## Lecture 01a – Welcome

**ENVX2001 Applied Statistical Methods** 

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The University of Sydney

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## **Outline**

- About
- South Eveleigh Precinct
- Why study statistics?
- Doing well
- Learning outcomes

## **About**

Staff | Structure | Attendance

## **Staff**



Aaron Greenville



Liana Pozza



Januar Harianto



**Mathew Crowther** 



### **Structure**

#### Lectures

**Tue 10 AM** – Chemistry Lecture Theatre 1

Wed 11 AM – Chemistry Lecture Theatre 3

#### **Tutorials**

**Self-guided** sessions (1 hour), to be completed before the week's lab.

#### Labs

All labs are held in the **South Eveleigh Precinct** (more on this later):

- Thursday 9 am 12 pm
- Friday 10 am 1 pm, 2 pm 5 pm

### **Attendance**

- Mandatory for labs, **80%** minimum required.
- Lecture attendance is highly recommended, but not compulsory.
- Lecture recordings capture slides and audio *only*. You will miss out on important discussions and informal feedback.

### **Assessments**

► Code

Assessment	Weight	Due	Description
Project 1	10	Week 5	Report Describing data
Project 2	20	Week 10	Report Analysing experimental data
Project 3	20	Week 13	Presentation Modeling multivariate data (Topics 7 to 12)
Canvas Quizzes	5	Weekly	Weekly quizzes
Final exam	45	TBA	2 hours, Multiple Choice Questions + Short Answers

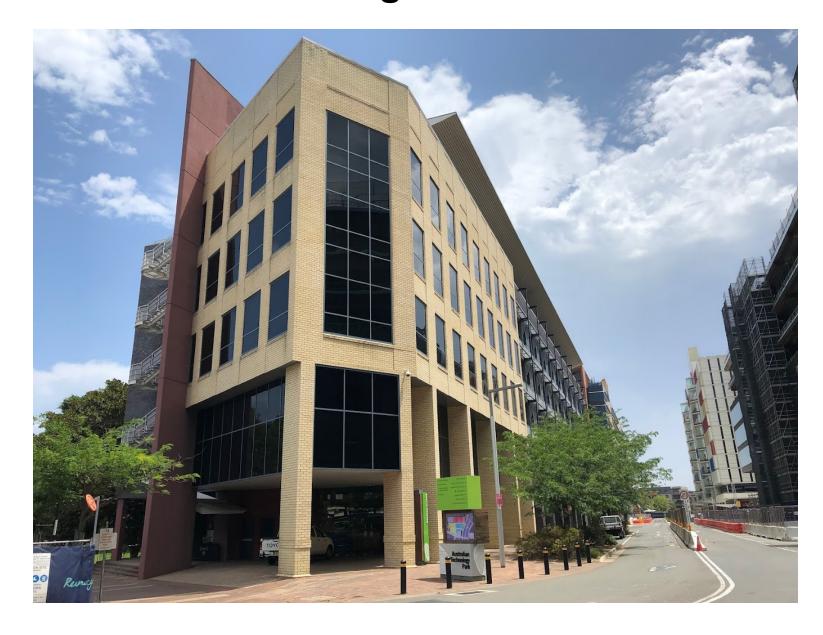


## South Eveleigh Precinct

Used to be known as the Australian Techonlogy Park (ATP). Still is, but it used to, too.



## **Biomedical Building**



Credit: Michael Wheatland



### **Directions**

#### Buses

#### Courtesy buses are available:

- Best option is to take the bus from **Fisher Library** to **Redfern Station**, then walk to the precinct (through the new station platform as "local traffic").
- Alternatively, direct buses are available but less frequent.

#### **Driving**

Free parking is available around Henderson Road, but it is extremely crowded. We do *not* recommend driving to the precinct.



## Walking

## Why study statistics?

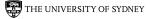
Why would it be relevant to my (non-statistical) career?

### Learn, so you can...

- Conduct effective **research**; but if you are not a researcher, you can still...
- Critically evaluate research findings; but if you don't plan to read scientific literature, you can still...
- Make informed **decisions** based on evidence and know the signs when someone is trying to mislead you.



Source: Anchorman (2004)



## **Doing well**

Attend lectures | Put in the hours | Ask questions

### **Attend lectures**

#### Attending a lecture is *not* the same as watching a recording...

- You can **ask questions** and *interact* with your peers.
- Your **lecturer** actively adjusts the pace/conten based on your *informal* feedback (e.g. confused looks, Google polls).
- If you don't *understand* something, there is a *good* chance that you can address it *before* the next lecture or lab.

### Put in the hours

- This is a **6 credit point** unit, which means that you are expected to spend **120 150 hours** in total, including exam prep time (~10 h per week)!
- **Practice makes perfect**. Tutorials and Labs help you apply the concepts you learn in lectures complete all the exercises, and practice with the bonus questions provided.





### **Ask questions**

- Ed is the best place to ask questions. We are way more responsive on Ed than on email.
- We are *open* to the use of AI tools (including LLMs like ChatGPT) to help you answer questions about code... but don't use them to cheat *yourself* out of learning.
- We have drop-in sessions, where you can jump in and have a chat on Zoom. We will announce the schedule on Ed.



# Learning outcomes

### By the end of this course, we want you to be able to:

- LO1 demonstrate proficiency in designing sample schemes and analysing data from them using R.
- LO2 describe and identify the basic features of an **experimental design**: replicate, treatment structure and blocking structure.
- LO3 demonstrate proficiency in the use or the statistical programming language R to apply an ANOVA and fit regression models to experimental data.
- LO4 demonstrate proficiency in the use or the statistical programming language R to use multivariate methods to find patterns in data.
- **LO5** interpret the output and understand conceptually how its derived of a regression, ANOVA and multivariate analysis that have been calculated by R.
- **LO6** write statistical and modelling results as part of a scientific report.
- LO7 appraise the validity of statistical analyses used publications.



### Thanks!

#### **Questions?**

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