The Master of Network Engineering (M.N.E.) is a course-only degree program that prepares students for professional practice in network engineering and information technologies. The M.N.E. is a focused professional master’s degree requiring a minimum of 30 credit hours of adviser approved coursework. The program offered by the Department of Electrical and Computer Engineering (ECE) can be completed in one year of full-time study.

The admission requirements for this degree follow the existing admission requirements for master’s degree in the ECE department. A person holding a B.S.E.E. or a B.S.C.P.E. degree has the necessary background to undertake the M.N.E. program. A student without adequate background is required to demonstrate proficiency in the following courses:

- ECE 211 Circuit Analysis I: 3 credits
- ECE 213 Circuit Analysis II: 4 credits
- ECE 308 Signals and Systems: 4 credits
- MATH 251 Multivariate and Vector Calculus: 4 credits
- MATH 252 Introduction to Differential Equations: 4 credits
- MATH 474 Probability and Statistics: 3 credits

A student may demonstrate proficiency by successfully completing the courses or by demonstrating satisfactory performance in one or more special examinations administered by the department.

The M.N.E. program of study must include a minimum of 24 credit hours of ECE coursework, 12 credit hours of required core courses, 12 credit hours of M.N.E. elective courses, and six credit hours of adviser-approved elective courses. At least 18 credit hours of the courses must be at the 500-level. A maximum of six credit hours may be taken from ECE 700-level short courses.

### Curriculum

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tr>
<td>Minimum Credits Required</td>
<td>30</td>
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<tr>
<td>Maximum 400-Level Credit</td>
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<tr>
<td>Minimum 500-Level Credit</td>
<td>18</td>
</tr>
<tr>
<td>Maximum Short Course ECE 700-Level Credit</td>
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<td>Maximum Transfer Credit</td>
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**Required Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ECE 503</td>
<td>5G Wireless Network</td>
<td>3</td>
</tr>
<tr>
<td>ECE 511</td>
<td>Analysis Random Signals</td>
<td>3</td>
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<tr>
<td>ECE 513</td>
<td>Comm Engr Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ECE 541</td>
<td>Comm Netwrks Performance Analy</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 543</td>
<td>Computer Network Security</td>
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Select a minimum of one course from the following:

- ECE 407 | Intro Comp Ntwks with Lab              | 3-4          |
- or ECE 408 | Intro to Computer Ntwks             |            |
- ECE 545 | Modern Internet Tech                  | 3            |

**Network Engineering Elective Courses**

Select a minimum of 12 credit hours of 400- and 500-level courses below, approved by the faculty adviser:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ECE 403</td>
<td>Digital &amp; Data Comm Systems</td>
<td>3-4</td>
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<tr>
<td>or ECE 405</td>
<td>Digital &amp; Data Comm Syst w/Lab</td>
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<tr>
<td>ECE 406</td>
<td>Wireless Communications System</td>
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</tr>
<tr>
<td>or ECE 504</td>
<td>Wireless Comm Systm Design</td>
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<tr>
<td>ECE 437</td>
<td>Digital Signal Processing I</td>
<td>3-4</td>
</tr>
<tr>
<td>or ECE 436</td>
<td>Digital Signal Pcsgi w/Lab</td>
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<tr>
<td>ECE 442</td>
<td>Internet of Things/Cyber Phys</td>
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<tr>
<td>or ECE 510</td>
<td>IoT and Cyber Physical Systems</td>
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<td>ECE 443</td>
<td>Intro Computer Cyber Security</td>
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<td>Course Selection</td>
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<td><strong>Computer Cyber Security</strong></td>
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<tr>
<td>ECE 447</td>
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<td>Application Software Design</td>
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<tr>
<td>ECE 449</td>
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<tr>
<td>or ECE 590</td>
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<tr>
<td>Object-Oriented Program &amp; ML</td>
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<td>ECE 485</td>
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<tr>
<td>or ECE 585</td>
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<tr>
<td>Computer Organization &amp; Design</td>
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<tr>
<td>ECE 508</td>
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<td>ECE 514</td>
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<tr>
<td>Digital Commctn Principles</td>
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<td>ECE 515</td>
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<td>ECE 516</td>
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<tr>
<td>Coding Distributed Storage Sys</td>
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<td>ECE 517</td>
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<td>Wireless Ntwrk Protocols/Stand</td>
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<td>ECE 519</td>
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<td>Coding Reliable Communications</td>
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<td>ECE 520</td>
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<td>Info Theory and Applications</td>
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<td>Dsgn Optmzt Compt Ntwrks</td>
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<td>ECE 544</td>
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<td>VLSI Archs Sgnl Prcs Commnctns</td>
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**Electives**

Select three credit hours

(3)