BS/MS Program
Electrical and Computer Engineering

Why BS/MS Program?

- Double-count up to 9 credits (600-level or above)
- Experience graduate courses before committing to a graduate degree
- Complete both degrees (BS/MS) in less time (5 years)
- Build relationships with faculty early on
- Pay undergraduate tuition for graduate courses (while in BS/MS program)

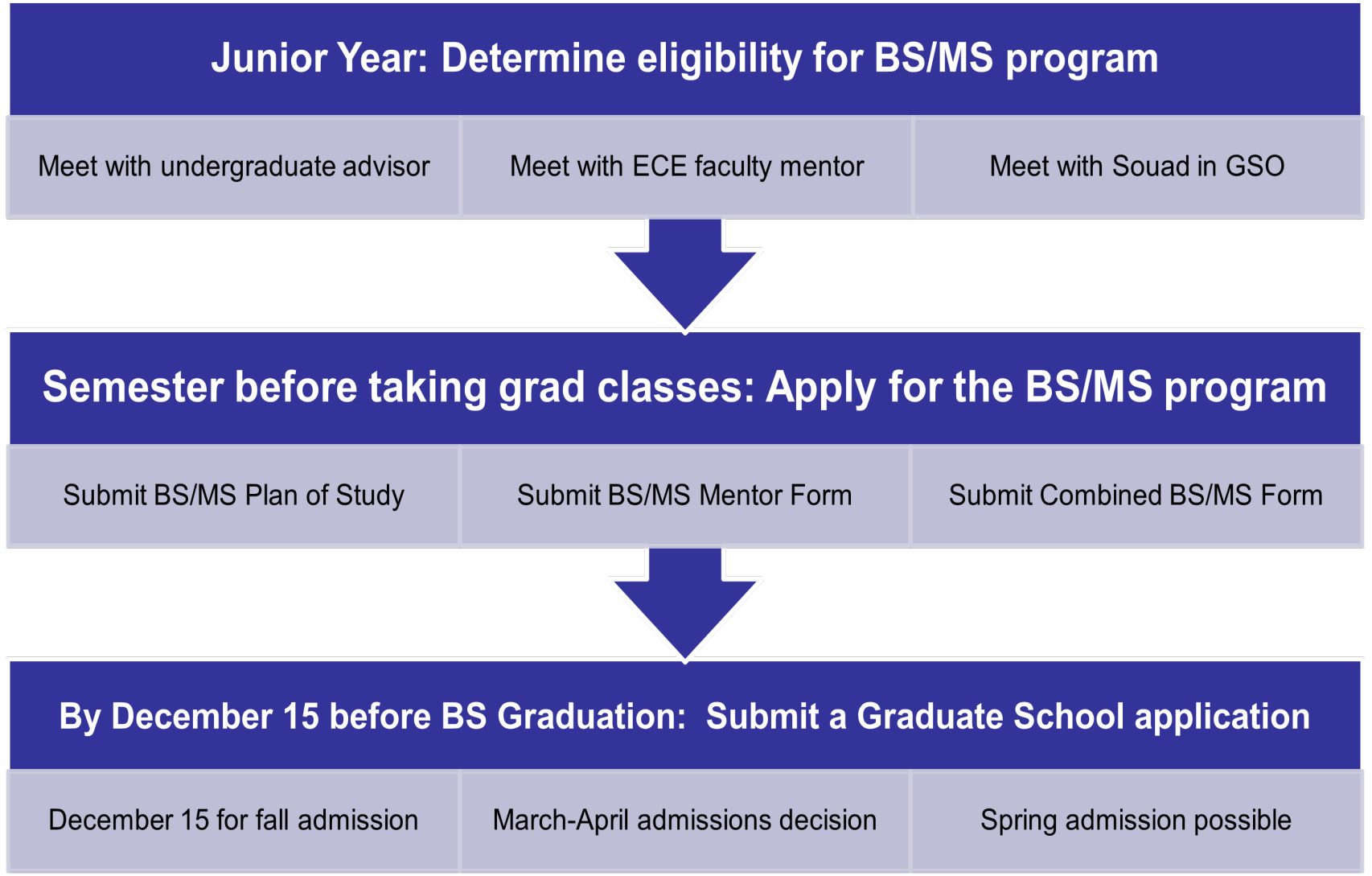
Requirements/How to Apply

- 3.6 GPA requirement
- 9 credits of 300-level ENEE or CMSC coursework completed
- Graduate courses satisfy major technical requirements (speak with your undergraduate advisor)
- Complete BS/MS plan of study (include remaining undergraduate coursework)
- Find an ECE faculty mentor & complete Recommendation Form
- Submit materials to Souad Nejjar in graduate studies

Financial Support

- Corporate-sponsored scholarships (Leidos, Northrop Grumman)
- Graduate teaching assistantship
- Graduate research assistantship

Timeline


Junior Year: Determine eligibility for BS/MS program
Meet with undergraduate advisor
Meet with ECE faculty mentor
Meet with Souad in GSO
Semester before taking grad classes: Apply for the BS/MS program
Submit BS/MS Plan of Study
Submit BS/MS Mentor Form
Submit Combined BS/MS Form
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


Communications & Signal Processing	ENEE222, ENEE322, ENEE323, ENEE324
Controls	ENEE222, ENEE322, ENEE323, ENEE324
Computer Engineering	ENEE150, ENEE244, ENEE245, ENEE350
Electrophysics	PHYS, ENEE205, ENEE382
Microelectronics	ENEE205, ENEE303, ENEE304, ENEE305, ENEE307, ENEE313
Power Systems	ENEE205, ENEE303, ENEE304, ENEE222, ENEE322, ENEE323

MS Research Areas

Communications, Networking & Info Theory; Signal Processing & Machine Learning	**CSP** (Communications & Signal Processing)
Controls, Robotics, Autonomy & Learning	**CONT** (Controls)
Computer Architecture; Cybersecurity & Cyberprivacy; Embedded & Cyber Physical Systems	**COMP** (Computer Engineering)
Optics & Photonics; Applied Physics & Electromagnetics; Quantum Technology	**ELEC** (Electrophysics)
Power Electronics, Solid State Circuits & Biolectronics; Electronic Materials & Devices	**MICR** (Microelectronics)

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

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

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

Graduate School Application

Admission Requirement	Standard ECE Graduate Admission
Transcript	Required, GPA ≥ 3.5
General GRE	Optional for ECE
Letters of Recommendation	3 (two from ECE faculty recommended)
Statement of Purpose	Required
Resume or CV	Required

Questions?

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