UE Advanced soil mechanics

ECTS
3 crédits

Composante
UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)

Période de l'année
Automne (sept. à dec./janv.)

- **Langue(s) d'enseignement:** Anglais
- **Ouvert aux étudiants en échange:** Oui
- **Code d'export Apogée:** PAX9GIAI

Présentation

Description

The modern numerical methods now currently used in geomechanics allow to take into account advanced constitutive relations for geomaterials. The objective of these lectures is to present the most used constitutive models at an international level : isotropic and anisotropic non#linear elasticity, associated and non#associated elasto#plasticity, visco#elasto#plasticity. First the most important mechanical properties to be described for soils are presented (compressibility, dilatancy, drained/undrained shear failure, ...). Then the general framework to build constitutive relations is given : definition of the constitutive functional, the incremental formalism for constitutive relations. The next chapter is devoted to non#linear elasticity with examples like "hyperbolic" model. Then it is dealt with the elasto#plasticity and the visco#elasto#plasticity with examples like "Cam#Clay" model. Finally we introduce the incrementally non#linear relations with applications like liquefaction phenomenon, instabilities and bifurcations in natural media, landslides and rockfalls modelling.

Heures d'enseignement

UE Advanced soil mechanics - CM	CM	20h

Période : Semestre 9

Infos pratiques

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