

BCN 5874
EQUIPMENT AND METHODS FOR HEAVY CONSTRUCTION
COURSE SYLLABUS AND SCHEDULE

Credit Hours: 3

COURSE DESCRIPTION

This course teaches non-engineering students the theory and practice of heavy equipment utilization and construction methods through analysis of costs through production rates, optimizing crew, and equipment. It also includes an introduction to planning and executing a construction project.

PREREQUISITES BY ACADEMIC STANDING

Senior or graduate status.

STUDENT OUTCOMES

To teach non-engineering students the theory and practice exploiting the assets provided by heavy equipment on a heavy / highway construction project. Students will learn to choose the best equipment for specific tasks through knowledge of the abilities, strengths, weaknesses and typical uses of each relevant piece of heavy construction equipment, plus the ability to compute the important numbers for each piece of equipment. These numbers include production rates and costs of operation and maintenance of each piece of equipment.

COURSE OBJECTIVES

To demonstrate the knowledge and understanding of topics listed Goals by means of successfully presenting a paper on a subject of importance and relevance to today's construction industry, as well as correctly answering questions posed in the form of tests, quizzes, and assignments.

INSTRUCTOR

Dr. R. Edward Minchin Jr.
302 Rinker Hall
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(O) 352-273-1153

GRADUATE TEACHING ASSISTANT

Lourdes Ptschelinze
336 Rinker Hall
E-mail: gatrgl@ufl.edu
(O) N/A
(C) 262-2859

OFFICE HOURS

Minchin: T: 4:30 – 6:00 pm
R: 5:00 – 6:30 pm
As needed, if in the office, and by
appointment

Lourdes: M: 2:00 – 4:00pm
W: 2:00 – 3:00pm
As needed, if in the office, and by
appointment

CLASS MEETING: Tuesday – Rinker 215; 7th & 8th Periods
 Thursday – Rinker 215; 9th & 10th Periods

CLASS WEBSITE: Sakai

TEXTBOOKS

Required: None

TENTATIVE COURSE SCHEDULE

DATE	DAY	TOPIC
1/10	T	Introduction Industry Overview
1/12	R	Site Work
1/17	T	Site Work
1/19	R	Earthwork Problems Question & Answer / Catch Up
1/24	T	Introduction to Excavation Bulldozers
1/26	R	Excavators
1/31	T	Draglines
2/2	R	Scrapers
2/7	T	Scrapers
2/9	R	Videos, Excavation Summary, and Exam Review
2/14	T	Exam No. 1 (Thru Excavation)
2/16	R	Choosing the Right Equipment for the Project Guest Lecturer – Christine Beaudoin, Kiewit
2/21	T	Hauling Material – Productivity, Routes, and Number of Trucks
2/23	R	Guest Lecturer – Jeff Nelson, Nelson Construction
2/28	T	Exam No. 2
3/1	R	Basics of Bridge Construction Guest Lecturer - Ted Holmes, Archer-Western Construction Co.

3/6	T	Spring Break
3/8	R	Spring Break
3/13	T	Foundations
3/15	R	Foundations
3/20	T	Exam No. 3 (Through Foundations and Bridge Construction)
3/22	R	How to Build a Road Asphalt Paving
3/27	T	Asphalt Paving
3/29	R	The basic differences of owning, leasing or renting equipment Depreciation of Equipment
4/3	T	Depreciation of Equipment
4/5	R	Construction of Utilities – Traditional
4/10	T	Construction of Utilities – Trenchless Technology
4/12	R	Equipment maintenance Equipment scheduling (keeping track of where the equipment is and how it is charged to projects)
4/17	T	Tires - how they impact costs
4/19	R	Computing the hourly costs of operating equipment
4/24	T	Exam No. 4 - Cumulative

GRADING	<u> </u> %
Assignments	25.0
Quizzes	25.0
Exams (4@ 12.5% each)	<u>50.0</u>
Total	100.0

GRADING SCALE

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Numeric Grade	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0-59
Quality Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0

ON LINE COURSE EVALUATION PROCESS

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online @ <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>

ATTENDANCE POLICY

Absences

Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first class meeting.

In general, acceptable reasons for absence from class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved.

You cannot attend classes unless you are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors.

If you do not attend at least one of the first two class meetings of a course or laboratory in which you are registered, and you have not contacted the department to indicate your intent, you can be dropped from the course. You must not assume that you will be dropped, however, if you fail to attend the first few days of class. By posting a notice in the department office, the department will notify you if you have been dropped from the course or laboratory. You can request reinstatement on a space-available basis if you present documented evidence.

The university recognizes the right of the individual professor to make attendance mandatory. After due warning, professors can prohibit further attendance and subsequently assign a failing grade for excessive absences.

CLASS PARTICIPATION

Class Participation is not to be confused with class attendance. Neither should these points be considered “giveaway points, or points guaranteed to be added to the students’ grades. In fact,

one must earn the points. The instructor will endeavor to create an atmosphere of “give-and-take” with the class members, and will reward those students who add to that atmosphere. One can have a record of perfect attendance and receive a grade of “1” or “2” out of the possible five points earned for Class Participation. If a student is a disruption, or has a negative impact on the class, it is possible to get none of the five points. Points are awarded for asking relevant questions of the instructor, answering questions posed by the instructor, bringing in items of interest for the class to see, read or hear, etc. Just coming to class and never offering anything to the class discussion will result in a very low Class Participation score.

MAKEUP EXAM POLICY

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ACADEMIC INTEGRITY

“As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”* It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>”

ACCOMMODATION FOR STUDENTS WITH DISABILITIES

Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UF COUNSELING SERVICES

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- § University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- § SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- § Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- § Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

SOFTWARE USE

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

CLASS NOTES

- NO ASSIGNMENTS SUBMITTED AFTER CLASS WILL BE ACCEPTED FOR GRADING. ASSIGNMENTS SUBMITTED AFTER CALLED FOR, BUT BEFORE THE INSTRUCTOR LEAVES THE ROOM WILL BE ELIGIBLE FOR HALF CREDIT.**
- All assignments which require additional paper must be submitted on engineering paper or acceptable graph paper and, if there is more than one total sheet of paper to be submitted, they must be stapled or paper-clipped together.**
- If you have a conflict with an examination, arrangements must be made with the instructor BEFORE the exam if there are to be alternate arrangements made (see Makeup Exam Policy above).
- Professor reserves the right to adjust the grade scale. Under no circumstances will a student's grade be lowered by this adjustment.
- Exams and in-class assignments: Students are responsible for all material presented in class, all reading assignments, guest lectures, site visits, and handouts distributed in class or via the class website.
 - Exam No. 4 will be comprehensive.
- Notes will not usually be posted on the website.