Lecture 01a – Welcome

ENVX2001 Applied Statistical Methods

Dr. Januar Harianto

The University of Sydney

Feb 2024

THE UNIVERSITY OF SYDNEY

Outline

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

About

Staff | Structure | Attendance

Staff

A. Prof Aaron Greenville

Dr Liana Pozza

Dr Januar Harianto

Prof 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

THE UNIVERSITY OF SYDNEY

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.
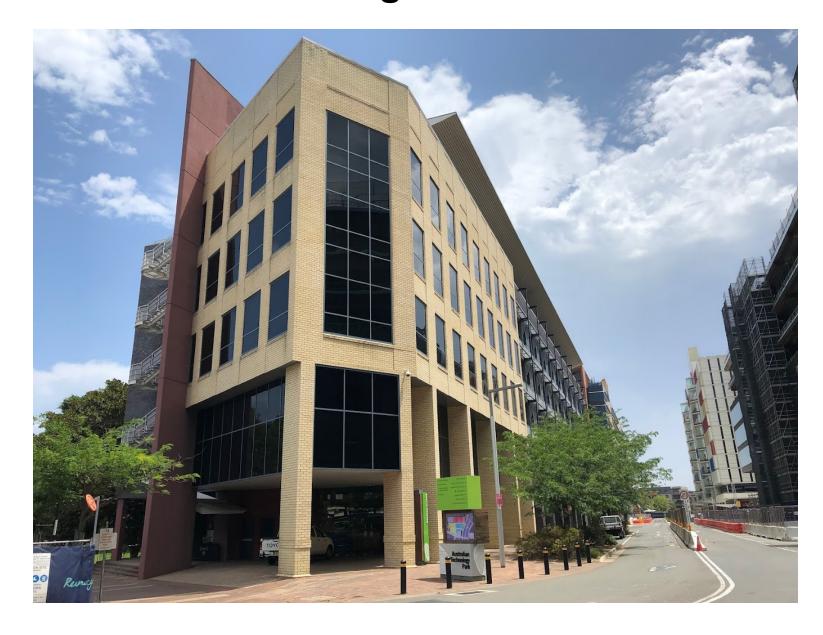
Assessments

- Check Unit Outline

- **Project 1: Describing data** – 10% individual, due **Week 5**

- **Project 2: Analysing experimental data** – 20% individual, due **Week 10**

- **Project 3: Presentation (multivariate)** – 20% group, due **Week 13**

- **Quizzes (weekly)** – 5% individual, opens weekly, multiple due dates

- **Exam** – 45% individual: 2 hours, Multiple Choice Questions + Short Answers

THE UNIVERSITY OF SYDNEY

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.

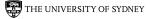THE UNIVERSITY OF SYDNEY

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

THE UNIVERSITY OF SYDNEY

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.

THE UNIVERSITY OF SYDNEY

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.

THE UNIVERSITY OF SYDNEY

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**.

THE UNIVERSITY OF SYDNEY

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?

This presentation is based on the SOLES Quarto reveal.js template and is licensed under a Creative Commons Attribution 4.0 International License

Download pdf

THE UNIVERSITY OF SYDNEY