MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE  
COURSE OUTLINE

DEPT.   CRPT                   COURSE NO.  2220

COURSE TITLE: Advanced Concrete Technology

CATALOG DESCRIPTION: This course is designed to give the student hands-on experience with laying out and squaring up foundation walls, and actual construction of various types of foundation structures for a residential home. Also this course covers designing concrete mixtures for specific uses, estimating, pouring consistencies, preparing sub-bases areas and building forms, handling, placement and finishing techniques for vertical and flatwork concrete pours are also included.

AUDIENCE: Second year carpentry students

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: First year carpentry, persons skilled in carpentry basics

LENGTH OF COURSE: 2 lecture, 3 lab credits

THIS COURSE IS USUALLY OFFERED: Spring Semester

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

1) ACADEMIC CONTENT: The student will attain knowledge in laying out buildings on-site, pouring concrete floors, walls, sidewalks, driveways.

2) THINKING SKILLS: The student will be asked to layout and install a full basement.

3) COMMUNICATIONS SKILLS: The student must be able to work with others in the process of constructing a foundation and pouring floors. Each student will be Foreman of the entire house project for one week

4) HUMAN DIVERSITY: The student should be aware of such situations as would be a problem with handicap assess ability
TOPICS TO BE COVERED: Various types of foundation materials, various types of floor systems, various concrete mixes and applications

LIST OF EXPECTED COURSE OUTCOMES:

01 Determine factors effecting good concrete
02 Construct poured basement concrete forms
03 Construct and Pour ICF Walls
04 Discuss building code factors
05 Determine crawl space needs and requirements
06 Install re-inforcement steel
07 Install brick ledges
08 Pour basement floors
09 Identify proper vibrating techniques
10 Design concrete mixes
11 Determine pour methods
12 Estimate concrete volumes
13 Identify proper soil compaction
14 Identify concrete placement tools and equipment
15 Install foundation anchors
16 Identify and install bearing wall locations
17 Form and pour driveways and sidewalks
18 Form and pour garage floors
19 Form and pour front stoop
20 Discuss wood foundations as an option
21 Seal coat exterior concrete surfaces
22 Identify various types of concrete additives
23 Design and install drain tile systems

LEARNING/TEACHING TECHNIQUES USED:

Collaborative Learning       Problem Solving
Interactive Lectures        Individual Coaching
Creative Projects           Films/Videos/Slides
Lecture                     Demonstrations
Lab
ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

Reading                 Tests
Collaborative Projects  Individual Projects
Papers                  Group Problems
Other: Be a Working Foreman

EXPECTED STUDENT LEARNING OUTCOMES: The student should be able to accomplish installation of a full basement and floor system, including excavation, foundation work, concrete and wood floor systems, aggregate selection, and backfill techniques.

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.

A Member of the Minnesota State Colleges and Universities System
An Affirmative Action Equal Opportunity Educator/Employer

The information in this course outline is subject to revision.