

# ELEC 1006 ENGINEERING COMPUTING

**Credit Points** 10

**Legacy Code** 300027

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

**Description** Engineering computing is an introduction to using computation to solve real problems. The unit also aims to instil sound principles of program design that can be utilised in many units 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 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 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.

Item	Length	Percent	Threshold	Individual/Group Task
Quiz	1 hour each	60	N	Individual
Final Exam	2 hours	35	N	Individual
Participation	20 hours	5	N	Individual

Prescribed Texts

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

Teaching Periods

## Summer A

**Parramatta City - Macquarie St**

**Day**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=ELEC1006\\_22-SUA\\_PC\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ELEC1006_22-SUA_PC_D#subjects))

## Autumn

**Penrith (Kingswood)**

**Day**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=ELEC1006\\_22-AUT\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ELEC1006_22-AUT_KW_D#subjects))

**Parramatta City - Macquarie St**

**Day**

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

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## Sydney City Campus - Term 2

**Sydney City**

**Day**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=ELEC1006\\_22-SC2\\_SC\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ELEC1006_22-SC2_SC_D#subjects))