

CIVE 311. GEOTECHNICAL MECHANICS.

Credits: 4

Offered by: Civil Engineering (Faculty of Engineering)

Terms offered: Fall 2025

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Description

The origin and formation of soils. Soil classification systems and phase composition in soils. Stress states in geotechnical materials. Total stresses, pore fluid pressures and effective stresses. Terzaghi's concept of effective stresses. Time-dependent influences of pore pressure development during loading. Water flow in porous media. Darcy's law. Laboratory and field measurement of hydraulic conductivity. Hydraulic conductivity of soil composites. Deformation of geomaterials. Elastic deformations and consolidation behaviour. Failure of soils. The Mohr-Coulomb criterion. Stress paths. Dilatancy, Taylor's interpretation of stress dilatancy and applications.

- (4-2-6)
- Prerequisite: CIVE 207

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