

# MATH 1028 STATISTICAL DECISION MAKING

**Credit Points** 10

**Legacy Code** 300700

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

**Description** Statistical Decision Making introduces students to various statistical techniques for analysing and interpreting data. Presentation of the content will emphasise the correct principles and procedures for collecting and analysing data, using statistical software. Topics include describing different sets of data, probability distributions, statistical inference, and simple linear regression and correlation. The open-source statistical software package R will be introduced and used in this subject. Analysing and interpreting data is crucial in many sectors of modern economy and society. Thus, basic competencies in statistics, data collection and data analysis are essential employability skills in virtually every profession.

**School** Computer, Data & Math Sciences

**Discipline** Statistics

**Student Contribution Band** HECS Band 1 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 1 subject

**Equivalent Subjects** COMP1014  
MATH1033

**Incompatible Subjects** MATH1003  
MATH1025  
MATH1032  
MATH1030  
ECON1006  
MATH1012

## Learning Outcomes

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

1. Analyse data using traditional methods or modern resampling methods
2. Use technology to assist in performing statistical analysis
3. Recognise the limitations of data collection methods and demonstrate awareness of the influence of these limitations on inference
4. Choose the correct statistical method for analysis and correctly interpret the results
5. Analyse data using traditional methods or modern resampling methods
6. Recognise the limitations in data collection methods and have awareness in the role of data collection on inference

## Subject Content

Collecting and describing data

Probability

Confidence intervals and hypothesis tests

Simple linear regression

## 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/<br>Group Task |
|--------------|---------------------------------------------|---------|-----------|---------------------------|
| Short Answer | 50 minutes                                  | 11      | Y         | Individual                |
| Short Answer | 15 minutes<br>(per<br>workshop<br>exercise) | 24      | N         | Individual                |
| Report       | 15 hours per<br>student                     | 15      | N         | Group                     |
| Final Exam   | 2 hours                                     | 50      | Y         | Individual                |

**Prescribed Texts**

- Lock, R. H., Lock, P. F., Morgan, K. L., Lock, E. F., & Lock, D. F. (Eds.). (2013). Statistics : unlocking the power of data. Hoboken, N.J.: Wiley.

**Teaching Periods**

## Autumn (2024)

### Campbelltown

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH1028\\_24-AUT\\_CA\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH1028_24-AUT_CA_1#subjects))

### Penrith (Kingswood)

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH1028\\_24-AUT\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH1028_24-AUT_KW_1#subjects))

### Parramatta - Victoria Rd

**On-site**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH1028\\_24-AUT\\_PS\\_1#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH1028_24-AUT_PS_1#subjects))