

DATA1901 LAB01
TOPIC ONE

Acknowledgement of Country

I would like to acknowledge the Traditional Owners of Australia and recognise their continuing connection to land, water and culture. I am currently on the land of the Gadigal people of the Eora Nation and pay my respects to their Elders, past, present and emerging.

Keeping our campus COVID safe

- The University is following NSW Government and NSW Health guidance as a minimum standard in our response to the COVID-19 pandemic.
- NSW Government restrictions can change at short notice.
- Check your student email for updates about University operations and COVID safety precautions.
- Visit our website: sydney.edu.au/covid-19

Follow COVID safety precautions



Stay home if you are sick



Wear a mask



Avoid physical greetings



Keep 1.5m away from others



Wash hands regularly



Cough or sneeze into your elbow or tissue



Avoid crowding entrances and exits

sydney.edu.au/covid-19

Feeling unwell?

- **Stay at home**

- if you are feeling unwell with any COVID-19 symptoms
- If you have been directed to self-isolate

- **Get tested**

- If you are feeling unwell with COVID-19 symptoms, please get tested as soon as possible

- **Did you test positive?**

Yes? If you have visited campus within the last 72 hours you must advise the University via:

- email covid19.taskforce@sydney.edu.au, or
- call +61 2 9351 2000 (select option 1)

- **Stay informed**

- Monitor [the list of confirmed COVID case locations on campus page](#) to check for potential exposure and [follow NSW Health isolation and testing requirements.](#)

Emergency procedures (on campus)

- In the unlikely event of an emergency, we may need to evacuate the building.
- If we need to evacuate, we will ask you to take your belongings and follow the green exit signs.
- We will move a safe distance from the building and maintain physical distancing whilst waiting until the emergency is over.
- In some circumstances, we might be asked to remain inside the building for our own safety. We call this a lockdown or shelter-in-place.
- More information is available at www.sydney.edu.au/emergency.

The background is a vibrant blue gradient. It is filled with a complex pattern of glowing yellow and white elements. These include binary code (0s and 1s) and various geometric shapes like rectangles and lines, some of which are blurred to create a sense of depth. Scattered throughout are numerous bright, multi-pointed star-like glows, giving the impression of a digital or cosmic space.

WELCOME TO DATA SCIENCE

ABOUT US

- » What are you studying?
- » What languages do you speak? (verbal and coding)
- » When you first started coding in R, how did you find it?

ABOUT YOU

- » What is your major / degree?
- » What languages do you speak? (verbal and coding)
- » What are you most excited for in university?
- » <http://tiny.cc/vlpouz>
- » Swap contact details / start a group chat

TOPICS



Exploring Data

Topic 1

Design of Experiments



Topic 2

Data and Graphical Summaries



Topic 3

Numerical Summaries



Modelling Data

Topic 4

Normal Model



Topic 5

Linear Model



Sampling Data

Topic 6

Understanding Chance



Topic 7

Chance Variability (The Box Model)



Topic 8

Sample Surveys



Decisions with Data

Topic 9

Hypothesis Testing



Topic 10

Tests for Mean



Topic 11

Tests for Relationship



Topic Overview



Imagine

Approx. 20min



Discover

Approx. 3hr



Challenge

Approx. 1hr



Explore

Approx. 1hr



Evaluate

Approx. 2hr



The background is a vibrant blue with a complex pattern of yellow and white bokeh lights, some appearing as sharp stars and others as soft, out-of-focus circles. Overlaid on this are faint, golden digital patterns resembling circuit boards, binary code, and data streams, creating a high-tech, futuristic aesthetic.

CHALLENGE

KEY IDEAS

- » Ethics and Privacy
- » Statistical thinking
- » Randomised Controlled Trial (RCT) vs Observational Study
- » Domain knowledge
- » Confounders
- » Precautions with observational studies

GROUP WORK

TAKE

BREAK

The background is a vibrant blue field filled with out-of-focus yellow and white light spots, creating a bokeh effect. Overlaid on this are faint, glowing digital patterns, including lines of code, binary digits (0s and 1s), and abstract geometric shapes, suggesting a high-tech or data-driven theme.

EXPLORE

RR

REMINDERS

- » Add your group members on socials / email
- » Work through the extra practice in challenge
- » Complete the evaluate quiz
- » Go to the evaluate lecture on Friday