

# MATH 2011 MAKING SENSE OF DATA

**Credit Points** 10

**Legacy Code** 301032

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

**Description** The unit builds on the basic statistical concepts introduced in first year, and also prepares students for broader application of statistics for those majoring in science or business. Topics include hypothesis testing; analysis of categorical data; analysis of variance; non-parametric methods; re-sampling (cross validation/bootstrapping); Introduction to visual data analysis; simple Multivariate statistics and sampling and design.

**School** Computer, Data & Math Sciences

**Discipline** Statistics

**Student Contribution Band** HECS Band 1 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 2 subject

**Pre-requisite(s)** MATH 1028 OR  
MATH 1003 OR  
MATH 1030

**Assumed Knowledge**

Basic Statistics.

## Learning Outcomes

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

1. Apply the fundamentals of statistical hypothesis testing;
2. Use analysis of variance methods to solve practical problems;
3. Utilize re-sampling methods to analyse data (cross validation / bootstrapping);
4. Employ statistical analysis of data using simple multivariate statistics;
5. Introduce the area of visual data analysis;
6. Implement the above statistical methods using R.

## Subject Content

1. Hypothesis Testing
2. Sampling and Design
3. Nonparametric Methods
4. Simple Multivariate Statistics
5. Re-Sampling
6. Introduction to visual data analysis

## 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/<br>Group Task |
|---------------------------------------|--|---------|-----------|---------------------------|
| Mid semester Test                     | 60 minutes (Including upload time)   | 20      | N         | Individual                |
| Computing Test on R                   | 60 minutes (including upload time)   | 20      | N         | Individual                |
| Group Assignment (incl. Presentation) | To consist of 5 or so pages of text and computer output, equivalent to approx. 2000 words as a poster presentation | 20      | N         | Group                     |
| Final Examination                     | 2 hours  | 40      | N         | Individual                |

Prescribed Texts

- Field, A. P., Miles, J., & Field, Z. (2012). Discovering statistics using R. Thousand Oaks, Calif: Sage.

Teaching Periods

## Spring Campbelltown

**Day**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH2011\\_22-SPR\\_CA\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH2011_22-SPR_CA_D#subjects))

## Parramatta - Victoria Rd

**Day**

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH2011\\_22-SPR\\_PS\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH2011_22-SPR_PS_D#subjects))