**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.

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| **Technical Elective** | **ME 157**  **Mechanical**  **System Design** | **ME 182**  **Thermal**  **Systems Design** | **ME 190**  **Mechatronics**  **System Design** | **Typical Semester Offered 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 CmpE 102 Fundamentals of Embedded Software

AE 140 Rigid Body Dynamics CmpE 124: Digital Design I AE 167 Aerospace Propulsion CmpE 125: Digital Design II

AE 169 Computational Fluid Dynamics CmpE 120 Computer Organization and Architecture

BME 117 Biotransport Phenomena CmpE 126 Algorithms and Data Structure Design

ISE 102 Engineering Economic Systems MatE 129 Integrated Circuit Processing and Design

ISE 130 Engineering Probability and Statistics MatE 153 Electronic, Optical and Magnetic Properties

ISE 151 Managing Engineering MatE 175 Biomaterials

CE 170 Principles of Environmental Engineering Math 133B Partial Differential Equations

ChE 162 Engineering Statistics and Analysis Math 178 Mathematical Modeling

Math 129a Linear Algebra\* 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.