

# 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, 10 credits of required core coursework and 12 credits of elective coursework chosen from each of the 4 categories.

<b>Required Courses</b>	<b>10</b>
ETME 322 Introduction to Building Energy Systems	
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	
<b>Integrated Building Design</b>	<b>3</b>
Choose one from the following:	
ETME 423 Principles of HVAC II	
ARCH 431 Leadership in Architecture	
<b>Environmental Controls/HVAC</b>	<b>3</b>
Choose one from the following:	
ARCH 331 Environmental Controls I	
ETME 422 Principles of HVAC I	
ETME 425 Building Systems	
<b>Building Construction/Design</b>	<b>3</b>
Choose one from the following:	
ARCH 241 Building Construction I	
ECIV 308 Construction Practice	
ECIV 320 Geotechnical Engineering	
ETCC 302 Soils and Foundations	
<b>Building System Electives</b>	<b>3</b>
Choose one from the following:	
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	
ETME 462 Industrial Processing Automation and Controls	
ETME 470 Renewable Energy Applications	
<b>Total Credits</b>	<b>22</b>