

**Energy Engineering (BSEEN) Degree
Curriculum
As of Fall 2020**

EEN ELECTIVES (4 courses, 12 credit hours)

- ECE 42700 Power Electronics (3 cr.)
- ECE 43200 Elmnt. Power Systems ENGR (3 cr.)
- ECE 49500 Electronic Fundamentals of Electric Vehicles (3 cr.)
- ECE 59500 Smart Grid (3 cr.)
- EEN 49700 HVAC Systems and Energy Use (3 cr.)
- ME 43300 Principles of Turbomachinery (3 cr.)
- ME 49700 Reliability of Components & Systems (3 cr.)
- One of the following: ME 44100, ME 44200, or ME 44300 (please note only one of these courses will count towards an EEN elective, if you want to take another you can use it as an EEN Tech Elective)
- ME 50000 Advanced Thermodynamics (3 cr.)
- ME 50101 Energy Assessment of Industrial Processes (3 cr.)
- ME 50102 Energy Management Principles (3 cr.)
- ME 50103 Industrial Energy Assessment: Tools & Applications (3 cr.)
- ME 50104 Powertrain Integration (3 cr.)
- ME 50105 Hybrid and Electric Transportation (3 cr.)
- ME 50400 Automotive Control (3 cr.)
- ME 50500 Intermediate Heat Transfer (3 cr.)
- ME 50900 Intermediate Fluid Mechanics (3 cr.)
- ME 51000 Gas Dynamics (3 cr.)
- ME 51201 Energy Storage Devices and Systems (3 cr.)
- ME 52301 Nanosystems Principles (3 cr.)
- ME 52500 Combustion (3 cr.)
- ME 53501 Introduction to Systems Engineering (3 cr.)
- ME 53502 Systems and Specialty Engineering (3 cr.)
- ME 54800 Fuel Cell Science & Engineering (3 cr.)
- ME 57301 Air Pollution and Emission Control (3 cr.)
- ME 59700 Ceramics Materials for Renewable Energy (3 cr.)
- ME 59700 Dynamics and Simulation of Hybrid-electric Vehicles (3 cr.)
- ME 59700 Industrial Energy Audit 1 (1 cr.)
- ME 59700 Industrial Energy Audit 2 (2 cr.)

TECHINICAL ELECTIVES (2 courses, 6 credit hours)

- ME 32600 Engineering Project Management (3 cr.)
- ME 34400 Introduction to Engineering Materials (3 cr.)
- ME 37200 Design of Mechanisms (3 cr.)
- ME 41400 Thermal-Fluid Systems (3 cr.)
- ME 42301 Introduction to Nanotechnology (3 cr.)

- ME 43300 Principles of Turbomachinery (3 cr.)
- ME 49100 Engineering Design Project (1- 2 cr.)
- ME 44100 Design for IP Protection 1 (3 cr.)
- ME 44200 Design for Patentability (3 cr.)
- ME 443 IP Rights for Engineers (3 cr.)
- ME 50000 Advanced Thermodynamics (3 cr.)
- ME 50101 Energy Assessment of Industrial Processes (3 cr.)
- ME 50102 Energy Management Principles (3 cr.)
- ME 50103 Industrial Energy Assessment: Tools & Applications (3 cr.)
- ME 50104 Powertrain Integration (3 cr.)
- ME 50105 Hybrid and Electric Transportation (3 cr.)
- ME 50400 Automotive Control (3 cr.)
- ME 50500 Intermediate Heat Transfer (3 cr.)
- ME 50601 Design Optimization Methods (3 cr.)
- ME 50900 Intermediate Fluid Mechanics (3 cr.)
- ME 51000 Gas Dynamics (3 cr.)
- ME 52301 Nanosystems Principles (3 cr.)
- ME 52500 Combustion (3 cr.)
- ME 52601 Integrated Nanotechnology Process and Devices (3 cr.)
- ME 53501 Introduction to Systems Engineering (3 cr.)
- ME 53502 Systems and Speciality Engineering (3 cr.)
- ME 54600 CAD/CAM – Theory and Advanced Applications (3 cr.)
- ME 55000 Advanced Stress Analysis (3 cr.)
- ME 55100 Finite Element Analysis (3 cr.)
- ME 55800 Composite Materials (3 cr.)
- ME 56300 Mechanical Vibrations (3 cr.)
- ME 56900 Mechanical Behavior of Materials (3 cr.)
- ME 58100 Numerical Methods in Mechanical Engineering (3 cr.)
- ME 59700 Integrated Nanosystems Processed and Devices (3 cr.)
- ME 59700 Selected Topics in Mechanical Engineering (3 cr.)
- ME 59700 Introduction to Friction & Wear (3 cr.)
- ME 59700 Analysis & Design of Robotic Manipulators (3 cr.)
- ME 59700 Topology Optimization (3 cr.)
- ME C18400, C28400, C38400, C48300, C48400 Cooperative Education Practice I-V (1 cr.)
- ME I18400, I28400, I38400, I48300, I48400 Career Enrichment Internship I-V (1 cr.)
- STAT 35000 Introduction to Statistics (3 cr.)

*Please note EEN students cannot take ME 54200; Introduction to Renewable Energy.