

Preapproved Technical Elective (TE) Courses

(changes effective Winter 2021)

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.