# ELEC 1006 ENGINEERING COMPUTING

**Credit Points** 10

**Legacy Code** 300027

**Coordinator** Mazin Aouf (https://directory.westernsydney.edu.au/search/name/Mazin Aouf/)

**Description** Engineering computing is an introduction to using computation to solve real problems. The subject also aims to instil sound principles of program design that can be utilised in many subjects throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to numerous engineering problems and are encouraged to implement solutions using an algorithmic approach.

**School** Eng, Design & Built Env

**Discipline** Other Engineering And Related Technologies

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

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

**Level** Undergraduate Level 1 subject

**Equivalent Subjects** ELEC 1008 Engineering Computing (WSTC) ELEC 1007 Engineering Computing (WSTC Assoc Deg)

**Assumed Knowledge**

Basic knowledge in use of computers and Windows operating system.

## Learning Outcomes

On successful completion of this subject, students should be able to:
1. Utilise a typical software development environment.
2. Develop solutions to problems using an algorithmic approach.
3. Apply data structures of a common programming language, to translate an algorithm into a coded program. These programming structures should include the following as a minimum - Selection and Repetition statements - Functions - 1 & 2 dimensional Arrays - File processing
4. Implement basic features of data manipulation and graphing using a spreadsheet program, such as EXCEL.

## Subject Content

Spread sheet applications - Spread sheet operations
Spreadsheet applications - Spreadsheet functions and macros
Spread sheet applications - Solving engineering problems using spreadsheets
Structured programming - Introduction to programming environment
Structured programming - Decision structures
Structured programming - Repetition structures
Structured programming - Modular programming
Structured programming - Exchanging data with external files
Problem solving & algorithm development will be embedded in each section

## 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 |
|---|---|---|---|---|---|
| Quiz | 1 hour each | 60 | N | Individual | Y |
| Final Exam | 2 hours | 35 | N | Individual | Y |
| Participation | 20 hours | 5 | N | Individual | Y |

Prescribed Texts

- Moore, H 2012, MATLAB for engineers, 3rd edn, Pearson Prentice Hall, Bostonm MA

Teaching Periods

## Autumn (2025)
### Penrith (Kingswood)
**On-site**
**Subject Contact** Upul Gunawardana (https://directory.westernsydney.edu.au/search/name/Upul Gunawardana/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ELEC1006_25-AUT_KW_1#subjects)

### Parramatta City - Macquarie St
**On-site**
**Subject Contact** Mazin Aouf (https://directory.westernsydney.edu.au/search/name/Mazin Aouf/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ELEC1006_25-AUT_PC_1#subjects)

## Sydney City Campus - Term 1 (2025)
### Sydney City
**On-site**
**Subject Contact** Peter Lendrum (https://directory.westernsydney.edu.au/search/name/Peter Lendrum/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ELEC1006_25-SC1_SC_1#subjects)

## Sydney City Campus - Term 3 (2025)
### Sydney City
**On-site**
**Subject Contact** Peter Lendrum (https://directory.westernsydney.edu.au/search/name/Peter Lendrum/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=ELEC1006_25-SC3_SC_1#subjects)