

# Building Energy Systems Minor

The Mechanical and Industrial Engineering Department within the Norm Asbjornson College of Engineering offers a non-teaching minor called the Building Energy Systems Minor. This minor provides a suite of courses from a wide variety of disciplines, which are relevant to the built environment. Students must satisfy the degree requirements for an ME, MET, CE, CET, EE or Arch degree plus the following courses to obtain a Building Energy Systems Minor.

The Building Energy Systems Minor requires a minimum of 22 credits , 8 credits of required core coursework and 14 credits of elective coursework chosen from each of the 5 categories.

ETME 327	Commercial Building Energy Assessment Lab	
ETME 462	Industrial Processing Automation and Controls	
ETME 470	Renewable Energy Applications	
<b>Total credits for Building Energy Systems Minor</b>		<b>22 (min. credits)</b>

**Core Coursework** **7 credits**

EGEN 324	Applied Thermodynamics or EMEC 321 Thermodynamics II
ETME 321	Applied Heat Transfer or EMEC 326 Fundamentals of Heat Transfer
ETME 424	Thermal Processes Lab

**Integrated Building Design** **3 credits**

Choose one from the following:

ETME 423	Principles of HVAC II
ARCH 431	Sustainability in Architecture

**Power Systems** **3-4 credits**

Choose one from the following:

EELE 250	Circuits, Devices and Motors
EELE 354	Electric Power Applications
EELE 355	Energy Conversion Devices
EELE 408	Photovoltaic Systems
EELE 454	Power Systems Analysis and Design
EELE 455	Alternative Energy Power Gen

**Environmental Controls/HVAC** **3 credits**

Choose one from the following:

ARCH 331	Environmental Controls I
ETME 422	Principles of HVAC I
ETME 425	Building Systems

**Building Construction/Design** **3-4 credits**

Choose one from the following:

ARCH 241	Building Construction I
ECIV 308	Construction Practice
ECIV 320	Geotechnical Engineering
ETCC 302	Soils and Foundations

**Building System Electives** **3 credits**

Choose multiple courses totaling at least 3 credits:

ARCH 363	Architectural Graphics III
ECIV 309	Building Information Modeling in Construction
ETME 309	Building Information Modeling in MEP