

Fall 2020 – Course Announcement

Advanced Soil Mechanics—CEEN 410/510

3 Hours Credit, Room TBA, Time: MW 10:00-11:15 PM

Instructor: D.V. Griffiths

Coolbaugh Hall: CO252, Tel: 273 3669, d.v.griffiths@Mines.EDU

Office Hours: T 2-4 pm and by appointment

Web: www.mines.edu/~vgriffit

Advanced soil mechanics concepts and theories as applied to analysis and design in geotechnical engineering. The course has an emphasis on numerical and analytical methods.

Course Outline:

- a Seepage:** Review; Principle of effective stress; Confined flow; Flow nets; Method of Fragments; Introduction to finite difference and finite element solutions to steady seepage problems.
- b Settlement and Consolidation:** Review; Amount and rate of settlement; Boundary/initial conditions; Finite difference and finite element solutions; Sand drains.
- c Slope Stability Analysis:** Review of shear strength; Analytical Methods; Charts; Methods of Slices; Finite element slope stability software.
- d Introduction to Limit Analysis:** Review of limit theorems; Upper and lower bound solutions; Finite Element Limit Analysis (FELA).

Advanced Soil Mechanics–CEEN 410/510

3 Hours Credit, Room CO 210, Time: MW 3:00-4:15 PM

Instructor: D.V. Griffiths

CO 252, Tel: 273 3669, d.v.griffiths@Mines.EDU

Office Hours: T 2-4 PM and by appointment

Web: www.mines.edu/~vgriffit

Prerequisite: A first course in Soil Mechanics.

Additional reading:

“Advanced Soil Mechanics”, B.M. Das, Second Edition, Taylor and Francis, 1997

“An Introduction to Geotechnical Engineering”, R.D. Holtz, W.D. Kovacs and T.C. Sheahan, Second Edition, Prentice Hall, 2011

“Soil Mechanics (SI Edition)”, by T.W. Lambe and R.V. Whitman, Wiley, 1969

Assessment:

Exam 1	0.4
Exam 2	0.4
Coursework	0.2

Exam dates:

Mid-semester	TBA
End-semester	TBA

Coursework will consist of four computational assignments, plus one additional project for students enrolled at the 500-level.

Practice questions will be handed out throughout the course but will not be graded.