Advanced Soil Mechanics 1

Syllabus

This class deals with shear strength, deformation characteristics and consolidation theory. The shearing behaviors of both cohesive soils and cohesionless soils are discussed.. The theories for settlement estimation in elastic, consolidation and creep are given with their relevant aspects. The theories of pore water pressure development by external loading and its dissipation (consolidation) in low pervious cohesive soils are also presented. In this class, recent advances in soil mechanics are provided, together with emphasis on rigorous and reasonable application of soil mechanics to practical problems.

Table of Contents

(3) Immediate Settlements in Cohesionless Soil (HW#3)

(4) Stress - Strain Behavior (Stiffness) of Soils

(5) Nonlinear Pseudo-Elastic Model

2.3 Rate-Dependent Settlements (HW#4)

2.4 Pore Pressure Developed during Undrained Loading (HW#5)

2.5 Consolidation Theory (HW#6)

- **Course Grading**

Attendance : 10 %

Homework : 15 %

Midterm : 35 %

Final Exam : 40 %

- **Textbook and Major references**

T.W.Lamb and R.V.Whitman (1979), "Soil Mechanics," John Wiley and Sons.

K.Terzaghi, R.B.Peck and G.Mesri (1996), "Soil Mechanics and Engineering Practice," 3rd ed. John Wiley and Sons.

R.D.Holtz and W.D.Kovacs (1981), "An Introduction to Geotechnical Engineering," Prentice Hall.

B.M.Das (1983), "Advanced Soil Mechanics," McGraw Hill.

- Homepage : http://geolab.snu.ac.kr/

- TA : Kahyun Park (Tel : 02-880-8733)