**Mechanical Engineering – 2017**

Undergraduate Program Planning Sheet

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**NAME:** ________________________________

**U.I.D.** # __

**DATE:** ____________

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### Core Courses

**FRESHMAN 1**
- **CAS MA 123** Calculus I (4)
- **CAS CH 131** Principles of General Chemistry (4)
- **ENG EK 100** Freshman Seminar (0)
- **ENG EK 127/128** Engineering Computation/++ (4)
- **ENG EK 130/131/132** Introduction to Engineering (4)
- **CAS WR 100** Writing Seminar (4)

**FRESHMAN 2**
- **CAS MA 124** Calculus II (4)
- **CAS PY 211** Physics I (4)
- **ENG EK 307** Electric Circuits (4)
- **ENG EK 156** Design and Manufacture (2)
- **Social Science Elective** (4)

**SOPHOMORE 1**
- **CAS MA 225** Multivariate Calculus (4)
- **CAS PY 212** Physics II (4)
- **ENG EK 301** Engineering Mechanics I (4)
- **ENG EK 102** Introduction to Linear Algebra for Engineers (2)
- **Humanities Elective** (4)

**SOPHOMORE 2**
- **CAS MA 226** Differential Equations (4)
- **Natural Science Elective** (4)
- **ENG EK 304** Energy and Thermodynamics ($^5$)
- **ENG EK 303** Fluid Mechanics (4)
- **Social Science/ Humanities** (4)

**JUNIOR 1**
- **ENG ME 359** Introduction to Computer Aided Design (2)
- **ENG ME 305** Mechanics of Materials (4)
- **ENG ME 306** Materials Science (4)
- **Advanced Elective** (4)
- **Advanced Elective** (4)

**JUNIOR 2**
- **ENG ME 360** Product Design (4)
- **ENG ME 302** Engineering Mechanics II (4)
- **ENG ME 307** Experiments in Mechanics (4)
- **ENG ME 419** Heat Transfer (4)
- **Advanced Elective** (4)

**SENIOR 1**
- **ENG ME 460** Electro-Mechanical System Design (4) [Fall Only]
- **ENG ME 310** Instrumentation and Theory of Experiments (4)
- **Advanced Elective** (4)
- **General Education Elective** (4)

**SENIOR 2**
- **ENG ME 461** Mechanical Engineering Capstone Experience (4) [Spring Only]
- **Advanced Elective** (4)
- **Advanced Elective** (4)

**Extra Courses**
- ( )
- ( )
- ( )
- ( )
- ( )
- ( )

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**Key:**
- **Math**
- **Natural Science**
- **Engineering Common**
- **General Education**
- **Mechanical Required**
- **Electives**

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**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

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**Prereq. = **

**Coreq. = **

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- Students who plan to study abroad in Sophomore 2 should take EK 301 in Sophomore 1
- Students who have successfully completed or have AP credit for both CAS CH 101 and CAS CH 102 have satisfied the Chemistry and Natural Science Elective requirements

- **GRADUATION REQUIREMENT: 136 credits**
- **ENG Credit Requirement:** 48 credits/Upper Division Program courses completed at Boston University
MECHANICAL ENGINEERING REQUIREMENTS

Mechanical Engineering majors are required to complete a minimum of 136 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/.

NATURAL SCIENCE ELECTIVE

The Natural Science Elective for Mechanical Engineering majors can be satisfied by:

- ENG BE 209 – Principles of Molecular Cell Biology & Biotechnology
- Astronomy (AS) - Any 200-level or higher course or any 100-level course that includes a lab
- Biology (BI) - Any 200-level or higher course or any 100-level course that includes a lab
- Neuroscience (NE) - All
- Chemistry (CH) - Any 200-level or higher course
- Physics (PY) - Any 300-level or higher course, CAS PY 231- The Physics in Music
- Earth Science (ES) - Any 300-level or higher course. Also the following:
  - CAS ES 101 – Dynamic Earth
  - CAS ES 105 – Environmental Earth Sciences
  - CAS ES 140 – Earthquakes, Volcanoes, Natural Disasters
- The following GE courses:
  - CAS GE 101 – Natural Environ: Atmosphere
  - CAS GE 104 – Natural Environ: Physical Landscape
  - CAS GE 110 – Our Changing Planet
  - CAS GE 302 – Remote Sensing of the Environment
  - CAS GE 307 – Biogeography
  - CAS GE 310 – Climate & the Environment
  - CAS GE 365 – Intro Geographic Information Systems
  - CAS GE 102 – CAS MA 142, CAS MA 242
  - CAS GE 375 – Intro Quant Environmental Modeling
  - CAS GE 445 – Physical Models in Remote Sensing
  - CAS GE 448 – Remote Sensing of Vegetation
  - CAS GE 456 – Terrestrial Ecosystems & Carbon Cycle
  - CAS GE 483 – Geodynamics II: Fluids & Fluid Transport

ADVANCED ELECTIVES

Mechanical Engineering majors complete 4 Advanced Elective courses. Acceptable courses include all engineering (ENG) courses 300 level or above including ENG ME 452 and ENG ME 457, as long as there is not significant overlap with other courses being used for the degree (See Notes below). Acceptable courses outside of ENG include:

- CAS AS 414 – Solar and Space Physics
- SMG SI 480 – The Business of Technology Innovation
- SMG SI 482 – Technology and its Commercialization

Additionally other 300-level or above Mathematics and Natural Science courses may be acceptable by petition.

DEGREE ENHANCEMENTS

CONCENTRATIONS

Students majoring in Mechanical Engineering may choose to add a Concentration in Aerospace Engineering, Manufacturing Engineering, Energy Technologies, Nanotechnology or Technology innovation. A concentration requires 4 courses which can usually be used to satisfy Advanced Elective requirements (and in some cases General Education requirements). Hence, a concentration can usually be completed without requiring additional coursework. For information on concentrations go to: 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/. 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 162 credits and students must fulfill the requirements for each of the degree programs. See 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/.

Notes:
For the following 9 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 EK 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 EK 500
9. ENG ME 359, ENG ME 407