

# CIVL 3014 STRUCTURAL ANALYSIS

**Credit Points** 10

**Legacy Code** 300732

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

**Description** This subject introduces students to the aspects of structural analysis of trusses, beams and frames. It covers the first-order elastic analysis of statically determinate and indeterminate structures. This course aims to teach students to master basic skills in structural analysis as well as skills in using computer software to analyse complex structures.

**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

**Equivalent Subjects** CIVL 3015 - Structural Analysis

## Learning Outcomes

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

1. analyse statically indeterminate structures using force and displacement methods (including slope deflection and moment distribution methods)
2. analyse trusses, beams and frames to obtain internal forces and displacements using the matrix method
3. operate current structural analysis software packages

## Subject Content

Slope-deflection method for beam and frame analysis

Moment distribution method for beam and frame analysis

Matrix method for truss analysis

Matrix method for beam analysis

Matrix method for frame analysis

Introduction to second-order analysis of 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.

Type	Length	Percent	Threshold	Individual/Group Task
Quiz	30 mins for tutorial quiz and 50 mins for practical quiz	30	N	Individual

Numerical Problem Solving	Tutorial and Practical Solutions	10	N	Individual
Final Exam	2 hours, closed book	60	N	Individual

Teaching Periods

## Sydney City Campus - Term 3 (2023)

### Sydney City

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=CIVL3014\\_23-SC3\\_SC\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL3014_23-SC3_SC_1#subjects))

## Autumn (2024)

### Penrith (Kingswood)

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL3014\\_24-AUT\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL3014_24-AUT_KW_1#subjects))

## Parramatta City - Macquarie St

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL3014\\_24-AUT\\_PC\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL3014_24-AUT_PC_1#subjects))

## Sydney City Campus - Term 2 (2024)

### Sydney City

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=CIVL3014\\_24-SC2\\_SC\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL3014_24-SC2_SC_1#subjects))