

## Course Syllabus

Course Title: **Civil Technology**  
Course Number: **CM F213**  
Credits: 3  
*Prerequisites:* CM F102 Methods of Building Construction  
Location: CTC 604 Barnette Street, Room 322  
Meeting Time: Mondays (9/XX -12/XX/2016) 6:00 – 9:00 pm

Instructor: Steven Geraghty P.E.  
Telephone: 590-7368  
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Department Contact: Galen Johnson, Coordinator Construction Management  
604 Barnette Street, Suite 320  
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Course Text: Construction Planning, Equipment and Methods, 8<sup>th</sup> Edition; Robert L. Peurifoy, Clifford J. Schexnayder, Aviad Shapira, and Robert L. Schmitt; McGraw-Hill

Course Description: CM F213 outlines elements of civil design, including soils and soil mechanics, foundations, roads, and utilities using local, state and federal regulations. Students will also be introduced to elements of construction surveying. (3+0)

This class introduces both design and construction elements associated with management of civil construction projects, including soils and soil mechanics, foundations, roads, site drainage, soil stabilization and utilities. Students will also be introduced to elements of lifting and rigging principles, excavation dewatering and other activities associated with civil work.

CM F213 topics include:

- General Topic - Safety procedures, University policies, course and lab procedures, emergency egress review
- Codes and Specifications - Local codes, design criteria, standard specifications, state and federal regulations
- Soils – Sampling, testing, properties and characteristics, compaction, stabilization
- Foundations - Shallow foundations, pile foundations, caissons
- Road Construction - Elements of road prisms, aggregate processing and pavements
- Utilities - Design elements and construction of water and sewer utilities
- Earthwork Analysis – Grading, cut & fill, cross-sections, sitework quantities and average haul analysis
- Construction Surveying - Initial layout, dimension control, road staking, utility staking, and elevation control.

Course Objectives: This course will provide entry-level construction managers an understanding of the fundamental elements of civil design and construction, including soils and soil mechanics, foundations, roads, aggregates, pavements, utilities and construction surveying in preparation for managing civil construction activities.

Student Learning Outcomes: Upon successful completion of the course, the student will be able to -

- Describe the importance and purpose of soils testing for civil projects.

- Define the properties and characteristics of soil types and how they relate to the construction process.
- Explain the different foundation types and their application.
- Describe the fundamental components of roads and streets, including structural fill, processed aggregates and pavements.
- Analyze plan and profile drawings and analysis of excavation and fill quantities.
- Describe the essential design elements and construction practices for installing water and sewer utilities.
- Perform an overall sitework analysis of a simple civil construction project.
- Perform basic surveying measurements associated with control of civil construction projects.

Outcome will be assessed by:

- Class Discussion/Participation
- Written Exercises
- Written Exams

Instructional Methods:

Class sessions will consist of lecture/discussions. Emphasis will be on realistic assignments that will further the student's understanding of field and office procedures and terminology within the civil engineering and surveying fields.

Course Calendar: See Schedule of Topics attached.

Course Policies and Procedures:

University Policies - Please review all university policies as written in the current UAF catalog.

- Attendance - Students are required to attend regularly and participate actively. Students are responsible for class work even if there is a legitimate excuse for their absence. Team Projects and Lab activities during class will not be repeated for the benefit of absentees.
- Cheating - Any means by which a student uses unauthorized assistance to prepare materials submitted as their own. Cheating is grounds for dismissal from the university. This includes the unauthorized use or exchange of computer files.
- Smoking – tobacco usage is not allowed on campus.
- ID Cards - Students should carry their UAF Student ID cards with them whenever they are on campus.

Department Policies

- Emergency Exits – In case of emergency, exit the room back into the main corridor. Exits may be reached by going either direction down the main corridor. Fire alarm pull stations and fire extinguishers are located at each end of the corridor.
- Food/Drink - Covered drinks are allowed, food is not.
- Grades - Final Grades will be posted to UAOnline.
- Name - Put your name on all papers/projects or you may not receive credit for it.
- Deadlines – Weekly assignments are due by the end of the following class day that they are assigned. Late work may be assessed 5 points per class period late.

Evaluation:

- Quizzes - two quizzes at 100 points each. **NOTE:** Make-up quizzes may be taken upon request during designated sessions.
- Exams - three exams at 150 points each. **NOTE:** Make-up exams may be taken upon request during designated sessions. If you miss the original exam you will only be eligible for the make-up exam.

- Homework assignments (200 points) – Text review questions and other relevant current industry topics will be assigned for submission and discussion at the following class meeting.
- Classroom attendance and participation is worth ten points per class. Students are responsible for classwork even if there is a legitimate excuse for their absence. Unexcused absences may result in the student's being dropped from the class or receiving a failing grade.

Grading Policy: All grades are determined by competency-based criteria evaluation. Students are evaluated primarily on individual performances versus by comparison with other students or normal curve distribution. Letter grades for the course will reflect the *Grading System and Grade Point Average Computation* policy stated in the current UAF catalog. Faculty initiated withdrawals for non-attendance, plagiarism, and disruptive behavior is per current UAF Catalog guidelines.

Grade Tabulation:

Assignments	200	Grading Scale	
Quiz #1	100		
Quiz #2	100	A	90%
Exam #1	150	B	80%
Exam #2	150	C	70%
Exam #3	150	D	60%
Participation	150		
Total	1,000		

Support Services: The CTC Student Assistance Center provides services that contribute to a successful learning experience and transition to a career. Services are available by appointment and on a walk-in basis. Staff at the center recognizes the unique concerns of adult and returning students. Services include preadmission advising, academic assessment and placement advising, financial aid information and application, and assistance with choosing a major. Ongoing academic advising, degree planning and course selection are available. For more information, contact Student Assistance, UAF Community and Technical College Campus Center, 604 Barnette Street, Fairbanks, Alaska 99701, telephone (907) 455-2851, or visit online at <http://www.ctc.uaf.edu/stuassist.html>.

Disability Services: UAF has a Disability Services office that operates in conjunction with CTC. Disability Services, a part of UAF's Center for Health and Counseling, provides academic accommodations to enrolled students who are identified as being eligible for those services. If you believe you are eligible, please visit <http://www.uaf.edu/chc/disability.html> on the web or contact CTC's Student Assistance and Advising Center (455-2800). You can also contact Disability Services on the Fairbanks Campus at (907) 474-7043, [fydso@uaf.edu](mailto:fydso@uaf.edu).

Title IX: University of Alaska Board of Regents have clearly stated in BOR Policy that discrimination, harassment and violence will not be tolerated on any campus of the University of Alaska. If you believe you are experiencing discrimination or any form of harassment including sexual harassment, misconduct or assault, you are encouraged to report that behavior. If you disclose sexual harassment or sexual violence to a faculty member or any university employee, they must notify the UAF Title IX Coordinator about the basic facts of the incident. Your choices for disclosure include:

- 1) You may confidentially disclose and access confidential counseling by contacting the UAF Health & Counseling Center at 474-7043;
- 2) You may access support and file a Title IX report by contacting the UAF Title IX Coordinator at 474-6600;
- 3) You may file a criminal complaint by contacting the University Police Department at 474-7721.

**Class 01 Sept 12, 2016**

Introduction: Class Schedule and Schedule  
Intro to Reading Plans

**Class 02 Sept 19**

Surveying Fundamentals w/Hands-on  
Instrument Familiarization  
Read: Chapter 4 & 5

**Class 03 Sept 26**

Intro to Soils  
Quiz #1: Surveying, Soils  
Review Quiz

**Class 04 Oct 03**

Site Drainage & Geosynthetics

**Class 05 Oct 10**

Water & Sewer Utilities

**Class 06 Oct 17**

Quiz #2 – Site Drainage, Geosynthetics,  
Water & Sewer  
Review Quiz  
Read: Chapter 14

**Class 07 Oct 24**

Aggregates and Agg. Processing  
Mid-term Exam Prep

**Class 08 Oct 31**

Mid-Term Exam  
Read: Chapter 15

**Class 09 Nov 07**

Review Exam, Intro to Roads & Streets,  
Pavements  
Read: Chapter 18

**Class 10 Nov 14**

Pavements and Pile Foundations

**Class 11 Nov 21**

Quiz #3: Pavements, Roads & Streets, Pile  
Foundations  
OSHA Trenching  
Read: Chapter 17

**Class 12 Nov 28**

Cranes, Rigging & Lift Planning  
Read: Chapter 3

**Class 13 Dec 05**

Earthwork Analysis & Mass Diagrams

**Class 14 Dec 12**

Quiz#4: Cranes & Rigging, OSHA  
Trenching, Earthwork Analysis & Mass  
Diagrams  
Exam Prep

**Class 15 Dec 19**

Final Exam