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:


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.