BSME Technical Electives

The BSME program requires 6 units of technical electives (i.e., two 3-unit courses). Shown here is a map of the three capstone course options and alignment with popular 3-unit technical electives.

Technical Elective	ME 157 Mechanical System Design	ME 182 Thermal Systems Design	ME 190 Mechatronics System Design	Typical Semester Offered
ME 110 Manufacturing Processes	Required	Recommended	Recommended	Fall
ME 135 Intro to Composite Materials	Recommended	Acceptable	Acceptable	Spring
ME 136 Design for Manufacturability	Highly Recommended	Acceptable	Acceptable	Spring
ME 160 Intro to Finite Element Method	Highly Recommended	Highly Recommended	Acceptable	both
ME 165 Computer-Aided Design in ME	Highly Recommended	Acceptable	Acceptable	Spring
ME 167 Intro to Engineering Biomechanics	Acceptable	Acceptable	Acceptable	Spring
ME 170 Solar Energy Engineering	Acceptable	Recommended	Acceptable	Fall (alternating with ME 172)
ME 172 Alternative & Renewable Energy Resources	Acceptable	Recommended	Acceptable	Fall (alternating with ME 170)
ME 181 Fundamentals of Biosensors	Acceptable	Acceptable	Recommended	variable
ME 183 HVAC Systems Design	Acceptable	Highly Recommended	Acceptable	Spring
ME 185 Hybrid and Electric Vehicle Fund.	Acceptable	Acceptable	Acceptable	Spring
ME 186 Automotive Engineering	Acceptable	Acceptable	Acceptable	Fall
ME 187 Automatic Control Systems Design	Acceptable	Recommended	Highly Recommended	Spring
ME 189 Design and Manuf. of Microsystems	Acceptable	Acceptable	Recommended	variable
ME 192 Robotics and Manufacturing Sys.	Acceptable	Acceptable	Highly Recommended	Fall
CE 150 Intro to Hydrology and Hydraulics	Acceptable	Recommended	Acceptable	both

Below are some courses from other departments that have been accepted as technical electives for BSME candidates. Any non-ME elective, however, must be approved by a BSME advisor. Typically only one non-ME course would be approved and the other elective would have to be selected from ME courses.

AE 114 Aerospace Structures
AE 140 Rigid Body Dynamics
AE 167 Aerospace Propulsion
AE 169 Computational Fluid Dynamics
BME 117 Biotransport Phenomena
ISE 102 Engineering Economic Systems
ISE 130 Engineering Probability and Statistics
ISE 151 Managing Engineering
CE 170 Principles of Environmental Engineering
ChE 162 Engineering Statistics and Analysis
CmpE 102: Fundamentals of Embedded Software
CmpE 124: Digital Design I
CmpE 125: Digital Design II
CmpE 120 Computer Organization and Architecture
CmpE 126 Algorithms and Data Structure Design
MatE 129 Integrated Circuit Processing and Design
MatE 131 Fundamentals of Additive Manufacturing
MatE 153 Electronic, Optical and Magnetic Properties
MatE 175 Biomaterials
Math 133B Partial Differential Equations
Math 178 Mathematical Modeling
Math 161a Probability and Statistics*

*Must be upper division to count as an elective, so courses taken at community colleges can't be used as electives.

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