MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. CRPT                          COURSE NUMBER:  1140

NUMBER OF CREDITS: 4  (1 lecture, 3 lab)

COURSE TITLE: Project Planning, Estimating, and Layout

CATALOG DESCRIPTION: Students in this class will estimate all material for the house project meet with sub-contractors, write bid specifications, and award the bids. Students will also locate boundary stakes, establish building corners, build batter boards, identify sewer elevations, and establish all elevations necessary for excavation. The class will also involve the students in the supervision of excavation of the building site, the layout and construction of forms for the footings, and pouring the concrete for the footings.

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 ☐ 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. Building codes, standards, and permits
2. Building specifications
3. Elements of a set of working plans (house plans)
4. Estimating materials
5. Subcontractors and scheduling
6. The bidding process
7. Zoning and building lots
8. Staking and laying out a residential house
9. Establishing elevations
10. Excavating for foundations
11. Forming for footings
12. Pouring concrete footings

LIST OF EXPECTED COURSE OUTCOMES:
1. estimate layout materials for residential house
2. estimate form materials for footings
3. estimate insulated concrete forms
4. estimate concrete
5. estimate rough framing materials
6. estimate exterior wall and roof finish materials
7. estimate insulation and vapor barriers
8. estimate drywall
9. estimate interior doors and trim
10. estimate exterior doors and windows
11. estimate overhead doors
12. estimate rough hardware
13. estimate finish hardware
14. estimate stair parts
15. estimate cabinets and built-ins
16. write bid specifications for house project
17. review plot plan subdivision
18. request bids from subcontractors
19. award subcontracts
20. identify local zoning regulations
21. identify aspects of site selection
22. obtain building permit
23. schedule subcontractors
24. locate lot lines
25. establish bench mark
26. establish set-backs from lot lines
27. stake building corners
28. lay out and erect batter boards
29. estimate materials excavation
30. supervise excavation
31. layout building lines
32. square building corners
33. building footing forms level
34. place steel reinforcing
35. request inspection from building inspector
36. pour concrete footings

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
- Worksheets
- Textbook Problems
- Individual Projects
- Group Problems
- Collaborative Projects
- Other (describe below)
- Papers
- Term Paper
- Portfolio

EXPECTED STUDENT LEARNING OUTCOMES:
1. Demonstrate an understanding of bid specifications and the bidding process.
2. Explain the role of subcontractors.
3. Demonstrate an understanding of zoning regulations, setbacks, and building permits.
4. Locate lot corner stakes and lot lines.
5. Lay out a given house on given lot size.
6. Survey grade elevations on a given lot and set foundation height elevation.
7. Supervise the excavation of a residential building project.
8. Set corner stakes, lay out building lines, and set forms for foundation footings.
9. Set steel reinforcement in footings according to building code requirements.

**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.*