

# CIVL 2016 CIVIL AND SUBSTRUCTURE

**Credit Points** 10

**Legacy Code** 301220

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

**Description** This unit provides an overview of civil construction and associated sub-structure works comprising footings, pilings and slabs and the high costs associated with these elements. Through site surveys, site assessments and design proposals students will apply their developing understanding of bulk excavation, site drainage, service mains (electricity, gas, water, sewerage, data), roads and retaining walls to real world examples. Students will also examine public infrastructure such as ports, tunnels, bridges and highways to deepen their knowledge base. Additionally, in order to further understand the high costs involved in sub structure works, students will learn to identify problems faced on sites including rock, chemically-aggressive soils and water-logged sites.

**School** Eng, Design & Built Env

**Discipline** Construction 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

## Learning Outcomes

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

1. Undertake preliminary surveys of a project site
2. Conduct assessments of site conditions relating to foundation condition, gradient and drainage
3. Design the road pavement requirements, site drainage and services installation for a proposed building project
4. Select appropriate footing and substructure systems for different construction sites

## Subject Content

1. Properties of rock and soil
2. Site establishment (construction sheds and storage, signage, hoardings and barricades, traffic control)
3. Understanding the principles of subdivision siteworks (surveying, bulk excavation and fill, site drainage and stormwater detention, retaining walls)
4. Road construction
5. Service mains (stormwater, potable & grey water, sewerage, electricity, gas & data)
6. Conventional sub-structures (shallow footings, slabs, piling)
7. Specialised sub-structures (basements, tunnels, marine and riverine sub-structures)

## 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	60 minutes each (in 3 separate weeks)	45	N	Individual
Applied Project	2,000 words (for the group with designated individual components)	55	N	Both (Individual & Group)

Teaching Periods

### Autumn

#### Penrith (Kingswood)

##### Day

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL2016\\_22-AUT\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL2016_22-AUT_KW_D#subjects))

#### Parramatta - Victoria Rd

##### Day

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