

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 9/23/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: 01/28/11 Date revised 09/23/14

4. Department/discipline: Electric Utility Technicians

5. Department(s) endorsement(s): _____

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Residential Building Construction Techniques

Abbreviated course title (25 characters or less): _____

7. Course Designator: EUT 8. Course Level: 1056 9. 2XXX

10. Number of Credits: Lecture 2 Lab 1

11. Control Number (on site) 35 Control Number (online) _____

12. Catalog/Course description:

This course will cover basic home construction methods and techniques, as they relate to a buildings energy performance. This course will provide the basic knowledge required in understanding building methods that apply to the Home energy Audit field as well as better housing for healthier living environments. (Co-requisite: MATH 0020 Beginning Algebra or consent of instructor).

13. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s):

Co-requisite: MATH 0020 Beginning Algebra or consent of instructor

14. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Residential Energy, by John Krigger and Chris Dorsi.

Other textbooks, workbooks, guides, lab manuals, videos, guest lecturers, will be on the syllabus if applicable.

15. **Course Content** (Provide an outline of major topics covered in course)

I. Review of Useful Mathematics Concepts

- Measurement methods
- Area and volume calculations
- Electrical units
- Scientific notation
- Fractions

II. Energy Basics

- Understanding heat transfer

- Defining the thermal boundary
- Air barriers
- Energy and moisture
- III. Foundations
 - Slab on grade
 - Foundation wall designs
 - Insulation methods
 - Moisture control
 - Thermal breaks
- IV. Framing Methods
 - Post and Beam
 - Balloon framing
 - Stick framing
 - SIP Panels
- V. Roofing Designs
 - Rafter
 - Truss designs
 - Girders and Purlins
 - Roof decks
 - Material selection
- VI. Windows and Doors
 - Types
 - U values
 - Transmission
 - Installation and moisture control
- VII. Insulation
 - Types
 - Installation methods
 - R values
 - Moisture barriers
 - below grade challenges
- VIII. Sheeting and Siding
 - Types
 - Installation methods
 - Drainage plains
 - Air barriers
- IX. Utilities
 - Heating systems
 - Air conditioning systems
 - Gas supply
 - Water and Wells
 - Electrical service
- X. Safety
 - Construction safety methods
 - Personal Protection Equipment
 - Fall prevention
 - Fire and CO alarms
 - Electrical Safety

16. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Upon completion of this course the student will be able to:

- 1. Demonstrate proficient in Use of computer based construction aids.
- 2. Demonstrate the terminology and theory of home construction.
- 3. Demonstrate competency in reading technical text.
- 4. Demonstrate the ability to solve complex energy calculations
- 5. Show ability to solve problems in Home design and applications.
- 6. Utilize safety equipment and safety practices.

17. Minnesota Transfer Curriculum (MnTC): If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See www.mntransfer.org

Goal Area(s): _____

Goal and Outcomes: