

**BCN 3727 CONSTRUCTION SITEWORK AND EQUIPMENT
SPRING 2023**

INSTRUCTOR

Adjunct Prof. Danny Garcia
Office: **Not available yet**
Phone: 305.797.3562
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Office Hours: By appointment on MS Teams

TIME AND LOCATION

5:00 PM – 6:15 PM Engineering Center 1107
All course materials will be uploaded on **FIU Canvas** by 3:30 PM every Friday prior

PRE-REQUISITES

GLY 1010- Intro to Earth Science; GLY 1010L-Intro to Earth Science Laboratory;
BCN 2210 – Construction Materials and Methods

CATALOG DESCRIPTION

Exposition and critical analysis of practical and sequential aspects of converting raw land to finished product. Course will define various steps and discuss equipment and techniques of accomplishment.

COURSE LEARNING OUTCOMES

In this course, the students will learn about the techniques and equipment to convert a raw land into a final civil facility (e.g., road, underground utility, bridge, and building). The students will learn about different sitework techniques, selection, and utilization of appropriate equipment for different activities. Upon completion of this course, students should be able to:

Course Learning Outcome (CLO)	SLO	Assessment
Understand the basic principles of soil mechanics and their impacts on construction processes and be able to assess different methods for improving soil characteristics.	8, 15	HW, Exam
Appraise appropriateness of earthmoving and excavation methods as well as construction equipment used for hoisting materials, erecting structures, and earth moving.	8	Exam
Analyze methods, materials, and equipment used to construct projects.	1, 2, 8	Term Project

Estimate the productivity of different construction equipment and evaluate equipment management techniques (economics, planning, cost estimation, and maintenance).	4, 5, 8	Final Exam
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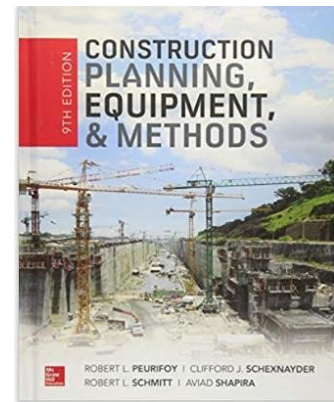
COURSE WEBSITE

FIU Canvas will be used in this course. The lecture notes, references, discussion blogs, etc., will be posted on Canvas.

TEXTBOOK

The following textbook (**Not Mandatory**) is used for this course:
Peurifoy, R., Schexnayder, C., Schmitt, R. and Shapira, A.
Construction Planning, Equipment, and Methods, 9th Edition,
McGraw-Hill.

This textbook is available at the FIU bookstore. It is also available from the online bookstores such as Barnes & Noble and Amazon.com.



Important note: not all the chapters in the required textbook will be covered in the course. Selected topics will be covered and presented in the class notes. In addition, materials from other references will be covered in the lecture materials.

OTHER REFERENCES

To achieve the learning objectives, we may use other resources (listed below) related to the topics covered in this course. The class notes and handouts will present the material extracted from the additional references. You **do not need to buy** these books.

1. Nichols, H.L., Jr. & Day, D.A., P.E., *Moving the Earth*, 6th Edition, McGraw-Hill, (ISBN: 978-0071502672).
2. Gransberg, D., Popescu, C., Ryan, R., *Construction Equipment Management for Engineers, Estimators, and Owners*, CRC Press.
3. Schaufelberger, J., *Construction Equipment Management*, 1st Edition, Prentice Hall.
4. *Construction Equipment and Methods: Planning, Innovation, Safety*, 1st Edition, Wiley.

INSTRUCTIONAL METHODS

Expect to be treated professionally in the same manner you are expected to behave professionally. We will meet for about a long hour lecture twice per week in which you are required to be an active participant. During class time, students may be assigned in-class activities to have hands-on practice of the material covered. There will be home assignments.

SCHOOL'S MISSION

The Department's mission is to provide enlightened leadership to the construction industry through its graduates; to increase and to improve the body of working knowledge; and to promote the interdisciplinary transfer of technology. The Department also strives to produce professional construction managers who are informed and participating citizens with a sense of civic duty and responsibility; persons with a sense of dignity whose actions express high moral and ethical standards; and professionals who strive to comprehend the impact of their work on their own lives as well as on the society in which they live.

ATTENDANCE POLICY

Students are expected to come to every class. All matters relative to attendance, including the make-up of missed work, are to be arranged between the student and the instructor. The in-class exercises during lectures must be submitted after each lecture, and they will become the records of the student's attendance during the semester. Any anticipated absences must be cleared with the instructor in advance, with a typewritten or word-processed memorandum stating the date and the reason for the absence or the absence will be considered unexcused. A student may have no more than two **(2)** unexcused absences. More than two unexcused absences will result in zero points for the Class Participation & In-Class Exercises grade.

DISABLED STUDENTS

Students with disabilities who may need special accommodation should contact the Office of Disabilities Services at (305) 348-3852 to make arrangements to accommodate their needs. These students are encouraged to inform the instructor at the start of the semester.

ACADEMIC MISCONDUCT

Acts of academic misconduct, e.g., cheating, plagiarism, misrepresentation, etc., will not be tolerated. A student found to be engaging in such behavior will be charged with academic misconduct according to the University's Student Academic Misconduct procedures, see FIU Student Handbook. Consequences can range from receipt of a failing grade in the class to expulsion from the University.

LECTURES

The detailed list of lecture topics is contained in the Course Schedule. The lectures provide the conceptual framework for the course and the student is expected to have a good understanding of the lecture and reading materials, whether they are present in the class or not.

ASSIGNMENTS

- All assignments will be handed out during the class on the hand-out dates.
- All assignments are due at 11:59 PM on the due dates.
- All assignments need to be submitted through CANVAS. We will discuss submittal thru hardcopies at first class.

- Late assignments will receive a mark deduction of 10% per day (including Saturdays, Sundays, and holidays). Assignments will not receive a grade if more than 3 days late.
- All home assignments are individual work. No group work is allowed.
- Only one side of the paper should be used. Assignments should be turned in word-processed format or handwritten legibly.
- Each page shall be numbered consecutively. Student name, Panther ID, course number, assignment number, and page X of Y (X=page #, Y=total number of pages) must appear at the top of each page.
- Professional presentation, good organization, and proper documentation are very important components of the homework assignment grade.

EXAMS

There are **three exams** in the course. All exams will be held in class. The exams will test the individual student's understanding of some of the principal concepts covered in the course. The exams cover material discussed in the lectures to the time of the exam. **No absences will be excused on the days of exams.**

PROJECTS

- Please refer to project handouts.

GRADING

- Class Participation & In-Class Exercises 10%
- Term Project 25%
- Assignments 20%
- Exams 1 & 2 25% (12.5% each)
- Final Exam 20%
- **Total 100%**

All grades will be determined pursuant to the following point values:

A	94-100	B	81-84	C	70-73
A-	89-93	B-	78-80	D	60-69
B+	85-88	C+	74-77	F	0-59

The decision to grade on a curve will be at the instructor's sole discretion and will be based on the performance of the entire class.

RIGHT TO REVISE

The instructor reserves the right to make revisions to any item in this syllabus, including, but not limited to any of the items mentioned in the notes above and the tentative schedule.

Florida International University
Moss Department of Construction Management

WEEK	DATE	TOPIC	TEXTBOOK	ASSIGNMENT
1	01/09/23	Syllabus Review, Introduction to the Course, Discussion of Class Project		
1	01/11/23	Introduction to Construction Sitework	Ch. 1	TBD
2	01/16/23	No Class		
2	01/18/23	Properties of Soil	Ch.3,4	TBD
3	01/23/23	Power Requirements of Equipment Part 1	Ch 6	TBD
3	01/25/23	Power Requirements of Equipment Part 2	Ch. 6	TBD
4	01/30/23	Dozers	Ch. 7	TBD
4	02/01/23	Sitework Safety Presentation		TBD
5	02/06/23	Exam 1		
5	02/08/23	Graders	Ch. 7	TBD
6	02/13/23	Scrapers	Ch 8	TBD
6	02/15/23	Loaders	Ch 9	TBD
7	02/20/23	Excavation Equipment & Hauling	Ch 10	TBD
7	02/22/23	Site Visit		
8	02/27/23	Spring Break		
8	03/01/23	Spring Break		
9	03/06/23	Soil Compaction	Ch 5	TBD
9	03/08/23	Cranes & Lifting Equipment	Ch 16	TBD
10	03/13/23	Aggregates	Ch 13	TBD
10	03/15/23	Class Project Update		
11	03/20/23	Exam 2		
11	03/22/23	Air Compressors & Pumps	Ch 18	TBD
12	03/27/23	Equipment Economics Part 1	Ch 2	TBD
12	03/29/23	Equipment Economics Part 2	Ch 2	TBD
13	04/03/23	Estimating		
13	04/05/23	Planning & Execution	Ch 3, Ch 19	TBD
14	04/10/23	Final Safety Observations		
14	04/12/23	Project Site Visit		
15	04/17/23	Team Project Presentation		
15	04/19/23	Team Project Presentation		
16	04/24/23	Final Course Review		
16	04/26/23	Final Exam		