# CIVL 7006 ADVANCED STRUCTURAL ANALYSIS

**Credit Points** 10

**Legacy Code** 300594

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

**Description** This subject will introduce students at postgraduate level to structural analysis of trusses, beams, frames and plates. It covers the slope defection method and matrix method for analysis of beams, trusses and frames, and the bending and buckling analysis of beams and plates under various loading conditions. The theories learned in classes will be reinforced in practical sessions by using computer software packages.

**School** Eng, Design & Built Env

**Discipline** Civil Engineering

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

**Level** Postgraduate Coursework Level 7 subject

**Incompatible Subjects** LGYA 5845 - Linear and Nonlinear Analysis of Structures LGYA 5976 - Advanced Structural Engineering LGYA 5837 - Numerical and Finite Element Methods

**Restrictions**

Students must be enrolled in a postgraduate program.

**Assumed Knowledge**

Students must have knowledge in engineering mathematics, engineering mechanics at intermediate level and structural analysis at fundamental level.

## Learning Outcomes

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

1. improve the skills to analyse beams and frames using the slope deflection method
2. enhance the ability to use the matrix method to analyse complex structures
3. analyse bending and buckling of beams and plates
4. use software packages to analyse structures

## Subject Content

Slope deflection method for beams and frames
Matrix method for statically indeterminate structures
Bending of beams and plates
Buckling of beams and plates

## 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 |
|---|---|---|---|---|
| Final Exam | 2 hours | 55 | N | Individual |
| Intra-session Exam | 1.5 hours | 25 | N | Individual |
| Quiz | 1 hour | 10 | N | Individual |
| Numerical Problem Solving | Tutorial question solutions | 10 | N | Individual |

Teaching Periods

## Autumn (2022)

### Parramatta City - Macquarie St

#### Day

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

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=CIVL7006_22-AUT_PC_D#subjects)

## Autumn (2023)

### Parramatta City - Macquarie St

#### On-site

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

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=CIVL7006_23-AUT_PC_1#subjects)