Fall 9-1-2020

CSTN 171.B01: Site Work, Foundations, and Concrete

John R. Freer
University of Montana, Missoula, john.freer@umontana.edu

THE UNIVERSITY OF MONTANA
COLLEGE OF TECHNOLOGY
DEPARTMENT OF INDUSTRIAL TECHNOLOGY

COURSE SYLLABUS
FALL 2020

COURSE NUMBER AND TITLE: CSTN 171 Site Work, Foundations, & Concrete

DATE REVISED: August 2018

SEMESTER CREDITS: 3

CONTACT HOURS PER SEMESTER:
Total Lecture & Lab Hours: 48
Lab Hours Imbedded within offsite learning
Summer 2020 Schedule: 8/31/20-9/27/20
Monday-Thursday 8:00AM-11:50AM TT11
Tuesday, Thursday 1:00PM-3:50PM TBD

PREREQUISITES: None

FACULTY: John Freer, Assistant Professor, Master CGP, LEED AP BD&C
E-Mail: john.freer@umontana.edu

Phone: 243-7668
Cell: 370-1660
Office: West Campus
Office Hours: By appointment or as posted on Faculty office door

RELATIONSHIP TO PROGRAM(S):
This course is in the first year of the two-year AAS Sustainable Construction Technology Degree program.

COURSE DESCRIPTION:
This course covers the process of distance measurement as well as the differential for site leveling and layout. The principles, equipment, and methods used to form and pour the most common methods of flat and vetical concrete are covered as well as the concrete curing process, composition and admixtures for various types of concrete, and includes practical hands-on practice in concrete placement and finishing.

STUDENT PERFORMANCE OUTCOMES:
Occupational Performance Objectives
Upon completion of this course, the student will demonstrate:

1. Identify various types of cement and describe their uses
2. Identify and understand concrete curing methods
3. Use Blueprint Information to locate and mark actual site location

4. Understand proper use of rotating laser level and how to use it to set building and site elevations
5. Understand and Design the most common forming systems for concrete placement
6. Perform volume estimates for concrete

STUDENT PERFORMANCE ASSESSMENT METHODS AND GRADING PROCEDURES:

Grading Scale:

90 - 100% = A
80 - 89% = B
70 - 79% = C
60 - 69% = D
0 - 59% = F

NOTE: Courses must be passed with a 'C minus (C-)' or greater to count toward degree/certificate requirements.

Grade Breakdown:

Tests and reports	50%
Attendance	10%
Participation	40%

Note:

1. Tests will be as required.
2. Safety glasses, hearing protection, hard hats and other PPE as required.

HOW VARIOUS ASSESSMENT METHODS WILL BE USED TO IMPROVE THE COURSE:

1. Student course evaluations
2. Peer feedback
3. Advisory committee feedback

REQUIRED TEXT:

Carpentry, 7th Edition, by Floyd Vogt (Required)
ISBN 9781133607366

Student Workbook, Carpentry 7th Edition (Highly Recommended)
ISBN 9781337798204

REQUIRED SUPPLIES: Calculator (Recommended-Construction Master Pro Calculator or App.)

ACADEMIC INTEGRITY: All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://www.umt.edu/SA/VPSA/index.cfm/page/1321.

DISABILITY ACCOMMODATION: Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at http://www.umt.edu/dss/ or call 406.243.2243 (Voice/Text).

NOTE: Faculty reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances.

COURSE OUTLINE:

1.0 Properties of Concrete
- 1.1 Concrete Materials and Mixtures
- 1.2 Concrete Curing Process
- 1.3 Concrete Additives

2.0 Building Layout
- 2.1 Leveling and Layout
- 2.2 Laying out Foundation Lines

3.0 Concrete Forming Systems
- 3.1 Footings and Vertical Walls
- 3.2 Flatwork
- 3.3 Concrete Reinforcement
- 3.4 Stairs and Specialty Forms
- 3.5 Insulation, Damp Proofing, & Termite Control

4.0 Estimating for Concrete
- 4.1 Concrete Volume
- 4.2 Volumes for Footings and Slabs
- 4.3 Volumes for Walls and Vertical Concrete
- 4.4 Volumes for Columns, Beams, and Cylinders