

MODULE CON3080: ENERGY-EFFICIENT HOUSING

Level: Advanced

Theme: Building Systems (Processes and Applications)

Prerequisite: CON1070 Building Construction

Module Description: Students investigate construction practices and support systems to create an energy-efficient housing design.

Module Parameters: Access to a building site and/or construction facility and to instruction from an individual with specialized training in carpentry.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> identify and describe energy-efficient construction materials and techniques 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> a written report that correctly identifies and describes at least five types of energy efficient construction techniques and at least five energy efficient materials used in construction. <p><i>Assessment Tool</i> <i>Assessment Framework: Presentations/Reports, CTSPRE</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	20
<ul style="list-style-type: none"> calculate the energy efficiency of a typical residence or commercial structure 	<ul style="list-style-type: none"> the use of the appropriate programs to analyze and calculate the energy efficiency of a given house design 	30
<ul style="list-style-type: none"> write a proposal outlining how to improve the energy efficiency of a given building 	<ul style="list-style-type: none"> given the energy efficiency of a given building and knowledge of thermal resistance values of building materials, identifying at least five areas where the efficiency of a given building can be improved and the recommended procedures. <p><i>Assessment Tool</i> <i>Assessment Framework: Research Process, CTSRES</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	50

MODULE CON3080: ENERGY-EFFICIENT HOUSING (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Orientation</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> identify the factors that have contributed to more energy efficient housing describe the construction techniques that are used in energy efficient buildings list and describe the materials that are used to improve the energy efficiency of a building define the term R factor describe the ways heat can enter or escape from a building describe corrective measures that can be undertaken in existing buildings to improve energy efficiency identify and describe passive and active heating and cooling systems research the effects of landscaping on the energy efficiency. 	
<p>Implementation</p>	<ul style="list-style-type: none"> analyze an existing structure to estimate the heat loss through ceilings, walls, doors and windows prepare a proposal for an existing building outlining the work to be done to improve efficiency and its cost-effectiveness. 	<p>If possible, use a computer program to assist with the calculations.</p>

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Concept	Specific Learner Expectations	Notes
Assessment <ul style="list-style-type: none"><li data-bbox="207 453 391 516">• Career Information<li data-bbox="207 575 391 638">• Career Preparation	<i>The student should:</i> <ul style="list-style-type: none"><li data-bbox="488 453 1125 554">• identify the employment and business opportunities related energy efficient research and design<li data-bbox="488 575 1125 638">• maintain a record of completed activities within a portfolio.	

