



**School of Applied Engineering and Technology
Department of Engineering Technology
Construction Engineering Technology Program
Course Syllabi**

Course Number and Name: CET 313- Construction Procedures I

Credits and Contact Hours: Credits - 3; Contact Hours – 1.5 Hour Lectures, twice a week

Course Coordinator's Name: John A. Wiggins, P.E., Senior University Lecturer and Program Coordinator

Text Book and Supplemental Materials

Construction Methods and Management 8th edition, S.W. Nunnally, Prentice Hall, 8th Edition, 2010

Specific Course Information

a. Brief Description of the content of the course

An introduction to heavy construction practices. Emphasis is on construction equipment, site preparation, earthmoving, compaction, dewatering, piles, drilling and blasting, and tunneling. Case studies in heavy construction are used.

b. Prerequisites or Co-requisites: Co- requisite: CET 317, Construction Computing

c. Course Status: Required Course

Specific Goals for the Course

a. Specific Outcomes of Instruction

By the end of the course students should be able to:

1. Understand the principles of construction economics and how they apply to the costs of owning and operating construction equipment.
2. Determine whether it is better to own, rent or lease a piece of construction equipment.
3. Understand the operation and employment of various types of construction equipment use in heavy construction projects
4. Apply the techniques used in estimating the production of various types of construction equipment use in heavy construction projects
5. Apply job management techniques for the use of equipment in heavy construction.
6. Understand the principles of rock excavation
7. Understand the production of aggregate, concrete and asphalt mixes and the paving and surface treatments of these materials
8. Demonstrate the use of Excel to perform data analysis.

b. Relation to Student Outcomes

The Course Learning Outcomes support the achievement of the following CET Student Outcomes (Criterion 3) and Specific Program requirements:

Student Outcome A –an ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline

Course Learning Outcome – Understand the various construction equipment for the project, their characteristics and how they are utilized in the project.

Student Outcome B – an ability to design systems, components, or processes meeting specific needs for broadly-defined engineering problems appropriate to the discipline

Course Learning Outcome – Students will be able to identify the best construction equipment to use in the construction project.

Program Outcome b – Estimation of costs, estimation of quantities, and evaluation of equipment for construction projects.

Course Learning Outcome – Students will be able to perform estimates of the various aspects of work and equipment use in the construction project.

Program Outcome f – Performance of economic analysis and cost estimates related to design, construction, and maintenance of systems associated with construction engineering

Course Learning Outcome – Students will be able to determine how the various equipment will be used in the project based on the construction contracts, documents, and codes

Program Student Outcome G – Selection of appropriate construction material and practices.

Course Learning Outcome – Students will be able to determine how the various equipment will be used and the method of construction in the project based on the construction contracts, documents, and codes

Student Outcome h – Application of appropriate principles of construction management, law, and ethics.

Course Learning Outcome – Students will be able to determine how the various equipment will be used and the method of construction in the building project based on the construction contracts, documents, and codes

Brief list of topics covered

Topics covered include heavy construction equipment economics, earthmoving operations, excavating and lifting, loading and hauling, compaction and finishing, rock excavation, production of aggregates, concrete and asphalt mixes, paving and surface treatments, compressed air and water systems.

