# Boston University College of Engineering
## Department of Electrical and Computer Engineering
## MEng Electrical Engineering Program Planning Sheet

**BOSTON UNIVERSITY**

Student Name: _____ Email: _____
Academic Advisor: _____ BU ID: _____
Advisor Signature: _____ Date: _____

Master of Engineering in Electrical Engineering (MEng EE) students must take 32 credits (500-level or above). The specific coursework requirements for the MEng EE degree are as follows: At least 24 credits must be structured coursework in ECE; 16 credits (4 courses) must be taken in one of the ECE concentration areas listed below. In addition, students also need to satisfy the advanced technical course requirement by taking at least two 700-level ECE courses. Students may take 4 credits of 900-level coursework (project, research, or directed study); 900-level credit may count towards the concentration requirement but *not* as an advanced technical elective. The remainder of the 32-credit requirement may be met through graduate technical electives, which include all courses at the 500-level or above in ENG, as well as courses in the following CAS departments: astronomy, biology, chemistry, cognitive and neural systems, computer science, mathematics, and physics (CAS courses require advisor approval and an approved petition). **Note: Students are encouraged to explore graduate technical electives that embrace technical project management, entrepreneurship, or leadership development; some of these courses include: ENG EC 518 Project Management for Software-Intensive Systems, ENG EK 730 Technology Commercialization, ENG ME 502 Intellectual Assets: Creation, Protection, and Commercialization, ENG ME 525 Technology Ventures, GSM SI 851 Entrepreneurship, GSM SI 852 Starting New Ventures, GSM SPI 853 Entrepreneurial Management.**

MEng EE students must maintain a cumulative GPA of 3.00 to remain in good academic standing. All graduate courses taken are calculated into the student's GPA. Grades of "C–" or lower are not acceptable for the MEng EE degree. Up to 8 credits of coursework may be transferred from other approved graduate schools.

## Program Form

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|---|---|---|---|
| **Concentration Area Courses** (Select four courses from one of the concentration areas below) | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| **Advanced Technical Electives (700-level)** | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| **Graduate Technical Electives** | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |
| | Course: _____ | Sem/Year: _____ | Grade: _____ |

## Concentrations

**Signal Processing and Communications**
ENG EC 505 Stochastic Processes
ENG EC 515 Digital Communication
ENG EC 516 Digital Signal Processing
ENG EC 517 Introduction to Information Theory
ENG EC 520 Digital Image Processing and

Communication
ENG EC 563 Fiber Optic Communication Systems
ENG EC 702 Recursive Estim. and Optimal Filtering
ENG EC 715 Wireless Communications
ENG EC 716 Advanced Digital Signal Processing
ENG EC 717 Image Reconstruction and Restoration
ENG EC 719 Statistical Pattern Recognition
ENG EC 720 Digital Video Processing

**Systems and Control**
ENG EC 501 State Space
ENG EC 505 Stochastic Processes

ENG EC 524 Optimization Theory and Methods
ENG EC 701 Optimal and Robust Control
ENG EC 702 Recursive Estimation and Optimal Filtering
ENG EC 710 Dyn. Programming and Stochastic Control
ENG EC 724 Advanced Optimization and Methods
ENG SE/ME 740 Vision, Robotics, and Planning
ENG SE/ME755 Communication Networks Control
ENG SE/ME 762 Non-Linear Control of Mech. Systems

**Networking and Communications**
ENG EC 505 Stochastic Processes
ENG EC 515 Digital Communication
ENG EC 517 Introduction to Information Theory
ENG EC 541 Computer Communication Networks
ENG EC 544 Networking the Physical World
ENG EC 561 Error-Control Codes
ENG EC 700 Game Theory for Communications
ENG EC 715 Wireless Communications
ENG EC 724 Advanced Optimization and Methods

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ENG EC 725 Queuing Systems
ENG EC 727 Advanced Coding
ENG EC 733 Discrete Event Simulation
ENG EC 744 Mobile Computing and Networking
ENG EC 749 Interconnection Networks
ENG SE 741 Randomized Network Algorithms

Solid-State Circuits, Devices, and Materials
ENG EC 571 VLSI Principles and Applications
ENG EC 574 Solid State Devices
ENG EC 575 Semiconductor Devices
ENG EC 578 Fabrication Tech. for Integrated Circuits
ENG EC 579 Microelectronic Device Manufacturing
ENG EC 580 Modern Active Circuit Design
ENG EC 582 RF/Analog IC Design Fundamentals
ENG EC 770 Guided-Wave Optoelectronics
ENG EC 771 Phys. of Compound Semicond. Devices
ENG EC 772 VLSI Graduate Design Project
ENG EC 774 Semicond. Quant/ Struct./Phot. Devices
ENG EC 775 VLSI Devices and Device Models
ENG EC 777 Nano-Optics
ENG EC 782 RF/Analog IC Design

Photonics
ENG EC 560 Introduction to Photonics
ENG EC 563 Fiber Optic Communication Systems
ENG EC 568 Optical Fiber Sensors
ENG EC 569 Introduction to Subsurface Imaging
ENG EC 570 Lasers
ENG EC 574 Semiconductor Materials
ENG EC 575 Semiconductor Devices
ENG EC 577 Electrical Properties of Materials
ENG EC 591 Photonics Laboratory I
ENG EC 760 Advanced Topics in Photonics
ENG EC 762 Quantum Optics
ENG EC 763 Nonlinear and Ultrafast Optics
ENG EC 764 Optical Measurement
ENG EC 765 Biomedical Optics and Biophotonics
ENG EC 770 Guided-Wave Optoelectronics
ENG EC 771 Comp Semi Devices
ENG EC 774 Quantum Structures and Devices
ENG EC 777 Nano-Optics
ENG EK 720 Biophot. System Design and Prototyping

Radio Science
ENG EC 505 Stochastic Processes
ENG EC 516 Digital Signal Processing
ENG EC 560 Introduction to Photonics
ENG EC 566 The Atmosphere and Space Environment
ENG EC 702 Recursive Estim. and Optimal Filtering
ENG EC 707 Radar Remote Sensing
ENG EC 716 Advanced Digital Signal Processing
ENG EC 717 Image Reconstruction and Restoration
ENG EC 731 Applied Plasma Physics
AS 727 Cosmic Plasmas
AS 783 Ionospheres

Energy Technologies
ENG EC 543 Sustainable Power Systems
ENG EC 573 Solar Energy Systems
ENG EC 574 Semiconductor Materials
ENG EC 575 Semiconductor Devices
ENG EK 546 Assess. of Sustainable Energy Tech.
ENG ME 545 Electrochemistry of Fuel Cells and Batteries

Bioelectrical (2 EC courses *and* 2 BE courses)
ENG EC 505 Stochastic Processes
ENG EC 516 Digital Signal Processing
ENG EC 520 Digital Image Process. and Communication
ENG EC 571 VLSI Principles and Applications
ENG EC 580 Modern Active Circuit Design
ENG EC 582 RF/Analog IC Design Fundamentals
ENG EC 716 Advanced Digital Signal Pressing
ENG EC 717 Image Reconstruction and Restoration
ENG EC 720 Digital Video Processing
ENG EC 740 Parameter Estim. and System Identification
ENG EC 765 Biomedical Optics and Biophotonics
ENG EC 772 VLSI Graduate Design Project
ENG EC 782 RF/Analog IC Design
ENG EK 720 Biophotonic System Design and Prototyping
ENG BE 511 Biomedical Instrumentation
ENG BE 512 Biomedical Instrument Design
ENG BE 515 Introduction to Medical Imaging
ENG BE 516 Applied Medical Imaging
ENG BE 540 Bioelectric Signals: Anal. and Interpretation
ENG BE 747 Adv. Signals and Sys. Analysis for BME