

Course Syllabus

1. Course Number and Name

CE 414: Construction Engineering

2. Course Information

- Semester: Fall, 2018
- Schedule: TR, 2:00 pm – 3:15 pm
- Class Location: ESB-G78A
- Credit Hours: 3

3. Instructor Information

- Name/Position: Yoojung Yoon/Assistant Professor
- Office: ESB 529
- Phone: 304-293-9937
- Email: yoojung.yoon@mail.wvu.edu
- Office Hours: TR, 3:30 am – 5:00 pm

4. Teaching Assistant Information

TBD

5. Course Description

Introduction to the construction processes (e.g., construction planning, design, and construction). Construction site layout, earthmoving materials and operations, quantity takeoff, construction equipment and equipment selection, productivity improvement, construction methods and practice, wood/concrete/steel construction, and management of constructed facilities.

6. Prerequisites

None

7. Course Objectives

This course will introduce the students to the fundamental concept of construction engineering and the role of the engineer in the construction process. The course will incorporate instructor lectures, presentations from industry, and field trips. Students will be evaluated based on class participation, homework, and tests.

8. Expected Learning Outcomes – Upon successful completion of this course students will have:

Goals by Topic	Student Outcome
The basic techniques for planning, design, construction, and maintenance in construction projects	(b), (e)
An insight of the roles as designers, contractors, and project managers	(f), (g)
The ability to plan and analyze earthwork quantity estimation as well as apply the existing earthwork information for project scheduling and cost estimation	(b), (k)

Course Syllabus

The knowledge of recent construction methods and practice	(e), (h), (j), (k)
A fundamental knowledge of wood/concrete/steel construction	(e), (j), (k)
Analysis of equipment cost and productivity	(a)

9. Textbooks and Other Course Materials

- Stephens W. Nunnally. (2011). Construction Methods and Management, 8th edition, Prentice Hall, Upper Saddle River, New Jersey.

Note: **NOT REQUIRED**

- Mincks R. William and Johnston Hal. (2011). Construction Jobsite Management, 3rd edition, Delmar, Clifton Park, New York.

Note: **NOT REQUIRED**

- Additional reading material for selected topics in the course will be announced or posted in the WVU eCampus

10. Exams/Assignments/Quizzes

Performance will be evaluated based on exams, homework assignments, quizzes, and class participation. There are **three (3) OPEN-BOOK exams** in the course. 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, or included in the assigned readings up to the time of the exam. There are **five (5) assignments** to be completed individually. All students will be expected to make a reasonable effort to find answers on their own and hand in assignments in time. Collaboration among the students is encouraged, as long as the integrity of the student's individual work and contribution is maintained (i.e., copying and plagiarism will be severely penalized). There will be **five (5) CLOSED-BOOK quizzes** in class, based on the course material covered in class and/or assigned for the week. The score of one of the quizzes will be dropped.

Note: Delayed submission of the assignments will be scored with a 20% deduction. Under no circumstances will make-up exams be administered if students miss exams/quizzes. If students miss exams/quizzes due to authorized excused absences (e.g., medical or other similar hardships, family events restricted to wedding and funeral, and job interviews), the opportunity to take make-up exams will be given to the students at an alternate time. It is the student's obligation to contact the instructor before the examination so that appropriate arrange may be made.

11. Grading Policy

The breakdown of the final grade is:

Quizzes	15%
Assignments	15%
Exam No. 1	20%
Exam No. 2	25%
Final Exam	25%
Total	100%

Course Syllabus

There will be **no curve** for the final grade, only straight averages. The ranges for grades are as follows: **[90.0 and above/ A]; [80.0 – below 90.0/ B]; [70.0 – below 80.0/ C]; [60.0 – below 70.0/ D]; [Below 60.0/ F].**

12. Attendance Policy

Students are expected to attend all regularly scheduled class meetings although class attendance will not be used in grading. Class attendance is fundamental parts of the educational process and key factors in academic success. Students would benefit from attending the classes as supplemental lecture notes and important notices related to assignments, quizzes, and exams will be provided during class sessions only. Students who are absent without excuse from an announced quiz or examination take full responsibility for the academic results resulted from the absences. A student with an event (e.g., military leave, religious obligation, personal health emergencies, illness/death or wedding of family member, or job interviews) that interferes with quiz or examination times must notify the instructor in advance and provide verification documentation before it occurs in order to make up the quiz or examination.

13. Social Justice Statement

The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Disability Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see <http://diversity.wvu.edu>.

14. Academic Integrity/Honesty

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15. Adverse Weather Commitment

In the event of inclement or threatening weather, everyone should use his or her best judgment regarding travel to and from campus. Safety should be the main concern. If you cannot get to class because of adverse weather conditions, you should contact me as soon as possible. Similarly, if I am unable to reach our class location, I will notify you of any cancellation or change before class starts using MIX emails to prevent you from embarking on any unnecessary travel. If you cannot get to class because of weather conditions, I will make allowances relative to required attendance policies, as well as any scheduled tests, quizzes, or other assessments.

Course Syllabus

Tentative Course Schedule

Week	Topic	Readings
1 8/15 – 8/17	Introduction to Construction Engineering	
2 8/20 – 8/24	Construction Process I	
3 8/27 – 8/31	Construction Process I	
4 9/3 – 9/7	Construction Process II	Ch. 6 (CJM)
5 9/10 – 9/14	Construction Process II	Ch. 6 (CJM)
6 9/17 – 9/21	Construction Jobsite Layout	Ch. 6 (CJM)
7 9/24 – 9/28	Construction Jobsite Layout	Ch. 6 (CJM)
8 10/1 – 10/5	Earthmoving Materials and Operations	Ch. 2 (CMM)
9 10/8 – 10/12	Earthmoving Materials and Operations	Ch. 2 (CMM)
10 10/15 – 10/19	Earthwork Quantities	
11 10/22 – 10/26	Earthwork Quantities	
12 10/29 – 11/2	Construction Equipment (Excavating)	Ch. 3 (CMM)
13 11/5 – 11/9	11/6 No Class – General Election Construction Equipment (Excavating)	Ch. 3 (CMM)
14 11/12 – 11/16	Construction Equipment (Excavating) Construction Equipment (Loading & Hauling)	Ch. 3 (CMM) Ch. 4 (CMM)
15 11/19 – 11/23	Fall Recess	
16 11/26 – 11/30	Construction Equipment (Loading & Hauling)	Ch. 4 (CMM)
17 12/3 – 12/6	Construction Equipment (Loading & Hauling)	Ch. 4 (CMM)
18 12/10 – 12/14	Final Exam	

*CJM: Construction Jobsite Management, CMM: Construction Methods and Management

* Exam week 12/7-8 and 12/11-13

Course Syllabus

Coverages of Quizzes and Exams

Quiz-1: Construction Process I

Quiz-2: Construction Process II

Exam-I: Construction Process I – Construction Process II

Quiz-3: Jobsite Layout and Earthmoving Materials and Operations

Quiz-4: Earthwork Quantities

Exam-II: Jobsite Layout – Earthwork Quantities

Quiz-5: Construction Equipment (Excavating)

Final Exam: Construction Equipment (Excavating) – (Loading & Hauling)