### Mechanical Engineering – 2020 Undergraduate Program Planning Sheet

**NAME:** ____________________________  **U.I.D.#**  ____________________________  **DATE:** ____________________________

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**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 Engineering Computation/++ (4)
- CAS WR 100 Writing Seminar (4)

**FRESHMAN 2**
- CAS MA 124 Calculus II (4)
- CAS PY 211 Physics I (4)
- ENG EK 131/132 Intro to ENG (2)
- ENG EK 102 Intro Linear Algebra (2)
- CAS WR 150 Writing & Research Seminar (4)

**SOPHOMORE 1**
- CAS MA 225 Multivariate Calculus (4)
- CAS PY 212 Physics II (4)
- ENG EK 101 Engineering Mechanics I (4)
- ENG EK 210 Intro to ENG Design (2)

**SOPHOMORE 2**
- CAS MA 226 Differential Equations (4)
- Natural Science Elective ** (4)
- ENG EK 301 Engineering Mechanics II (4)
- Social Science/Elective (4)

**JUNIOR 1**
- ENG ME 304 Energy and Thermodynamics (4)
- ENG ME 303 Fluid Mechanics (4)
- ENG ME 305 Mechanics of Materials (4)
- ENG ME 359 Introduction to CAD (2)
- Social Science/Elective (4)

**JUNIOR 2**
- ENG ME 306 Materials Science (4)
- ENG ME 419 Heat Transfer (4)
- ENG ME 302 Engineering Mechanics II (4)
- ENG ME 360 Product Design (4)
- ENG ME 366 Probability & Stats (2)

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

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

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**Extra Courses**

**Prereq.** ——— **Coreq.** ———

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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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* 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
*** ME 310 can be taken in Junior 2, Senior 1, or Senior 2, as long as all prerequisites are met

- **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: http://www.bu.edu/eng/current-students/ugrad/requirements/.

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

- Anthropology (AN) – CAS AN 102 – Human Biology, Behavior, and Evolution
- Astronomy (AS) – CAS AS 101 – The Solar System
- Biomedical Engineering (BE) - ENG BE 209 – Principles of Molecular Cell Biology & Biotechnology
- Chemistry (CH) - Any 200-level or higher course with a lab
- Earth & Environment (ES) – CAS ES 105 – Environmental Earth Sciences
- Earth & Environment (ES) – CAS ES 107 – Introduction to Climate and Earth System Science
- Chemistry (CH) - Any 200-level or higher course with a lab
- Physics (PY) - CAS PY 231 – The Physics In Music
- Physics (PY) - CAS PY 313 – Waves & Modern Physics
- Additionally, any other 300-level or above Natural Science courses may be acceptable by petition.

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
- QST SI 480 – The Business of Technology Innovation
- QST 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 EX 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 EX 500 (9) ENG ME 359, ENG ME 407

4/21/17