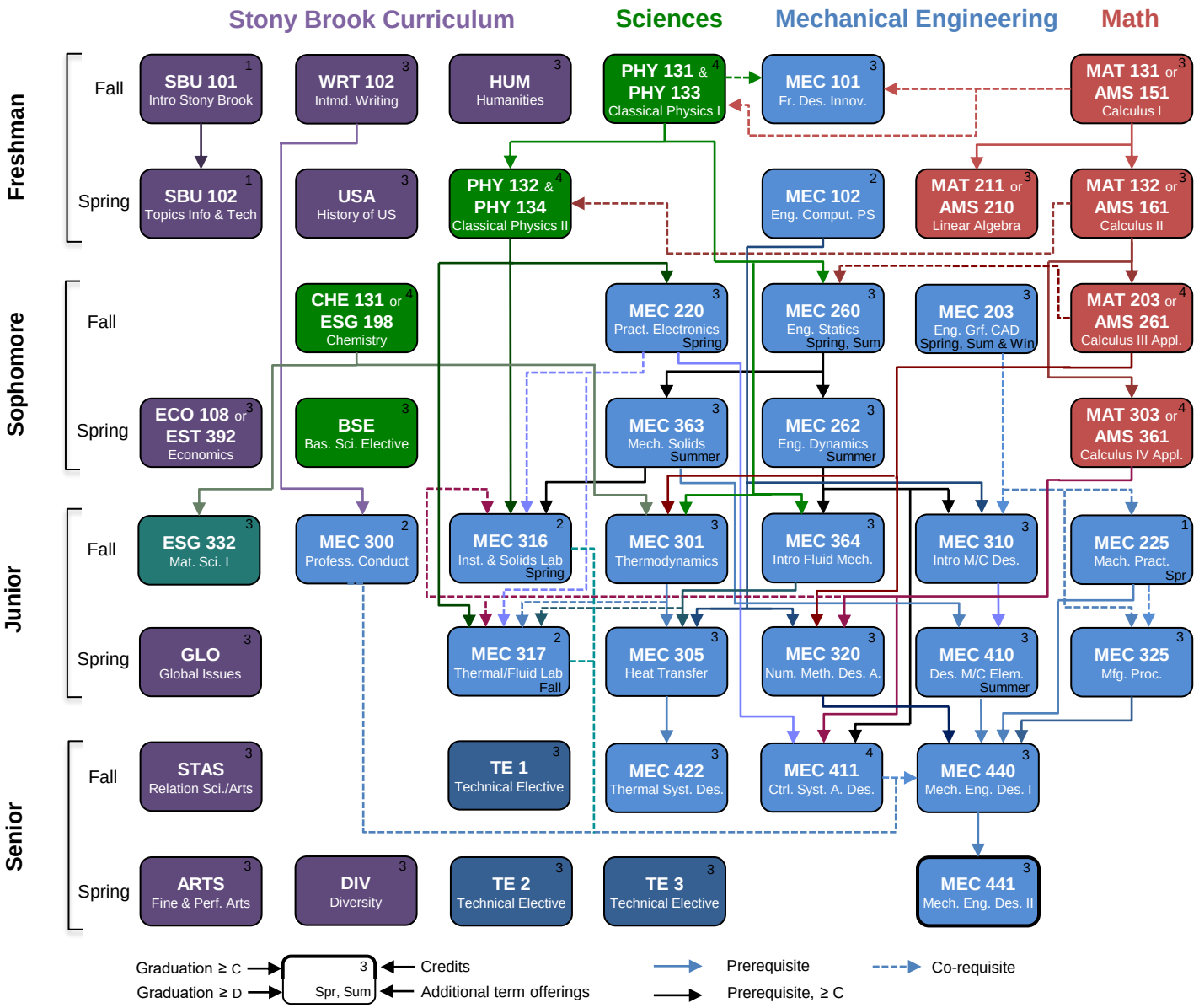
Undergraduate Program in Mechanical Engineering

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



Additional Requirements

Technical Electives
(≥ 9 credits with at least 2 MEC courses)

Mechanical Engineering
MEC 393, 398, 423, 450, 455, 456, 465, 499
MEC 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, 320, 330, 420, 422

Chemical Engineering
CME 369, 372

Computer Science
CSE 308, 327, 328, 352

Electrical Engineering
ESE 305, 306, 311, 330, 347, 350, 352, 380, 381

Material Science and Engineering
ESG 333, 339, **ESM** 335, 336, 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)
ATM 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**)
MEC363 Mechanics of Solids

Two Elective Courses:
MEC 305 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 393 Engineering Fluid Mechanics
MEC 398 Thermodynamics II
MEC 411 System Dynamics and Control
MEC 455 Applied Stress Analysis

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).

Send inquiries to mechanicalengineeringundergrad@stonybrook.edu

Department of Mechanical Engineering, Stony Brook University (2022)