

# CIVL 3002 CONCRETE STRUCTURES (UG)

**Credit Points** 10

**Legacy Code** 300736

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

**Description** This subject covers the basic elements of structural behaviour and design with reinforced and pre-stressed concrete. Students will learn to analyse the section capacity of reinforced concrete beams, slabs, and columns, and design simple suspended structures. The subject places a strong emphasis on the process of structural design.

**School** Eng, Design & Built Env

**Discipline** Structural Engineering

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

Check your fees 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 3 subject

**Pre-requisite(s)** CIVL 2007

**Co-requisite(s)** CIVL 3014

**Equivalent Subjects** CIVL 3001 - Concrete Structures (UG)

**Assumed Knowledge**

Knowledge of engineering mechanics and statics.

## Learning Outcomes

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

1. Discuss the properties of fresh and hardened concrete
2. Apply limit state design concepts to concrete elements and whole structures
3. Determine design actions for and analyse concrete structures to obtain internal design action effects
4. Design concrete elements based on evaluated design action effects
5. Apply relevant Australian Standards for concrete structures and loading in the designing of concrete structural elements
6. Analyse and interpret the behaviour of concrete structural elements subjected to appropriate design loads

## Subject Content

Materials, the design process, Standards

Beams: flexural strength analysis, flexural behaviour, shear, deflections and cracking.

Basic pre-stressed design.

Columns: ultimate strength, slenderness effects.

Slabs: simplified design, simple analysis for deflections.

## 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.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Report	approx. 20 pages	30	N	Group	Y
Intra-session Exam	1 hr - Closed book	20	N	Individual	Y
Final Exam	2 hrs - Closed Book	50	N	Individual	Y

Teaching Periods

## Autumn (2025)

### Penrith (Kingswood)

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=CIVL3002\\_25-AUT\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL3002_25-AUT_KW_1#subjects))

### Parramatta City - Macquarie St

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=CIVL3002\\_25-AUT\\_PC\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL3002_25-AUT_PC_1#subjects))

## Sydney City Campus - Term 1 (2025)

### Sydney City

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=CIVL3002\\_25-SC1\\_SC\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL3002_25-SC1_SC_1#subjects))

## Sydney City Campus - Term 3 (2025)

### Sydney City

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=CIVL3002\\_25-SC3\\_SC\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL3002_25-SC3_SC_1#subjects))