

Syllabus CE 453 Earthwork Design

Department of Civil & Environmental Engineering, West Virginia University

Faculty Dr. Radhey Sharma, Professor

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Office Hours: Tuesday 10 am to 11 am, Wednesday: 3pm to 4 pm; also by appointment

Pre-requisites: CE 351 Introductory Soil Mechanics

Text Book: Das, B.M. and Sobhan K. (2018) *Principles of Geotechnical Engineering, 9th Editions*, Cengage Learning (limited chapters)

Additional Reference: Duncan, J.M .and Wright, S.G., *Soil Strength and Slope Stability*, 2005 Wiley

Schedule: Tuesday & Thursdays, 11:00 am to 12:15 pm, ESB Room 501

Scope: The course will introduce the use of soil mechanics principles to the analysis, design, and construction of earth slope structures. An introduction to slope stability analysis, excavations, and landslides; earth reinforcement, and ground improvement techniques will be presented.

Topics: Overview of Slopes & Stability Concepts
Soil Shear Strength
Infinite Slope Stability Analysis
Finite Slope Stability Analysis
Rotational Slope Stability Analysis
Slope Stabilization & Repair
Case Studies

Grading: Final grades will be based on “A” = 90 to 100%, “B” = 80 to 90%, “C” = 70 to 80 %, “D” = 60 to 70%, and “F” less than 60%. The instructor reserves the right to curve up.

Homework	10%
Exam #1 (September 20, 2018)	30%
Exam #2 (October 25, 2018)	30%
Exam #3 (December 06,2018)	30%
TOTAL	100%

Attendance: Students are expected to attend all class periods.

Examinations: There will be three examinations paced with the topics covered during the semester. There will be no comprehensive examination for this course. The examinations will challenge the student’s understanding of the topics covered by using:

- 1) Method problems which include numerical analysis problem type, and
- 2) Conceptual based problems challenging the student’s understanding of theoretical concepts and practical knowledge.

General Comment on Work Submission:

Students are expected to submit calculations / graphs / sketches which are reasonably neat, complete yet concise; orderly and well organized in format.

Academic Conduct:

West Virginia University Academic Integrity: The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at http://studentlife.wvu.edu/office_of_student_conduct/student_conduct_code. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.

ABET Student Outcomes:

Expected Learning Outcomes - Upon successful completion of this course students will:

Goals by topic	Outcome
Apply knowledge of math, science, and engineering	A
Design civil engineering projects and components of projects	C
Identify, formulate, and solve civil engineering problems	E
Knowledge of contemporary issues	J
Use techniques, skills, and modern engineering tools	K

Final Comments

- Good Luck with the course!
- Talking during class: Please do not disrupt class. Please respect class members.
- Questions: Encouraged during class.
- Homework related questions will be addressed during office hours
- Electronic communication devices such as mobile phones, laptops, etc. should not be used during the class and exams.

Social Justice Statement

West Virginia University is committed to social justice. West Virginia University is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect and inclusion.