>
<td></td>
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<tr>
<td>ELEC 526 / COMP 526</td>
<td>HIGH PERFORMANCE COMPUTER ARCHITECTURE</td>
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<tr>
<td>ELEC 527</td>
<td>VLSI SYSTEMS DESIGN</td>
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<tr>
<td>ELEC 553</td>
<td>MOBILE AND EMBEDDED SYSTEM DESIGN AND APPLICATION</td>
<td></td>
</tr>
<tr>
<td>ELEC 554 / COMP 554</td>
<td>COMPUTER SYSTEMS ARCHITECTURE</td>
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</tbody>
</table>

Total Credit Hours

Area of Specialization: Data Science

Select 6 from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ELEC 502 / COMP 502 / STAT 502</td>
<td>NEURAL MACHINE LEARNING I</td>
<td>18</td>
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Footnotes and Additional Information

1 A minimum of 8 of the 10 courses in the major and minor Areas of Specialization taught by ECE faculty. Only exceptions approved by the Chair of the MEE Committee will be permitted.
2 Electives may be fulfilled through research courses (such as ELEC 590 or ELEC 591, when either are taken for at least 3 credit hours), other ECE electives, or through courses available through affiliated departments in areas such as Communication Training or Engineering Leadership Management.
ELEC 531 STATISTICAL SIGNAL PROCESSING
ELEC 533 / CAAM 583 / STAT 583 INTRODUCTION TO RANDOM PROCESSES AND APPLICATIONS
ELEC 535 INFORMATION THEORY
ELEC 557 / COMP 557 ARTIFICIAL INTELLIGENCE
ELEC 558 DIGITAL SIGNAL PROCESSING
ELEC 575 LEARNING FROM SENSOR DATA
ELEC 576 A PRACTICAL INTRODUCTION TO DEEP MACHINE LEARNING
ELEC 631 ADVANCED TOPICS IN SIGNAL PROCESSING
STAT 648 GRAPHICAL MODELS AND NETWORKS

Total Credit Hours 18

Area of Specialization: Neuroengineering

Code Title Credit Hours

Select 6 from the following: 18
ELEC 502 / COMP 502 / STAT 502 NEURAL MACHINE LEARNING I
ELEC 533 / CAAM 583 / STAT 583 INTRODUCTION TO RANDOM PROCESSES AND APPLICATIONS
ELEC 548 / B IOE 548 MACHINE LEARNING AND SIGNAL PROCESSING FOR NEURO ENGINEERING
ELEC 585 / B IOE 591 FUNDAMENTALS OF MEDICAL IMAGING I
ELEC 588 T HEORETICAL NEUROSCIENCE I: BIOPHYSICAL MODELING OF CELLS AND CIRCUITS
ELEC 589 NEURAL COMPUTATION
ELEC 680 / B IOE 680 NANO-NEUROTECHNOLOGY
NEUR 582 INTRODUCTION TO COMPUTATIONAL NEUROSCIENCE

Total Credit Hours 18

Area of Specialization: Photonics, Electronics, and Nano-Devices

Code Title Credit Hours

Select 6 from the following: 18
ELEC 562 OPTOELECTRONIC DEVICES
ELEC 568 LASER SPECTROSCOPY
ELEC 569 / PHYS 569 ULTRAFAST OPTICAL PHENOMENA
ELEC 571 IMAGING AT THE NANOSCALE
ELEC 603 TOPICS IN NANOPHOTONICS
ELEC 605 / PHYS 605 COMPUTATIONAL ELECTRODYNAMICS AND NANOPHOTONICS
ELEC 661 / CHEM 661 / MSNE 661 NANOPHOTONICS, SPECTROSCOPY, AND MATERIALS FOR SUSTAINABILITY

Total Credit Hours 18

Area of Specialization: Systems

Code Title Credit Hours

Select 6 from the following: 18
ELEC 531 STATISTICAL SIGNAL PROCESSING
ELEC 533 / CAAM 583 / STAT 583 INTRODUCTION TO RANDOM PROCESSES AND APPLICATIONS
ELEC 535 INFORMATION THEORY
ELEC 537 COMMUNICATION NETWORKS
ELEC 539 INTRODUCTION TO COMMUNICATION NETWORKS
ELEC 542 THE APPLICATION OF VECTOR SPACE METHODS AND OTHER ADVANCED TECHNIQUES TO DSP
ELEC 546 INTRODUCTION TO COMPUTER VISION
ELEC 547 COMPUTER VISION
ELEC 549 COMPUTATIONAL PHOTOGRAPHY
ELEC 551 DIGITAL COMMUNICATION
ELEC 558 DIGITAL SIGNAL PROCESSING

Total Credit Hours 18

Policies for the MEE Degree

Department of Electrical and Computer Engineering Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Electrical and Computer Engineering publishes a graduate program handbook, which can be found here: http://gradhandbooks.rice.edu/2017_18/
Electrical_Computer_Engineering_Graduate_Handbook.pdf

Transfer Credit

For Rice University’s policy regarding transfer credit, see Transfer Credit (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program’s advisor when considering transfer credit possibilities.

Departmental Transfer Credit Guidelines

Students pursuing the MEE degree in the field of Electrical and Computer Engineering should be aware of the following departmental transfer credit guidelines:

- No more than 2 courses (6 credit hours) of transfer credit from U.S. or international universities of similar standing as Rice may apply towards the degree.
- Requests for transfer credit will be considered by the program director (and/or the program’s official transfer credit advisor) on an individual case-by-case basis.
For additional information, please see the Electrical and Computer Engineering website: [https://www.ece.rice.edu/](https://www.ece.rice.edu/).

**Opportunities for the MEE Degree**

For additional information, please see the Electrical and Computer Engineering website: [https://www.ece.rice.edu/](https://www.ece.rice.edu/).