

CSM 3363: Heavy Civil and Highway Construction Systems
Course Syllabus – Fall 2021

Instructor Information

Name: Dr. Soon-Jae “Jeff” Lee
E-mail: SL31@txstate.edu

Office: RFM 2213 Phone: 512-245-8525
Webpage: pave.wp.txstate.edu

Class Times and Place

Lectures: Monday & Wednesday, 12:30 – 1:50 pm (Lecture), RFM 4233

Office Hours: Monday & Wednesday, 9:00 - 11:30 am

Catalog Description

Heavy, Civil, and Highway Construction Systems (3-1) Selection, acquisition, and capabilities of heavy construction equipment are presented. Applications of economics to performance characteristics and production of equipment is discussed. Sector-specific construction management methods are covered, including unit price estimating, equipment fleet design, repetitive scheduling, and major components of highways, bridges, and engineered facilities. Prerequisite: Pre-construction or Instructor's Approval

Course Outcomes and Student Learning Outcomes (SLOs)

1. I can demonstrate a thorough understanding of the heavy, civil and highway construction processes. ([Program Outcome 2](#), [SLO 7](#), *analyze construction documents for planning and management of construction processes*)
 - Evaluation Method 1: Will be calculated by averaging individual scores of Test 1, question 33 (8 pts.) which deal with analyzing the profile view.
2. I can demonstrate a strong technical knowledge related to construction materials and processes including heavy, civil and highway construction terminology, materials, machines, and methods. ([Program Outcome 2](#), [SLO 8](#), *analyze methods, materials, and equipment used to construct projects*)
 - Evaluation Method 2: Will be calculated by averaging individual scores of Test 1, questions 1-20 (40 pts.) which deal with analyzing heavy civil and highway construction methods, materials, and equipment.
3. I can apply effective communication skills regarding the heavy, civil and highway construction. ([Program Outcome 3](#), [SLO 2](#), *create oral presentations appropriate to the construction discipline*)
 - Evaluation Method 3: Will be calculated by averaging individual score of group presentation.
4. I can apply modern technical knowledge to solve construction related problems. ([Program Outcome 6](#), [SLO 11](#), *apply basic surveying techniques for construction layout and control*)
 - Evaluation Method 4: Will be calculated by averaging individual scores of Test 2, questions 31 and 32 (20 pts.) which deal with mass diagram.

Textbook

Peurifoy, R.L., Ledbetter, W.B., and Schexnayder, C.J. (2011), Construction Planning, Equipment, and Methods, **Eighth Edition**, McGraw-Hill.

Time Commitment

Students should be prepared to spend 3-5 hours per week outside of class on assignments that will include: reading assignments and studying for tests.

Grading

The grading policy for this course is included:

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| • Homework, Quiz and Presentation | 40% |
| • Three exams (20% each) | 60% |

Grading Scale

A: 100 – 90; B: 89 – 80; C: 79 – 70; D: 69 – 60; F: < 60

Construction Major Code of Classroom Conduct

- Maintain integrity on all assignments and tests
- Attend all scheduled classes
- Be on time to class
- Inform instructor if you need to leave class early or will miss class

Construction Student Association (CSA)

It will also be helpful for students to join the Texas State chapter of the Associated Builders and Contractors (ABC), the Associated General Contractors (AGC) and the National Association of Home Builders (NAHB) to gain further insight into the construction industry through construction site tours and presentations made by professionals in the construction industry.

Accommodation Statement

Students with a documented disability should contact the instructor as soon as possible, to address proper accommodation needs.

Course Outline

Week	Topic(s)	Program Outcomes & SLOs
1	Syllabus and Course Introduction Ch. 1: Machines makes it possible	PO 2 SLO 8
2	Ch. 2: Equipment economics I Ch. 2: Equipment economics II	PO 2 SLO 7
3	Ch. 3: Planning for earthwork construction I Ch. 3: Planning for earthwork construction II	PO 6 SLO 11
4	Ch. 3: Planning for earthwork construction III Ch. 3: Planning for earthwork construction IV	PO 6 SLO 11
5	Exam 1	
6	Ch. 4: Soil and rock I Ch. 4: Soil and rock II	PO 2 SLO 8
7	Ch. 5: Compaction and stabilization equipment I Ch. 5: Compaction and stabilization equipment II	PO 2 SLO 8
8	Ch. 5: Compaction and stabilization equipment III Ch. 5: Compaction and stabilization equipment IV	PO 2 SLO 8
9	Exam 2	
10	Ch. 15: Asphalt mix production and placement I Ch. 15: Asphalt mix production and placement II	PO 2 SLO 8
11	Ch. 15: Asphalt mix production and placement III Ch. 15: Asphalt mix production and placement IV	PO 2 SLO 7
12	Ch. 16: Concrete and concrete equipment I Ch. 16: Concrete and concrete equipment II	PO 2 SLO 8
13	Exam 3	
14	Presentation – Special topics I Presentation – Special topics II	PO 3 SLO 2
15	Presentation – Special topics III Presentation – Special topics IV	PO 3 SLO 2

AIC-AC Certification Exam Required in CSM 4360

The three hundred- (300-) question, American Institute of Constructors (AIC) Associate Constructor (AC) Certification Exam is required in the Capstone course (CSM 4360). The Capstone course is to be taken within the last two (2) semesters before graduation, after its five (5) prerequisite courses have been completed: TECH 2190, CSM 4313, CSM 4361, CSM 4364, and CSM 4369. The AIC-AC Exam currently costs each student \$165 and is commonly administered the first Saturday in November and the first Saturday in April. All exam candidates will receive a link to the PDF version of the AC Study Guide upon registration (paperback versions are available for purchase on Amazon). Students may, additionally, register for an AC Exam Online Study Course (\$25) by going to: www.professionalconstructor.org and clicking on “Certification” from the main menu. **TAKE THIS EXAM SERIOUSLY!**