ECE MS Program Orientation

01/2021
Welcome!

Prof. Clem Karl - Chair of the ECE Department

- Oversees the Undergraduate, Graduate, and PhD ECE Programs
Introduction

Chen Yang  
ECE Associate Chair for Master’s Programs

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Faculty with National Recognitions

- **54 Faculty Members**
  - 3 National Academy Members
  - 36 Society Fellows
  - 26 NSF/Doe/DoD Young Investigators
  - 3 Former IEEE Society Presidents

- **Information and Data Sciences**
  - Machine Learning, Big Data and Analytics
  - Computational Imaging and Inverse Problems
  - Decision and Estimation Theory
  - Signal, Image and Video Processing
  - Medical Informatics
  - Sensor Networks
  - Communication and Information Theory
  - Network Security

- **Computer Engineering**
  - Computer Architecture and Design
  - Digital and Analog VLSI
  - Embedded and Reconfigurable Computing
  - Mobile Computing
  - Networking for Communication
  - Computer and Network Security
  - Software/Design Automation
  - Multimedia Systems
  - Cybersecurity

- **Electro-Physics**
  - Quantum Optics and Communications
  - Fiber, Laser and Nonlinear Optics
  - Solid-state Circuits, Devices
  - Nano- and Bio-Photonics
  - Space Physics

BU Department of Electrical & Computer Engineering
Large and Diversified Student Body

Each class

- ~1300 Applications from ~300 Universities and ~30 countries
- 65 Matriculants
- 50 Universities
- 27 Majors

Source: ENG GPO annual report

BU Department of Electrical & Computer Engineering
Degree Requirement and Personalized Curriculum

32 graduate-level credits or more (or 8 courses)
No grade lower than C can be counted for degree.
Degree Average GPA >= 3.0.

Software requirement: (1 course)
• EC602 – Design by Software in ECE

Practicum requirement: (1 course)
• EC601 – Product Design in ECE
• OR with placement:
  • MS/MEng project
  • MS thesis

ECE graduate electives (4 courses)
• Graduate ECE courses
• CAS CS courses generally count as well

General electives (2 courses)
• Graduate college of engineering (ENG) courses
• ECE-related CAS technical courses (CS, math, physics, …)
• MS project, thesis, and independent study
Multiple Elective Tracks

- Computational and Cyberphysical Systems
- Computer Communications and Networks
- Cybersecurity
- Data Science and Intelligent Systems
- Electromagnetics, Photonics, and Nanotechnology
- Bio-ECE and Digital Health

- Mobile and Cloud Computing
- Sensing and Information
- Signal Processing and Communications
- Software
- Solid-State Circuits, Devices, and Materials
- Systems and Control
- Hardware
Spring 2021 Courses Schedule

Required:
EC 602 Design by Software

Electives: (examples)
• EC 503 Learn from Data
• EC 504 Adv Data Structure
• EC 544 Network Physics world
• EC 500 Optimization for ML
• EC 500 Building Software
• EC 520 Digital Imaging Proc
• EC 535 Intro to Embedded System
• EC 527 High Performance Program

Department of Electrical & Computer Engineering
MS Academic Conduct

BU Academic Conduct Code: http://www.bu.edu/academics/policies/academic-conduct-code

Violations: You are responsible to read the Code and know what are violations.
• Exams: Cheating, Unauthorized Communication, Theft
• Homework/papers:
  • Violating collaboration policy
  • Plagiarism
  • Misrepresentation/falsification of data

Process:
• First offense, undisputed:
  • Faculty member may request authorization for specific penalty.
• Second offense or disputed:
  • Academic Misconduct Committee

Potential penalties:
• Reprimand, Grade Reduction, Failure, Probation, Suspension, Expulsion

Department of Electrical & Computer Engineering
Research Opportunity through MS project and Thesis

**MS Project Course**
- *Optional*
- Advised by a faculty advisor.
- Formulating an idea through a 3-5 page proposal:
- Conduct over one semester **only** (4 credit)
- End-of-Semester MS Project presentation.

**MS Thesis Course**
- *Optional*
- Advised by a faculty advisor and committee with 3 ECE faculty
- Formulating an idea through a 3-5 page proposal:
- Conduct at least one semester (4 credit)
- Defend in front of your thesis committee
Internships

• Required for the MS with Engineering Practice:
  • First get an internship offer **before** applying for “with practice”
• NOT required for the Master in Science (MS)

• **DOES NOT** satisfy the practicum requirement.

• You must first complete **two academic semesters** before you can enroll in an internship.
A Structured Advising System

1. MS Ambassadors (available in Fall semesters for first year students)
2. MS Academic Program Manager
3. Faculty Academic Advisor
4. Associate Chair of MS programs
2. MS Academic Program Manager

Hannah Zyung (ecems@bu.edu)

Can assist with:
- Program questions
- Registration changes and questions
- MS Project/MS Thesis registration
- Internship registration
3. Faculty Advisors

- You need to know who your advisor is.
- You can view your advisor on the Studentlink.

When to consult your Advisor

- Questions not answered by
  - Academic Program Manager
- Broader, strategic questions of program
- Technical academic questions
4. Associate Chair for Masters Programs

Chen Yang

Consult for:

- Department-wide issues
- Problems not resolved by Advising Resources 1-3
# Suggestions for Academic and Professional Success

## Active engagement

- Attend classes
- Actively participate class discussion
- Timely completing of homework, project assignment
- Seek help from instructors (before, after lectures, office hour, scheduled appt with instructors)

## Work toward your career goal

- Identify your interest and your career goal early
- Understand what is needed to be competitive
- Seek support and help
- Take actions

## Build a community

- Make friends
- Work in study groups
- Discuss with peers
- Support others
Assignment Today

• Read MS handbook
• Read MS planning sheet and start to fill it (planning!)
• Read BU academic conduct code
• Find out who your faculty advisor is
Questions?