

BSAEE - Approved Technical Elective List

2021-22 Catalog Requirements

Aerospace Majors are required to take 6 units of coursework from this list of approved technical electives. This total must include 3 units of 400-level AME-prefix coursework (courses in bold below).

- A maximum of 3 units of internship credit (AME 493) or 3 units of independent study (AME 499) and 3 units of directed research (AME 492) can count toward the technical elective requirement.
- Students may propose a 300/400 level science or engineering class to be considered for pre-approval as a tech elective.
- Some students may also be eligible to take graduate level coursework to apply as a technical elective.
- Students are responsible for all prerequisites (check catalog).
- Math: Any 300/400 level class applying to math minor may count as a non-AME tech elective.

ABE	411	Physiology Biomed Eng	
ABE	423	Biosystems Anal Design	
ABE	447	Sensors and Controls	
ABE	452	Globalization, Sustainability and Innovation	
AME	324	B Engineering Component Design	
AME	352	Dynamics of Machines	
AME	410	Intro. to Additive Manufacturing	
AME	426	Rocket Propulsion	
AME	429	Interplanetary Mission Design	
AME	430	Intermediate Thermo	
AME	431	Num Meth Fluid Mech.	if AME 463 also taken
AME	433	Prin/ Appl Fluid Mech.	
AME	434	Internal Combustion Engines	
AME	442	HVAC System Design	
AME	444	Applied Thermodynamics	
AME	445	Renewable Energy Sys.	
AME	446	Fuel Cell Design	
AME	451	Vehicle Dynamics	
AME	452	Planar Multibody Dynamics	
AME	454	Spacecraft Attitude Dyn + Ctrl.	
AME	455	Control System Design	
AME	460	Mechanical Vibrations	
AME	462	Composite Materials	
AME	463	Finite Element Anal w/ ANSYS	if AME 431 also taken
AME	466	Biomechanical Eng	
AME	469	Engr. Design + Mat'l. Selection	
AME	472	Reliability Eng.	
AME	480	Intro. Nuclear Eng.	
AME	483	Micro Biomechanics	
AME	487	Guided Self- Studies Mechatronics	
AME	488	Micro/Nano Trans Physics & Design	
AME	489	A Fab Tech Micro- & Nanodevices	
AME	489	B Bio Micro/ Nano Appl.	
BME	416	Principles of Biomed Eng.	
BME	330	Biomedical Instrumentation	
BME	417	Meas/ Data Anal Biomed Eng	
BME	447	Sensors and Controls	
BME	480	Translational Biomedical Engineering	
CE	333	Elemental Structural Analysis	
CE	423	Hydrology	
CE	439	Dev Next Gen Li-ion Batteries	
CE	476	A Water Treatment System Design	
ECE	320	A Circuit Theory	
ECE	351	C Electronic Circuits	
ECE	373	Object-Oriented Software Design	
ECE	442	Digital Control Systems	

ECON	339	Economic Statistics	
ENGL	308	Technical Writing	if not used to fulfill MCWA
ENGR	423	Customer Driven Prod Dev & Lean Startups	
ENGR	481	A Innovation, Translation and Entrepreneurship	
G EN	402	Prob Stat Concepts Geolog Media	
G EN	427	GeoMechanics	
G EN	446	Earthquake Engineering	
GEOS	419	Physics of the Earth	
MATH	Any 300/400 level class applying to math minor may count as a non-AME tech elective.		
MNE	422	Engineering Sustainable Dev	
MSE	350	Numerical Methods in MSE (Python)	
MSE	414	Solidification of Castings	
MSE	420	Materials in Applied Solar Energy	
MSE	424	Physics Chem Ceramic Materials	
MSE	434	Elect & Optical Prop of Materials	
MSE	435	Corrosion/ Degradation	
MSE	446	Semiconductor Proc	
MSE	450	Materials Selection for the Environ	
MSE	455	Physical Metal & Processing Alloys	
MSE	460	Materials Science of Polymers	
MSE	462	Material Aspects of Composite Materials	
MSE	414	Solidification of Castings	
OPTI	434	Electical & Optical Prop of Mat	
OPTI	440	Medical Physics	
OPTI	450	Fundamentals of Remote Sensing	
PHYS	321	Theoretical Mechanics	
PHYS	440	Medical Physics	
PTYS	403	Physics of the Solar System	
PTYS	419	Physics of the Earth	
SIE	305	Probability and Statistics	
SIE	321	Probabilistic Models in Oper Research	
SIE	367	Engineering Management II	
SIE	383	Integrated manufacturing Systems	
SIE	406	Quality Engineering	
SIE	408	Systems Reliability Engr.	
SIE	410	A Human Factors & Ergonomics in Design	
SIE	414	Law for Engineers and Scientists	
SIE	415	Technical Sales & Mktg.	
SIE	422	Engr Decision Making w/ Uncertainty	
SIE	430	Engineering Statistics	
SIE	431	Simulation Modeling and Analysis	
SIE	452	Space Systems Engineering	
SIE	454	A Systems Eng Process	
SIE	456	Fund. Of Guidance/ Aero. Systems	
SIE	457	Project Management	
SIE	464	Cost Estimation	
SIE	474	Decision Support System	
SIE	482	Lean Engineering	
SIE	483	Computer Integrated Manufacturing	
SIE	484	Development of New Venture Plans	
SIE	487	New Venture Dev & Industry Analysis	