

# CIVL 2013 SOIL MECHANICS (WSTC ASSOCD)

**Credit Points** 10

**Legacy Code** 700245

**Coordinator** Abbas Ranjbar ([https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/](https://directory.westernsydney.edu.au/search/name/Abbas%20Ranjbar/))

**Description** This unit is an introductory unit covering the use of soil, and the water in it, as an engineering material. It will provide students with a basic understanding of the physical and mechanical properties of soils, simple soil testing methods to characterise soil strength and deformation behaviour and how to apply basic techniques to assess the hydro-mechanical response of soils subjected to loading. Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

**School** Eng, Design & Built Env

**Discipline** Civil Engineering

**Student Contribution Band** HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 2 subject

**Pre-requisite(s)** MATH 1017

**Equivalent Subjects** CIVL 2011 - Soil Engineering CIVL 2012 - Soil Mechanics

**Restrictions** Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain the concepts of soil mechanics
2. Apply soil mechanics concepts to soil engineering problems
3. Analyse the response of soil and the water in it when subjected to loading
4. Apply basic laboratory tests to measure the engineering properties of soils
5. Solve simple design problems in soil engineering

## Subject Content

1. Soil formation
2. Clay mineralogy
3. Soil classification
4. Soil compaction
5. Effective stress in soils
6. Flow of water in soils
7. Flow nets and the engineering effects of water movements
8. Consolidation and settlement
9. Stress increases in soils
10. Shear strength in soils
11. Lateral stresses in soils

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/ Group Task
Quiz	30 minutes each	15	N	Individual
Practical	Equivalent to 1,500 words each	15	N	Both (Individual & Group)
Intra-session Exam	1 hour	20	N	Individual
Final Exam	2 hours	50	N	Individual

Teaching Periods

## Quarter 2

### Nirimba Education Precinct

#### Composite

**Subject Contact** Abbas Ranjbar ([https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/](https://directory.westernsydney.edu.au/search/name/Abbas%20Ranjbar/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL2013\\_22-Q2\\_BL\\_C#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL2013_22-Q2_BL_C#subjects))