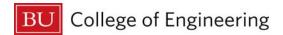
# **Mechanical Engineering – 2019**

**Undergraduate Program Planning Sheet** 



NAME: **U.I.D.**#\_∪ DATE: CAS MA 123 CAS CH 131 ENG EK 100 ENG EK 127/128 CAS WR 100 FRESHMAN 1 Calculus I Principles of General Freshman Seminar Engineering Writing Seminar Chemistry Computation/++ (0)Either Semester CAS MA 124 CAS PY 211 ENG EK 131 or ENG EK 132 CAS WR 150 FRESHMAN 2 Intro Engineering Calculus II Physics I Writing & Research Seminar Intro to Linear Algebra Social Science ENG EK 156 CAS PY 212 ENG EK 307 **CAS MA 225** Elective SOPHOMORE 1 Multivariate Calculus Physics II Electric Circuits (4) Either Semester Either Semester CAS MA 226 ENG EK 301 Humanities Elective Natural Science Intro to Engineering Design Differential Elective \*\* Engineering (2) SOPHOMORE 2 Equations Mechanics I (4) ENG ME 359 Intro Computer Aided Design
(2) ENG ME 305 ENG ME 304 ENG ME 303 Social Science/ Mechanics of Energy and Fluid Mechanics Humanities JUNIOR 1 Materials Thermodynamics Either Semester ENG ME 360 ENG ME 302 ENG ME 306 ENG ME 419 ENG ME 366 Prob & Stat for MECH Eng Product Design Engineering Materials Science Heat Transfer JUNIOR 2 Mechanics II (4) (4) Either Semester Either Semester ENG ME 310 Advanced Elective Advanced Elective SENIOR 1 Electro-Mechanical Instrumentation and System Design Theory of Experiments (4) [Fall Only] (4) (4) (4) Key: Math **ENG ME 461** Advanced Elective Advanced Elective General Education **Natural Science** Mechanical Elective SENIOR 2 **Engineering Common** General Education Capstone Experience Mechanical Required (4) [Spring Only] (4) (4) **Electives General Education Requirements** Checklist Extra 1. CAS WR 100 Courses 2. CAS WR 150 3. 1 Course in Social Science 4. 1 Course in Humanities 5. 1 Course SS or HUM \* Students who plan to study abroad in Sophomore 2 should take EK 301 in Sophomore 1 6. 1 Couse General Education \*\* Students who have successfully completed or have AP credit for both CAS CH 101 and CAS CH 102 have Elective Prereq.= satisfied the Chemistry and Natural Science Elective requirements Coreq.= ----**►** 7. Total of at least 24 credits GRADUATION REQUIREMENT: 136 credits

ENG Credit Requirement: 48 credits/Upper Division Program courses completed at Boston University



### 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: <a href="http://www.bu.edu/eng/current-students/ugrad/requirements/">http://www.bu.edu/eng/current-students/ugrad/requirements/</a>.

## **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 142 – Intro Beach & Shoreline Processes
CAS ES 144 - Oceanography
CAS ES 140 – Earthquakes, Volcanoes, Natural Disasters
CAS ES 222 - Mineralogy

• The following GE courses:

CAS GE 101 – Natural Environ: Atmosphere
CAS GE 104 – Natural Environ: Physical Landscape
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 Quant Environmental Modeling
CAS GE 440 – Digital Image Proc & Remote Sensing
CAS GE 445 – Physical Models in Remote Sensing
CAS GE 448 – Remote Sensing of Vegetation
CAS GE 456 – Terrestrial Ecosystems & Carbon Cycle
CAS GE 310 – Climate & the Environment
CAS GE 365 – Intro Geographic Information Systems

#### **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: <a href="http://www.bu.edu/eng/academics/programs/concentrations/">http://www.bu.edu/eng/academics/programs/concentrations/</a>.

# **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 <a href="http://www.bu.edu/eng/academics/programs/minors/">http://www.bu.edu/eng/academics/programs/minors/</a>. 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 <a href="http://www.bu.edu/eng/academics/special-programs/">http://www.bu.edu/eng/academics/special-programs/</a> 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: <a href="http://www.bu.edu/eng/academics/">http://www.bu.edu/eng/academics/</a>.

#### 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