



School of Population Health  
**AMS 2009/2010**

# Quantitative Research Methods

## Intermediate Epidemiology & Biostatistics

*Block 1 Coordinator:*

Dr Melanie Matheson  
[mcmat@unimelb.edu.au](mailto:mcmat@unimelb.edu.au)

School of Population Health  
Faculty of Medicine, Dentistry & Health Sciences  
Level 1, 723 Swanston Street,  
Carlton VIC 3053 Australia

### **Purpose and goals:**

This is an introduction to quantitative research design and a revision of the methods, meaning and limitations of statistical analyses in medical research. At the completion of this subject the student will be able to understand the key issues in designing and writing up their AMS projects.

### **Core content, skills and perspectives**

Skills to be developed through the subject will include developing:

1. Perspective on the role of research through the AMS year and your AMS project in equipping you to function in the rapidly changing world of clinical medicine and in providing you with a “taste” of life in the world of research.
2. Understanding how to frame a research question.
3. Understanding the basis of research design and recognising the key design issues in your own research projects.
4. Understanding association and causation, and the difference between these
5. Awareness of the issues around data collection and quality
6. Knowledge of the basic types of data and the appropriate ways to statistically summarise
7. Understanding of basic statistics and a statistical package.
8. Understanding and applying the concepts of hypothesis testing, confidence intervals and statistical significance.
9. Understanding of the role of evidence based medicine
10. Library database and endnote skills

**Assessment:** Assessment will be based on your research proposal (80%) and a brief submission based on the ethics component (20%). Once the research proposal has been developed, students will submit it for feedback (mid-August). An assessment of the final submitted proposal will contribute 80% to your assessment for this subject. An assignment of up to 1000 words will be assessed for the Ethics component (20%) and will involve writing-up your choice of one of the take home tasks after they have been discussed in the Ethics workshops (submit end August).

**Block 1**

<b>Monday 13<sup>th</sup> July</b>		
Lecture Theatre 2, 221 Bouverie St	9:15-9:45am	Introduction/Welcome Associate Professor Katie Allen
Lecture Theatre 2, 221 Bouverie St	10:00-11:00am	Epi Lecture 1 – Study Design Dr Melanie Matheson
Lecture Theatre 2, 221 Bouverie St	11:30-12:30pm	Stats Lecture 1 - Dr Lyle Gurrin
Lecture Theatre 2, 221 Bouverie St	1:30-2:30pm	Stats Lecture 2 - Dr Lyle Gurrin
Lecture Theatre 2, 221 Bouverie St	3:00-4:30pm	Introduction to library, electronic databases & internet resources
<b>Tuesday 14<sup>th</sup> July</b>		
Lecture Theatre 2, 221 Bouverie St	9:30-10:30am	Stats Lecture 3 – Dr Lyle Gurrin
Lecture Theatre 2, 221 Bouverie St	11:00-12:00pm	Research BioEthics Dr Ali Brookes
Location – see tute list	1:00-3:00pm	Tutorial Group A – Tute 1 Group B – Tute 2 Group C – Tute 3 Group D – Tute 4
<b>Wednesday 15<sup>th</sup> July</b>		
Lecture Theatre 2, 221 Bouverie St	11:00-12:00pm	Epi Lecture 2 – Research Question Dr Melanie Matheson
Location – see tute list	1:00-3:00pm	Tutorial Group A – Tute 2 Group B – Tute 3 Group C – Tute 4 Group D – Tute 1
<b>Thursday 16<sup>th</sup> July</b>		
Location – see tute list	10:00-12:00noon	Tutorial Group A – Tute 4 Group B – Tute 1 Group C – Tute 2 Group D – Tute 3
Location – see tute list	2:00-4:00pm	Tutorial Group A – Tute 3 Group B – Tute 4 Group C – Tute 1 Group D – Tute 2
<b>Friday 17<sup>th</sup> July</b>		

<b>Tute</b>	<b>Times</b>	<b>Location</b>
Tute 1 – Study Design and research Question	Tuesday, Wednesday 1-3pm; Thursday 9:30-11:30am & 1-3pm	Room B113
Tute 2 – Introduction to STATA	Tuesday, Wednesday 1-3pm; Thursday 9:30-11:30am & 1-3pm	SPH Computer Lab Room 432
Tute 3 - Research Ethics	Tuesday, Wednesday 1-3pm; Thursday 9:30-11:30am & 1-3pm	Rooms B124A & B126
Tute 4 - Practical Workshop on electronic database searches & Endnote	Tuesday, Wednesday 1-3pm; Thursday 9:30-11:30am & 1-3pm	Percy Baxter training room 2 1 <sup>st</sup> floor, Baillieu Library