

COMP2200/COMP6200 – Week 11A Networks in plain language

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Settling in

Welcome back, graph explorers

- How are we feeling after our Matplotlib sprint? Ready to peek at the relationships *between* the dots?
- Big thanks for the patience with Orange updates last week. If your laptop staged a protest, the super tutors can help today.
- Today's plan: tame network jargon, set up the Orange add-on, and sketch why this helps with Assignment 3 stories.

Support crew check-in

- Same roster: super tutors, Ed forum, and Friday drop-ins. Let us know early if the network add-on will not install.
- I've queued short captioned clips for each demo. Want extra detail? Pop a comment on Ed so the tutors can post annotated screenshots.
- Remember the grace window for tech hiccups still applies. Spilled coffee over your keyboard? Email us before midnight and we will sort it out.

From tables to networks

Why networks now?

- Last week we plotted clean tables. This week the *rows become relationships*. Think tutorial buddies, bus routes, citation webs.
- Networks let us ask: who is central, which connections matter, and how information flows.
- We'll focus on small, interpretable graphs. Machine learning at scale arrives in Week 12, so breathe easy.

Nodes, edges, attributes

- **Nodes:** the entities (students, suburbs, proteins). Each node can carry attributes like faculty or study mode.
- **Edges:** the links. They can be directed ($A \rightarrow B$) or undirected ($A - B$) and optionally weighted.
- Questions to ask yourselves: what does an edge mean, and does the direction matter for your story?

Sanity check

If you cannot explain what crossing an edge represents, pause. Maybe you just need a tidy table instead of a network.

A friendly study network

- We will use a tiny data set, `study_group_edges.csv`, listing who studies with whom and how often.
- Pair this with `study_group_nodes.csv` for attributes like major and campus.
- Try sketching this by hand: who seems to be the "go-to" organiser? Any isolated classmates we should invite in?

Orange set-up

Orange network add-on tour

- 1 Open Orange → *Options* → *Add-ons* and tick **Network**. Let it download quietly while you sip water.
- 2 Load the edge list with the **Network Explorer**. Orange will ask for node attributes – point it to the nodes table.
- 3 Drag in **Network File**, **Network Explorer**, and **Network Analysis**. Wire them up like Lego.

Mini activity: reading the map

- Question for the room: who looks central in the explorer?
Does that match your hand sketch?
- Toggle the degree size option and colour by faculty. What story emerges about interdisciplinary study groups?
- Jot a sentence in your notes: "Our most connected student is ... which matters because ...". We'll share a few.

Pause and breathe

- Quick recap: nodes, edges, direction, weight. Orange add-on installed. Data loaded.
- Any blockers before we tackle shortest paths and centrality next session?
- If you're stuck on the install, flag down a tutor now so you are ready for the live demo.