The rationale behind technical electives is to enable students to either learn more about specific topics or to gain specialized knowledge in subject areas outside the selected focus sequence. **A course cannot be taken both as part of a focus sequence and as a TE.** Other engineering courses having technical depth equivalent to the level of upper division SE courses will also be considered via petition process.

**ENG 100D/100L* TIES program (6 units)**

SE 103 Conceptual Structural Design
SE 132 Machine Learning for Structural Engineering
SE 142 Design of Composites Structures
SE 150A Design of Steel Structures
SE 150B Design of Steel Structures II
SE 151A Design of Reinforced Concrete
SE 151B Design of Prestressed Concrete
SE 154 Design of Timber
SE 160A-B Aerospace Structural Design
SE 163 Nondestructive Evaluation and Design
SE 164 Sensors and Data Acquisition
SE 165 Structural Health Monitoring
SE 167 Signal Processing and Spectral Analysis for Structural Engineering
SE 168 Structural System Testing and Model Correlation
SE 171 Aerospace Structures Repair
SE 180 Earthquake Engineering
SE 181 Geotechnical Engineering
SE 182 Foundation Engineering
SE 184 Ground Improvement

**SE 200-289** Graduate Courses

MAE 101B Advanced Fluid Mechanics
MAE 101C Heat Transfer
MAE 104 Aerodynamics
MAE 105 Introduction of Mathematical Physics
MAE 110 Thermodynamics
MAE 118 Introduction to Energy Systems
MAE 119 Introduction to Renewable Energy
MAE 120 Introduction to Nuclear Energy
MAE 122 Flow and Transport in the Environment
MAE 124 Environmental Challenges: Science and Solutions
MAE 143A Signals and Systems
MAE 143B Linear Control
MAE 145 Introduction to Robotic Planning and Estimation
MAE 149 Sensor Networks
MAE 160 Mechanical Behavior of Materials
MAE 165 Fatigue and Failure Analysis of Engineering Components
MAE 166 Nanomaterials
MAE 167 Wave Dynamics of Materials
MAE 180A Spacecraft Guidance I
MAE 181 Space Mission Analysis and Design
MAE 184 Flight Simulation Techniques

* ENG 100D and one ENG 100L course must be taken together for a total of 6 units to count as one technical elective. TIES can only be used for a total of one TE. Please send the SE advisor a note via the VAC if you complete these so your degree audit can be updated.

** Students wishing to take graduate courses must have a minimum 3.0 overall GPA and obtain instructor approval prior to enrolling. Graduate students will have priority enrollment. You may not count a graduate course as a TE if you took the undergraduate equivalent and vice versa (i.e. – SE 160A/SE 260A, SE 160B/SE 260B, SE 163/263, SE 164/264, SE 165/SE 265, SE 168/SE 268, SE 171/SE 262, SE 182/SE 242, SE 184/SE 247).

**All Technical Elective courses must be taken for letter grade and only grades of C- or better count for the major.**