

## MECHANICAL ENGINEERING TECHNICAL ELECTIVES

2022-2026

11 Units Total

Up to 4 units can be an upper division course outside of ME in CENG, with the exception of Upper Division B, senior project, thesis, special problems and coop courses.

Subject	Catalog	Course Title	Term Typically Offered
ME	305	Introduction to Mechatronics	F, SP
ME	359	Fundamentals of HVAC Systems	W
ME	361	Fundamentals of Fire Protection Engineering	SP
ME	400**	Special Problems for Advanced Undergraduates	F, W, SP
ME	401	Stress Analysis	TBD
ME	402	Orthopedic Biomechanics	W
ME	403	Access by Design: Introduction to Rehab Eng.	TBD
ME	404	Applied Finite Element Analysis	F, W
ME	405	Mechatronics	F, W
ME	409	Interdisciplinary Study in Biomechanics	TBD
ME	410	Experimental Methods in Mechanical Design I	TBD
ME	412	Composite Materials Analysis and Design	W
ME	415	Energy Conversion	SP
ME	416	Ground Vehicle Dynamics and Design	W
ME	423	Robotics: Fundamentals and Applications	W
ME	431	Mechanical Design Techniques	TBD
ME	437	Nuclear Energy Power Generation	F
ME	438	Nuclear Power Plant Design	W
ME	439	Nuclear Power Plant Operations	TBD
ME	441	Single Track Vehicle Design	SP
ME	442	Design of Machinery	F
ME	443	Turbomachinery	SP
ME	444	Combustion Engine Design	TBD
ME	450	Solar Thermal Power Systems	F
ME	451	Engineering, Design, and Social Justice	SP
ME	453	Trends and Opportunities in HVAC&R	SP

Subject	Catalog	Course Title	Term Typically Offered
ME	454	Benchmarking & Assessment of Building Energy Performance	W
ME	455	Introduction to Building Energy Modeling	SP
ME	456	HVAC Air and Water Distribution System Design	F
ME	457	Refrigeration Principles and Design	SP
ME	458	Building Heating and Cooling Loads	F
ME	470*	Selected Advanced Topics	TBD
ME	471*	Selected Advanced Laboratory	TBD
ME	488	Wind Energy Engineering	SP
ME	501	Continuum Mechanics and Elasticity	F
ME	503	Inelastic Stress Analysis	W
ME	504	Finite Element Analysis	SP
ME	506	System Dynamics	SP
ME	507	Mechanical Control System Design	F, SP
ME	517	Advanced Vibrations	SP
ME	518	Machinery Vibration and Rotor Dynamics	W
ME	540	Viscous Flow	W
ME	541	Advanced Thermodynamics	TBD
ME	542	Dynamics and Thermodynamics of Compressible Flow	F
ME	552	Advanced Heat Transfer I	W
ME	553	Advanced Heat Transfer II	TBD
ME	554	Computational Heat Transfer	SP
ME	556	Advanced Heat Transfer III	SP
ME	570	Selected Advanced Topics	TBD
ME	571	Selected Advanced Laboratory	TBD
ME	579	Fluid Power Control	TBD

Consultation with advisor is recommended prior to selecting technical electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

\*ME 470, ME 471, ME 570 and ME 571 are variable topics courses and may or may not count as ME electives. Please contact instructor for additional information. A course substitution form is required.

\*\*ME 400 and ME 500 are independent study classes and may be acceptable for technical elective credit. Instructor approval and a course substitution form is required.