CE206 Jan. 3:0

Earth and Earth Retaining Structures

Instructor

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Department: Civil Engineering

Course Time:

Lecture venue:

Detailed Course Page:

Announcements

Brief description of the course

The course covers determination of (i) earth pressures on retaining structures, (ii) stability of slopes and earthen dams in the presence of ground water seepage and earthquake forces. It also covers design of braced excavation for deep cuts and excavation in ground.

Prerequisites

B. Tech in Civil Engineering.

Syllabus

Lateral earth pressures: Active, passive and at rest, Rankine and Coulomb theories. Passive earth pressure with curved rupture surfaces, Arching, Stability of retaining walls, Stability of vertical cuts. Braced excavations, Anchored sheet piles, Stability of infinite slopes, Stability of finite slopes. Methods of slices-Swedish, Morgenstern and Price methods. Stability analysis of earth and rockfill dams.

Course outcomes

The students is trained for (i) determining earth pressures on retaining structures, (ii) computing stability of slopes and earthen dams in the presence of ground water seepage and earthquake forces, and (iii) design of

braced excavation for deep cuts and excavation in ground.

Grading policy

50% for the final Exam

50% for the internal assessment with at least two sets of tests and assignments

Assignments

Resources

Terzaghi, K., Theoretical Soil Mechanics, John Wiley, 1965.

Taylor, D.W., Fundamentals of Soil Mechanics, John Wiley, 1948.

Bowles, J.W., Analysis and Design of Foundations, McGraw-Hill, 4th and 5th Ed., 1988 & 1996.

Lambe, T.W. and Whitman, R.V., Soil Mechanics, Wiley Eastern Limited, 1976.