NUMER OF CREDITS: 2 (1 lecture, 1 lab)

COURSE TITLE: Insulation, Ventilation, Vapor Barriers, & Drywall

CATALOG DESCRIPTION: Insulation and improved construction methods provide an important measure of energy conservation. Students will learn insulation types and values, the importance of vapor barrier and its proper placement, drywall application, taping and texture.

AUDIENCE: Carpentry I students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

Area: by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: Desire to learn through a combination of lecture and hand-on activities. Career interest in the building construction trade.

LENGTH OF COURSE: One semester

THIS COURSE IS USUALLY OFFERED:
Every other year [ ] fall [x] spring [ ] summer [ ] undetermined [ ]

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Improve writing skills with the completion of required written assignments.
   b. Improve mathematical skills calculating linear measurements, dimensions, area, and volume measurements.
   c. Improve reading skills with the completion of required reading assignments.
2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Interpretation of blueprints and building product specifications as they apply to construction methods and techniques.
   b. Demonstration by individuals to calculate statistics into current building situations.
   c. Decision making processes that involve recalling facts and specifics about given situations or problems encountered in building construction, evaluating the situation, and reaching a conclusion.

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Group problem solving, collaborative projects and individual demonstrations.
   b. Individual classroom assignments and interactive lectures.

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Working in a team with persons of different race, gender, and cultural background.

TOPICS TO BE COVERED:
1. Types of insulation and their application.
2. R values of common building materials and insulation materials.
3. U values of common building materials and insulation materials.
4. The principles of conduction, convection, and radiation.
5. Condensation and how to control.
6. Attic ventilation systems and their function.
7. Vapor barriers and their function.
8. Types of drywall.
9. Drywall application.

LIST OF EXPECTED COURSE OUTCOMES:
1. identify types of vapor barrier
2. identify types of insulations
3. develop an understanding of R-values
4. calculate R-values for common building materials
5. identify types of ventilation products
6. identify products used for sound control
7. explain decibel ratings
8. explain sound transmission
9. identify types of drywall
10. identify types of drywall compound
11. identify drywall tape
12. identify drywall corner bead
13. identify tools used in application of drywall compound
14. measure, mark, and cut drywall
15. demonstrate use of a utility knife and drywall saw to cut drywall
16. measure and mark drywall for electrical boxes
17. demonstrate use of drywall square to measure and mark drywall
18. identify tools for applying drywall compound
19. apply drywall compound using the appropriate tools
20. install corner bead on a drywall outside corner
21. apply drywall tape to drywall joints
22. install drywall using a screw gun
23. install drywall using a hammer and drywall nails
24. install fiberglass insulation
25. install rigid foam insulation
26. sand drywall joint compound
27. apply drywall texture
28. develop an understanding of radon gas

LEARNING/TEACHING TECHNIQUES used in the course are:
- Collaborative Learning
- Problem Solving
- Student Presentations
- Interactive Lectures
- Creative Projects
- Individual Coaching
- Lecture
- Films/Videos/Slides
- Demonstrations
- Other (describe below)
- Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
- Reading
- Tests
- Oral Presentations
- Individual Projects
- Textbook Problems
- Worksheets
- Collaborative Projects
- Lecture
- Individual Presentation
- Demonstration
- Other (describe below)
- Lab

EXPECTED STUDENT LEARNING OUTCOMES:
1. Describe the types of insulation materials available today.
2. Describe methods of controlling moisture problems.
3. Demonstrate general procedures for installing blanket, loose fill, and rigid insulation.
4. Select appropriate areas for insulation in a given structure.
5. Summarize the principles of conduction, convection, and radiation.
6. Explain the use of vapor barriers and demonstrate proper application.
7. Explain the principles of attic ventilation and identify common ventilation systems.
8. Identify types of drywall.
10. Identify tools used for drywall finishing.
11. Demonstrate proper techniques for finishing drywall.
**Veteran Services:** Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

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*The information in this course outline is subject to revision.*