UNDERGRADUATE PROGRAM IN MECHANICAL ENGINEERING

Recommended Sequence of Required Courses for the Major in Mechanical Engineering (2018)

Stony Brook Curriculum

Freshman
- Fall
  - ITS 101
  - WRT 102
  - HUM
- Spring
  - ITS 102
  - USA

Sophomore
- Fall
  - ECO 108 or EST 392 Economics
  - CHE 131 or ESG 198 Chemistry
  - CHE 132
  - CHE 135
- Spring
  - BSE Bas. Sci. Elective
  - MEC 300

Junior
- Fall
  - ESG 332 Mat. Sci. I
  - STAS
  - MEC 316 Mech. Eng. Lab I
  - MEC 317 Mech. Eng. Lab II
- Spring
  - MEC 305 Heat Transfer
  - MEC 320 Num. Math. Des. A
  - MEC 341 Intro MC Des.

Senior
- Fall
  - MEC 225 Mach. Pract. Spr
  - MEC 226 Mach. Pract. Spr
  - MEC 440 Engineering Controls
- Spring
  - MEC 411 Ctr. Syst. A. Des.
  - MEC 422 Thermal Syst. Des.
  - MEC 441 Mech. Eng. Des. II

Additional Degree Requirements

Technical Electives
(≥ 9 credits with at least 2 MEC courses)
- Mechanical Engineering
  - MEC 393, 398, 423, 450, 455, 456, 499.
  - MEC 306, 509, 516, 526, and other 500-level courses. Required GPA ≥ 3.0 & permission of GPD

Applied Math and Statistics
AMS 310, 311, 315, 341, 342, 351

Biomedical Engineering
BME 353, 481

Civil Engineering
CIV 310, 422

Chemical Engineering
CME 369

Computer Science
CSE 308, 327, 328, 352

Electrical Engineering

Material Science and Engineering
ESG 333, 339, ESM 335, 338, 353, 369, 486

Technology and Society
EST 326, 327, 364, 391, 393

Basic Science Electives
(≥ 3 credits)
- PHY 251/252 Modern Physics (4)
- ESG 281 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 Organ Physiology (3)
- 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)
- ATV 205 Intro to Atmospheric Science (3)

Minor in Mechanical Engineering
(≥ 18 credits)

Four Required Courses
- MEC 260 Engineering Statics
- MEC 262 Engineering Dynamics
- MEC 301 Thermodynamics (or ESG 302)
- MEC 363 Mechanics of Solids

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-; and
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
- MEC305 Heat and Mass Transfer
- MEC 310 Introduction to Machine Design
- MEC 320 Numerical Methods in Design & Analysis
- MEC 325 Manufacturing Processes
- MEC 364 Introduction to Fluid Mechanics
- MEC 367 Engineering Fluid Mechanics
- MEC 393 Thermodynamics II
- MEC 402 Mechanical Vibrations
- MEC 411 System Dynamics and Control
- MEC 455 Applied Stress Analysis

Send inquiries to mechanicalengineeringundergrad@stonybrook.edu

Department of Mechanical Engineering, Stony Brook University (2018)