Appendix C

CURRICULUM COMMITTEE CHECKLIST

NAME OF PROGRAM: ENERGY TECHNOLOGY  Date: 2-24-12

Step 1 Reviewed change at division meeting.  

Step 2 Presented as informational item at Division Chair Meeting(s) and checked if it affects other departments. Like programs must meet with Division Chairs on all affected campuses (North Mankato and Faribault).

Step 3 Instructional Dean reviewed and indicated need for Curriculum Committee approval.

Step 4 Advisory Committee approval indicated in meeting minutes if necessary. Minutes provided to Curriculum Committee.

Step 5 Curriculum Committee made recommendations (changes, additional approvals, etc.). If no, skip to Step 7.

Step 6 Committee’s recommendations completed. (Skip if not applicable.)

Step 7 Curriculum Committee approved.

Step 8 Minutes and necessary materials provided to VP of Academic Affairs.

Step 9 Vice President of Academic Affairs approved.

Step 10 President’s approval for all changes requiring MnSCU approval.

Signature: [Signature]

Date: 3/31/2
# Appendix A

## New Course or Course Change Proposal Form

<table>
<thead>
<tr>
<th>Date of Proposal:</th>
<th>February 3, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author:</td>
<td>RYAN LANGEMEIER</td>
</tr>
<tr>
<td>Proposal Type:</td>
<td>New Course</td>
</tr>
<tr>
<td></td>
<td>Modify Course</td>
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<td>Delete Course</td>
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<tr>
<td>Contact for the</td>
<td>RYAN LANGEMEIER</td>
</tr>
<tr>
<td>Course:</td>
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</tbody>
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- **Course Designator, Number and Title:** BDET 1220 Building Analyst
  
- **Number of Credits:** 3
  
- **Prerequisites:** BDET 1110 Studio I, BDET 1130 Materials and Methods

**Course Description:** This course will provide an understanding of technical standards for home performance and weatherization retrofit. The course will provide an introduction to building performance as it relates to the residential sector. The student will be introduced to the building shell components, HVAC systems, combustion zone and blower door testing. In addition, the student will be aware of the auditing process and customer relations. This course will follow the Building Performance Institute (BPI) standards and content for building analyst and envelop professional. Prerequisites: BDET 1110 Studio I, BDET 1130 Materials and Methods.

<table>
<thead>
<tr>
<th>Grading Method:</th>
<th>Grade</th>
<th>YES</th>
<th>Pass/Fail</th>
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<tr>
<td>Scheduling:</td>
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<td>Fall</td>
<td>Yes</td>
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<td>On Demand</td>
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<td>No</td>
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<td>Spring</td>
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<td>Summer</td>
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<td>Alternate Years</td>
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<td>Variable</td>
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<thead>
<tr>
<th>Instructional Type:</th>
<th>Lecture</th>
<th>Lab</th>
<th>Lecture/Lab</th>
<th>Internship</th>
<th>Seminar</th>
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<tbody>
<tr>
<td>Class Maximum:</td>
<td>24</td>
<td></td>
<td>2 / 1</td>
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<td></td>
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**Is this Course Proposed as a Liberal Arts and Sciences Course:** No

**If Yes, Which MnTC Area/Areas (http://www.mntransfer.org) Will it Fulfill?**

**Is This Course a Requirement/Elective for a Specific Program or Programs?** Yes

**If So, Which** BUILDING DESIGN AND ENERGY TECHNOLOGY
<table>
<thead>
<tr>
<th>Program(s)?</th>
</tr>
</thead>
</table>

Describe What is Changing/Being Added, and the Rationale:
Revise course credits to read: Three (3) credit course
Teaching course for first time, Spring 2012. Content can be delivered within a three (3) credit course.

What Impact Will This New Course or Change Have on Other Programs or Areas? NONE

> Attach Common Course Outline to this Form
Building Analyst
Common Course Outline

Course Information
Organization South Central College
Developers Ryan Langemeier, PhD
Revised Date 1/13/2012
Course Number BDET 1220
Department Building Design and Energy Technology
Potential Hours of Instruction 64
Total Credits 3

Description
This course will provide an understanding of technical standards for home performance and weatherization retrofit. The course will provide an introduction to building performance as it relates to the residential sector. The student will be introduced to the building shell components, combustion zone and blower door testing. In addition the student will be aware of the auditing process and customer relations. This course will follow the Building Performance Institute (BPI) standards and content for building analyst and envelop professional. Prerequisites: BDET 1110 Studio I, BDET 1130 Materials and Methods.

Types of Instruction

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<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
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<tr>
<td>Lab</td>
<td>32</td>
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Prerequisites
BDET 1110 Studio I
BDET 1130 Materials and Methods

Exit Learning Outcomes

Institutional Core Competencies

1. Personal, social and ethical responsibility
2. Civic knowledge and engagement-local and global
3. Ethical reasoning and action
4. Foundations and skills for lifelong learning
5. Intellectual and practical skills
6. Teamwork and problem solving
7. Analysis and inquiry
8. Critical and creative thinking
9. Written and oral communication
**Competencies**

1. **Demonstrate an understanding of principles of energy and building science.**
   **Learning Objectives**
   a. Demonstrate an understanding BPI standards
   b. Define the building as a system.
   c. Define materials that are sustainable.

2. **Understand the building analyst terminology.**
   **Learning Objectives**
   a. Explain energy conservation.
   b. Identify energy audit.
   c. Demonstrate an understanding of home performance test.

3. **Demonstrate an understanding of building construction**
   **Learning Objectives**
   a. Explain different framing types.
   b. Identify the thermal boundary
   c. Identify the building shell.

4. **Demonstrate an understanding of the building weak points.**
   **Learning Objectives**
   a. Understand the transmission of heat loss.
   b. Demonstrate an understanding of air leakage heat loss.
   c. Demonstrate an understanding of moisture intrusion.

5. **Identify the energy auditing process.**
   **Learning Objectives**
   a. Define the role of an energy auditor.
   b. Demonstrate an understanding of the owner’s responsibility.
   c. Demonstrate an understanding of the BPI standards.
   d. Apply energy auditing process to other sustainable standards- i.e. LEED and Energy Star; describe the communication process to the building owner.

6. **Demonstrate the understanding of transmission heat lost.**
   **Learning Objectives**
   a. Demonstrate an understanding of weighted R-values
   b. Identify insulation types.
   c. Demonstrate an understanding of insulation applications.

7. **Demonstrate an understanding of the building shell.**
   **Learning Objectives**
   a. Identify the thermal boundary
   b. Understand the air barrier/vapor barrier application.
   c. Demonstrate an understanding of the drainage plain

8. **Understand the testing of the building shell**
   **Learning Objectives**
   a. Demonstrate an understanding of air leakage testing.
   b. Demonstrate an understanding of blower door testing.
   c. Demonstrate an understanding of Combustion Appliance Zone testing
   d. Demonstrate an understanding of BPI testing standards.
9. Demonstrate to conduct a field test.

Learning Objectives
a. Demonstrate an understanding of zone pressure.
b. Identify building shell inspection process.
c. Demonstrate an understanding of safety and appliance checks.

10. Demonstrate an understanding of health and safety factors.

Learning Objectives
a. Demonstrate an understanding of moisture concerns.
b. Identify carbon dioxide factors.
c. Demonstrate an understanding of environmental issues.

11. Demonstrate an understanding of the energy auditing process.

Learning Objectives
a. Demonstrate an understanding of BPI auditing standards.
b. Demonstrate an understanding of auditing applications.
c. Apply auditing findings to BPI standards.
Appendix A

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<tr>
<td>Course Designator, Number and Title:</td>
<td>BDET 1260 Special Topics in Environmental Design</td>
</tr>
<tr>
<td>(i.e.: ACCT 1800, Business Law)</td>
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<td>Number of Credits:</td>
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This course will provide an understanding of addressing surrounding environmental parameters. These parameters may result when devising plans, programs, policies, buildings or products. The course will also provide an introduction to the human-designed environment. This introduction will relate to interdisciplinary areas such as architecture, urban planning, and product design and sustainability issues. Prerequisites: BDET 1110 Studio I.

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Describe What is Changing/Being Added, and the Rationale:
New Course offering.

From the removal of one (1) credit from BDET 1220 Building Analyst, a one credit course is needed. Special Topics in Environmental Design will provide an understanding of addressing surrounding environmental parameters.

What Impact Will This New Course or Change Have on Other Programs or Areas? NONE

> Attach Common Course Outline to this Form
Special Topics in Environmental Design
Common Course Outline

Course Information
Organization South Central College
Developers Ryan Langemeier, PhD
Revised Date 1/13/2012
Course Number BDET 1260
Department Building Design and Energy Technology
Potential Hours of Instruction 16
Total Credits 1

Description
This course will provide an understanding of addressing surrounding environmental parameters. These parameters may result when devising plans, programs, policies, buildings or products. The course will also provide an introduction to the human-designed environment. This introduction will relate to interdisciplinary areas such as architecture, urban planning, and product design and sustainability issues. Prerequisites: BDET 1110 Studio I.

Types of Instruction

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Prerequisites
BDET 1110 Studio I

Exit Learning Outcomes
Institutional Core Competencies

1. Personal, social, and ethical responsibility
2. Civic knowledge and engagement-local and global
3. Intercultural knowledge and competence
4. Ethical reasoning and action
5. Foundations and skills for lifelong learning
6. Intellectual and practical skills
7. Team work and problem solving
8. Analysis and inquiry
9. Critical and creative thinking
10. Written and oral communication

Competencies
1. Develop an understanding of the role of the design professional in society.
   Learning Objectives
   a. Demonstrate an understanding of the design professionals roles.
2. Establish basic understandings about the design process.
   Learning Objectives
   a. Demonstrate the nature of design decisions.
   b. Analysis the processes that are critical to successful design.
   c. Identify the factors that influences design.
   d. Formulate design solutions.

3. Provide design experiences whereby the student is motivated to express his/her creativity and can assess his/her personal interest in and commitment to the design professions.
   Learning Objectives
   a. Articulate a creative expression to the design experience.
   b. Students will explore the meaning of design and planning in everyday places.
   c. Apply critical analysis skills to interpreting design challenges.

4. Understand the interplay between environmental conditions and human behavior, as manifest in everyday experience.
   Learning Objectives
   a. Demonstrate an understanding of preference and choice according to physiological, psychological, social, political, and economics.
   b. Understand the inter-relatedness of all things and the importance of systems thinking to solve complex design problems.
   c. Demonstrate an understanding of environmental factors.