### Undergraduate Program in Mechanical Engineering

### Recommended Sequence of Required Courses for the Major in Mechanical Engineering (2023)

#### Stony Brook Curriculum

**Freshman**
- **Fall**
  - SBU 101 Intro Stony Brook
  - WRT 102 Introd. Writing
  - HUM 131 Humanities
  - PHY 131 & PHY 133 Classical Physics I
- **Spring**
  - SBU 102 Topics Info & Tech
  - USA 131 History of US
  - CHE 131 or ESG 198 Chemistry
  - PHY 132 & PHY 134 Classical Physics II

**Sophomore**
- **Fall**
  - ECO 108 or EST 392 Economics
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics
- **Spring**
  - ECO 108 or EST 392 Economics
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics

**Junior**
- **Fall**
  - ECO 108 or EST 392 Economics
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics
- **Spring**
  - GLO 310 Global Issues
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics

**Senior**
- **Fall**
  - ECO 108 or EST 392 Economics
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics
- **Spring**
  - ECO 108 or EST 392 Economics
  - CHE 310 or MEC 300 Mat. Sci. I
  - MEC 300 Profess. Conduct
  - MEC 301 Thermodynamics

#### Additional Requirements

**Technical Electives**
- (≥ 9 credits with at least 2 MEC courses)
  - Mechanical Engineering
    - MEC 390, 399, 423, 450, 455, 465, 466, 499
    - MEC 500-level courses
    - Required GPA ≥ 3.0 & permission of GPD
  - Applied Math and Statistics
    - AMS 301, 311, 315, 341, 342, 351
  - Biomedical Engineering
    - BME 353, 481
  - Chemical Engineering
    - CHE 310, 320, 330, 420, 422
  - Chemical Engineering
    - CME 369, 372
  - Computer Science
    - CSE 308, 327, 328, 352
  - Electrical Engineering
  - Environmental Science and Engineering
    - ESG 225, 226, 335, 336, 353, 369, 486
  - Engineering
    - ETE 326, 327, 364, 391, 393

**Basic Science Electives**
- (≥ 3 credits)
  - PHY 251/252 Modern Physics (4)
  - ESG 261 Engineering Intro Solid State (3)
  - PHY 300 Waves and Optics (4)
  - CHE 132 General Chemistry II (4)
  - BIO 202 Molecular and Cellular Biology (3)
  - BIO 203 Cellular and Molecular Biology (4)
  - GEO 310 Intro to Geophysics (3)
  - GEO 312 Structure and Prop. of Materials (3)
  - AST 203 Astronomy (4)
  - AST 205 Intro to Planetary Science (3)
  - ATM 205 Intro to Atmospheric Science (3)

**Minor in Mechanical Engineering**
- (≥ 18 credits)
  - Four Required Courses:
    - MEC 250 Engineering Statics
    - MEC 262 Engineering Dynamics
    - MEC 301 Thermodynamics (or ESG 302)
    - MEC 363 Mechanics of Solids
  - Additional term offerings
  - Prerequisite
  - Co-requisite

**Additional Term Offerings**

**Requirements for Admission to the Major in Mechanical Engineering**

Qualification for admission is based upon all of the following requirements:
1. Completion of PHY 131 or PHY 126 or PHY 127 or their equivalents.
2. One MEC course required for the major and taken at Stony Brook.
3. Earn 10 or more credits of mathematics, physics, and engineering courses that are taken at Stony Brook and satisfy the Major’s requirements.
4. Obtain a G.P.A. of at least 3.2 in major courses with no more than one grade below B-.
5. No courses required for the major have been repeated.

Admission is highly competitive and contingent upon program capacity.

**Accelerated BE/MS Program in Mechanical Engineering** (5 years)

The accelerated BE/MS program in mechanical engineering allows students to use up to 6 graduate credits (typically technical electives) taken as an undergraduate towards MS degree requirements, thus reducing the normal time required to complete the MS degree. The program is designed for upper-division mechanical engineering students with superior academic records (GPA ≥ 3.2).

**Two Elective Courses:**
- MEC 364 Introduction to Fluid Mechanics
- MEC 393 Engineering Fluid Mechanics
- MEC 398 Thermodynamics II
- MEC 411 System Dynamics and Control
- MEC 485 Applied Stress Analysis

Send inquiries to: mechanicalengineeringundergrad@stonybrook.edu

Department of Mechanical Engineering, Stony Brook University (2022)