BS/MS Program
Electrical and Computer Engineering
Why BS/MS?

- Double-count up to 9 credits
- Complete both degrees in as little as 5 years
- GRE waiver
- Earning potential
- Financial support
- Resume builder
Financial support

- Corporate-sponsored scholarships (Leidos, Northrop Grumman)
- ECE MS Scholarship
- Graduate teaching assistantship
- Graduate research assistantship
Requirements

• 3.6 GPA requirement
• 9 credits of 300-level ENEE or CMSC coursework completed
• Plan of study
• Faculty mentor
**Timeline**

**Second Semester Junior Year: Determine eligibility for BS/MS program**
- Meet with undergraduate advisor
- Meet with faculty mentor
- Meet with graduate student advisor

**Semester before taking grad classes: Apply for the BS/MS program**
- Submit BS/MS Plan of Study
- Submit BS/MS Mentor Form
- GPA: 3.6, 9 credits
- 300-level coursework

**By December 15 before BS Graduation: Submit a Graduate School application**
- December 15 for fall admission
- March-April admissions decision
- Spring admission possible
Potential BS/MS Candidates

• Excellent academic record
• Ability to handle heavy course loads
• AP credits
• Early planning
• Have a sense of research interests
• Interest in graduate school
• Grad courses fit into student plan
Applying Graduate Level Courses

- ENEE graduate level courses can satisfy major technical requirements
  - Electrical Engineering
    - Category A Technical Elective
    - General Technical Elective
  - Computer Engineering
    - Category C Technical Elective
    - ENEE646 can replace ENEE446 (by faculty approval)
    - Category F or additional Tech Electives
  - ECE Honors: Grad course can replace H-level courses
Meeting with Undergrad Advisor

• ECE students can meet with their assigned undergrad advisor to discuss the program

• Freshmen/Sophomores
  – Discuss BS/MS program in your next registration meeting or during off peak times

• Juniors
  – Meet with advisor in the semester when you are completing your 9 credits of 300-level ENEE/CMSC courses

• BS/MS advising meeting can be held after registration period ends
Faculty Mentor Meeting

• Faculty mentor will provide guidance on selecting 9 credits of BS/MS grad courses
• In selecting a mentor, a good place to start is the ECE Research website: ece.umd.edu/research
• In preparation for your meeting:
  – Bring a copy of your transcripts
  – Review course descriptions
  – Be familiar with research interests
## Research Areas

<table>
<thead>
<tr>
<th>Research Area</th>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td><strong>CSP</strong> (Communications &amp; Signal Processing)</td>
<td>ENEE222, ENEE322, ENEE324</td>
</tr>
<tr>
<td><strong>CONT</strong> (Controls)</td>
<td>ENEE222, ENEE322, ENEE324</td>
</tr>
<tr>
<td><strong>COMP</strong> (Computer Engineering)</td>
<td>ENEE150, ENEE244, ENEE245, ENEE350</td>
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<tr>
<td><strong>ELEC</strong> (Electrophysics)</td>
<td>PHYS, ENEE205, ENEE380, ENEE381</td>
</tr>
<tr>
<td><strong>MICR</strong> (Microelectronics)</td>
<td>ENEE205, ENEE303, ENEE307, ENEE313</td>
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MS Core Courses

Communications & Signal Processing (CSP)

- ENEE 620
  Random Processing in Communication & Control
- ENEE 621
  Estimation & Detective Theory
- ENEE 627
  Information Theory
- ENEE 630
  Advanced Digital Signal Processing

Computer Engineering (COMP)

- ENEE 640
  VLSI Architecture
- ENEE 641
  Mathematical Foundations for Computer Systems
- ENEE 645
  Compilers and Optimization
- ENEE 646
  Digital Computer Design
## MS Core Courses

### Controls (CONT)

- **ENEE 620**: Random Processing in Communication & Control
- **ENEE 660**: Systems Theory
- **ENEE 661**: Nonlinear Control Systems
- **ENEE 662**: Convex Optimization
- **ENEE 664**: Optimal Control

### Microelectronics (MICR)

- **ENEE 600**: Solid State Electronics
- **ENEE 601**: Semiconductor Devices and Technology
- **ENEE 611**: Integrated Circuit Design and Analysis
- **ENEE 612**: Advanced Power Electronics

### Electrophysics (ELEC)

- **ENEE 680**: Electromagnetic Theory I
- **ENEE 681**: Electromagnetic Theory II
- **ENEE 690**: Quantum & Wave Phenomena with Electrical Application
- **ENEE 692**: Introduction to Photonics
## Graduate School Application

<table>
<thead>
<tr>
<th>Admission Requirement</th>
<th>Standard ECE Graduate Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transcript</td>
<td>Required, GPA $\geq 3.5$</td>
</tr>
<tr>
<td>General GRE</td>
<td>Currently not required</td>
</tr>
<tr>
<td>Letters of Recommendation</td>
<td>3 (two from ECE faculty recommended)</td>
</tr>
<tr>
<td>Statement of Purpose</td>
<td>Required</td>
</tr>
<tr>
<td>Resume or CV</td>
<td>Required</td>
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</tbody>
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Questions?

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