# Computer Engineering – 2017

## Undergraduate Program Planning Sheet

### Freshman 1
- **CAS MA 123** Calculus I (4)

### Freshman 2
- **CAS MA 124** Calculus II (4)

### Sophomore 1
- **CAS MA 225** Multivariate Calculus (4)

### Sophomore 2
- **CAS MA 226** Differential Equations (4)

### Junior 1
- **ENG EC 381** Probability Theory in ECE (4)

### Junior 2
- **EE Breadth Elective** Any ECE course 400 level or above not a CE Elective (4)

### Senior 1
- **ENG EC 463** Senior Design Project I (4) [Fall Only]

### Senior 2
- **ENG EC 464** Senior Design Project II (4) [Spring Only]

### Extra Courses

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* Students who plan to study abroad in sophomore 2 should take EK 301 in sophomore 1

**General Education Requirements**

- **Checklist**
  - 1. CAS WR 100
  - 2. CAS WR 150
  - 3. 1 Course in Social Science
  - 4. 1 Course in Humanities
  - 5. 1 Course SS or HUM
  - 6. 1 Course General Education Elective
  - 7. Total of at least 24 credits

**Graduation Requirement**: 132 credits

**ENG Credit Requirement**: 48 credits/Upper Division Program courses completed at Boston University
Students majoring in Computer Engineering are required to complete a minimum of 132 credits as detailed on the Program Planning Sheet on the other side of this form.

**General Education Courses**: For a list of specific courses that satisfy the Social Science, Humanities, and the General Education Elective, please go to the College of Engineering Undergraduate Requirements website at: [http://www.bu.edu/eng/current-students/ugrad/requirements/](http://www.bu.edu/eng/current-students/ugrad/requirements/).

**TRACK ELECTIVE** Computer Engineering majors complete 1 Track Elective from the following list:

- ENG EC 401: Signals and Systems
- ENG EC 410: Introduction to Electronics
- ENG EC 440: Introduction to Operating Systems

**COMPUTER ENGINEERING ELECTIVE** Computer Engineering majors complete 2 CE Elective courses from the following list:

- ENG EC 440: Introduction to Operating Systems
- ENG EC 441: Introduction to Computer Networking
- ENG EC 447: Software Design
- ENG EC 504: Advanced Data Structures
- ENG EC 512: Enterprise Client-Server Softwr Sys Des
- ENG EC 513: Computer Architecture

Any ENG EC course 400 level or above that has not been used for any of the other elective requirements for CE majors.

**EE BREADTH ELECTIVE** Computer Engineering majors complete 1 EE Breadth Elective course:

Any ENG EC course 400-level or higher that is not on the above Computer Engineering Elective list, except Directed Studies (ENG EC 451) and Special Topics courses (ENG EC 500 and ENG EC 700).

Directed Studies (ENG EC 451), and Special Topics courses (ENG EC 500 and ENG EC 700) may satisfy the EE Breadth requirement by petition only.

**ECE GENERAL ELECTIVE** Computer Engineering Majors complete 1 ECE General Elective:

Any ENG EC course 400 level or above that has not been used for any of the other elective requirements for CE majors.

**TECHNICAL ELECTIVES** (see Notes below) Computer Engineering majors complete 2 Technical Elective courses:

- ENG BE 209
- Any ENG EC, BE, EK or ME course at the 300-level or above are acceptable as Technical Electives.

**Pre-Approved Courses Outside Engineering that fulfill a Technical Elective**:

- CAS AS 414: Solar and Space Physics
- CAS AS 440: Intro to Artificial Intelligence
- CAS CS 440: Intro to Artificial Intelligence
- CAS CS 480: Introduction to Computer Graphics
- CAS CS 585: Image and Video Computing
- CAS MA 511: Introduction to Analysis I
- CAS MA 521: CyberSecurity
- CAS MA 528: Introduction to Modern Geometry
- CAS MA 531: Computability and Logic
- CAS MA 541: Advanced Digital Design with Verilog & FPGA
- CAS MA 551: Advanced Digital Design with Verilog & FPGA
- ENG EC 451: CyberSecurity
- ENG EC 451: CyberSecurity
- ENG EC 490: Introduction to Embedded Systems
- ENG EC 490: Introduction to Embedded Systems
- ENG EC 527: High Perf Programming with Multicore & GPUs
- ENG EC 527: High Perf Programming with Multicore & GPUs
- ENG EC 541: Computer Communications Networks
- ENG EC 541: Computer Communications Networks
- ENG EC 551: Advanced Digital Design with Verilog & FPGA
- ENG EC 551: Advanced Digital Design with Verilog & FPGA
- ENG EC 571: Digital VLSI Circuit Design
- ENG EC 571: Digital VLSI Circuit Design

**DEGREE ENHANCEMENTS**

**CONCENTRATIONS**

Students may choose to add a Concentration in *Energy Technologies, Nanotechnology* or *Technology Innovation*. Students completing a Minor in Mechanical Engineering may choose to add a concentration in *Aerospace Engineering*. A concentration requires 4 courses which can usually be used to satisfy courses within the major. Hence, a concentration can usually be completed without additional coursework. More information on concentrations and the specific requirements for each can be found at [http://www.bu.edu/eng/academics/programs/concentrations/](http://www.bu.edu/eng/academics/programs/concentrations/).

**MINORS**

Students may choose to add a minor in any one of the other degree programs or divisions (*Materials Science & Engineering* or *Systems Engineering*) within the College of Engineering. A minor consists of 5 courses, 2 of which may also be used to satisfy requirements for the major. Completing a Minor will add a minimum of 12 credits to the total for the degree. More information on minors and the specific requirements for each can at [http://www.bu.edu/eng/academics/programs/minors/](http://www.bu.edu/eng/academics/programs/minors/). Students may also pursue minors in other Colleges at Boston University. For more information, please contact the College of the minor.

**DOUBLE MAJORS**

Students may earn two engineering BS degrees. Double majors require a minimum of 168 credits and students must fulfill the requirements for each of the degree programs. See [http://www.bu.edu/eng/academics/special-programs/](http://www.bu.edu/eng/academics/special-programs/) for more details.

**OTHER WAYS TO ENHANCE YOUR DEGREE**

Students have several additional options available to them including *study abroad, research*, and *co-op/ internship* opportunities. For more information on these programs, please visit the College of Engineering Undergraduate website: [http://www.bu.edu/eng/academics/](http://www.bu.edu/eng/academics/).

**Notes:**

For the following 8 sets of courses, only 1 course can be taken for credit in each set due to the overlap of material:

1. ENG ME 305, ENG BE 420
2. ENG ME 403, ENG ME 404, ENG BE 402, ENG EC 402
3. ENG ME 303, ENG BE 436
4. ENG ME 441, ENG ME 515
5. ENG ME 501, ENG EC 501
6. ENG EC 102, CAS MA 142, CAS MA 242
7. ENG BE 401, ENG EC 401
8. ENG ME 366, ENG EC 381, ENG BE 200, ENG EC 500