# Master of Information Technology

## Welcome

Dr Nell Baghaei

# Acknowledgment of **Country**

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.
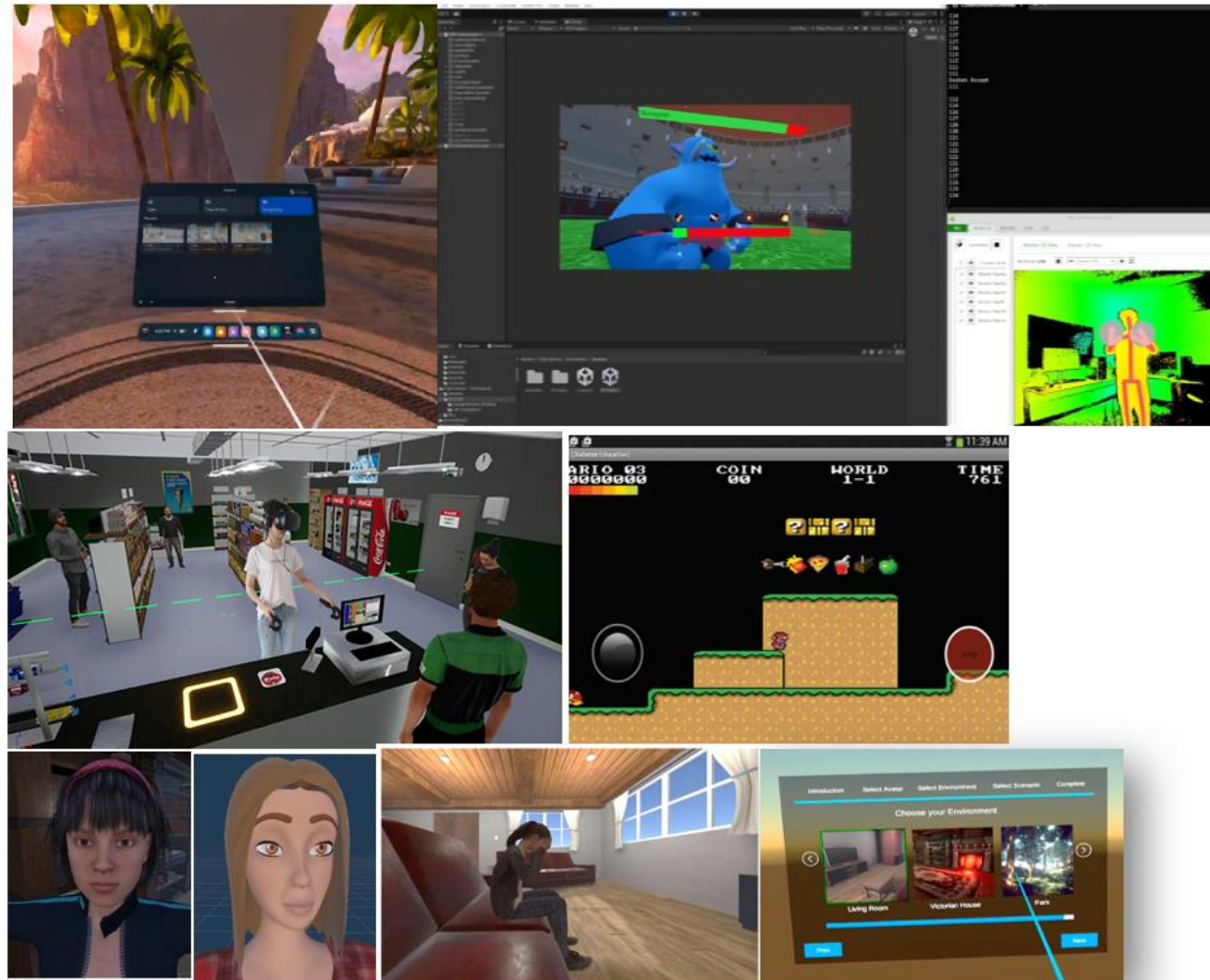
# About Me

- Senior Lecturer at ITEE

- Program Convenor for MInfoTech

Work history: Software Engineer, Researcher, Team Leader, Academic

Research interests: Extended Reality, Educational Games, AI in Education, Persuasive Technology

# Dr Nell Baghaei

**Interests**: Virtual Reality, Serious Games, AI in Health/ Education, Persuasive Technology

## Current projects:

- Individualised VR for Enhancing Mental Health (*in collaboration with UQ School of Psych, Yale School of Medicine*)

- VR for Rehabilitation (*in collaboration with Biomedical Sciences & UQ RECOVER Injury Research Centre*)

- Visual Embellishments in VR Exergames

- VR for Education

- Mobile Games for Assessing Mental Health (*in collaboration with UQ School of Psychology*)

- Mobile Games for Health Education

# About you

Introduce yourself to the person sitting next to you ☺

Why are you interested in doing this programme?

Where were you born?

What are your hobbies?
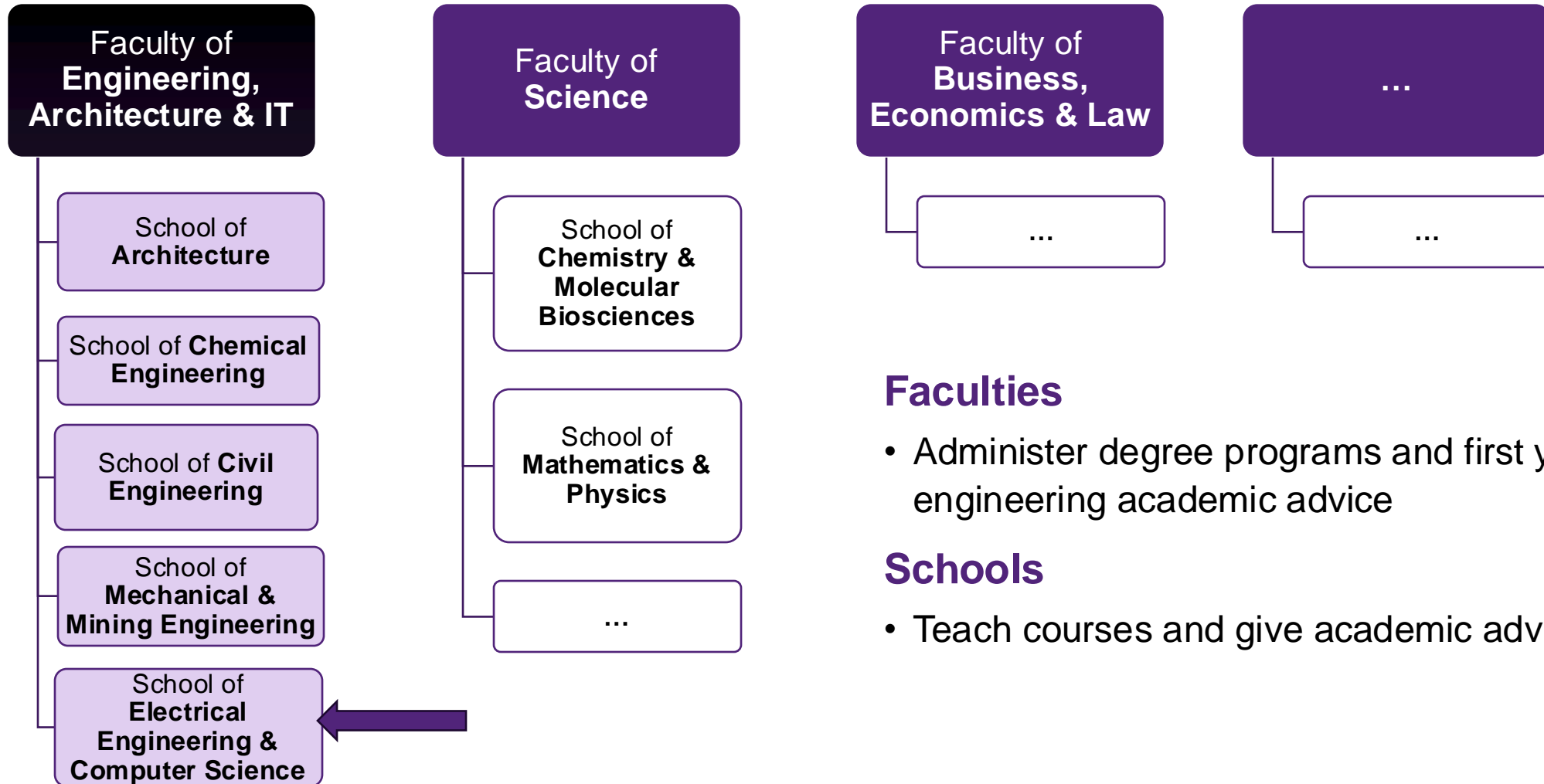
# Icebreaker Option 2- Two Truths, One Lie

One at a time, share three interesting statements about yourself.

TWO of which will be true and ONE will be a lie.

Everyone else – put on your detective hat and try to guess which one is the lie!

# University Structure

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┌─────────────────────┐   ┌─────────────────────┐   ┌─────────────────────┐   ┌─────────────────────┐
│     Faculty of      │   │     Faculty of      │   │     Faculty of      │   │                     │
│   Engineering,      │   │     Science         │   │     Business,       │   │         …           │
│  Architecture & IT  │   │                     │   │   Economics & Law   │   │                     │
└─────────────────────┘   └─────────────────────┘   └─────────────────────┘   └─────────────────────┘
```

**Faculty of Engineering, Architecture & IT**
- School of **Architecture**
- School of **Chemical Engineering**
- School of **Civil Engineering**
- School of **Mechanical & Mining Engineering**
- School of **Electrical Engineering & Computer Science**

**Faculty of Science**
- School of **Chemistry & Molecular Biosciences**
- School of **Mathematics & Physics**
- …

**Faculty of Business, Economics & Law**
- …

**…**
- …

## Faculties

- Administer degree programs and first year engineering academic advice

## Schools

- Teach courses and give academic advice

# UQ Terminology

- **Program** = degree you're studying, e.g. MInfTech, BCompSc, BE(hons), MEngSci, etc.
- **Course** = subject
  - Each course has a course code (e.g. "CSSE1001", "ENGG1100", "DECO1400")
- **Unit** = measure of workload of a course
  - Most courses are 2 units
  - Standard study load is 8 units per semester (4 courses), i.e.
    - MInfTech requires 32 units (typically 4 semesters = 2 years)
    - BInfTech, BCompSci and BArchDes require 48 units (typically 6 semesters = 3 years)
    - BE(Hons) require 64 units (typically 8 semesters = 4 years)
- **Faculties:** Administer degree programs
- **Schools:** Teach courses and give academic advice
- **Getting Started at UQ:** www.uq.edu.au/startingatuq

# In your own time, watch this video

A faculty specific, carefully considered general information introduction. If you do just one thing to help prepare you for studies in this faculty, watch this video.

https://www.youtube.com/watch?v=oXZZvygHea8

# What is IT (aka ICT)?

Communication

Software

Servers

Applications (examples?)

Databases

Hardware

# IT & Design

Viewing IT as a design subject makes us look at the problems in the world like an architect would look at the built environment, rather than how a bricklayer might
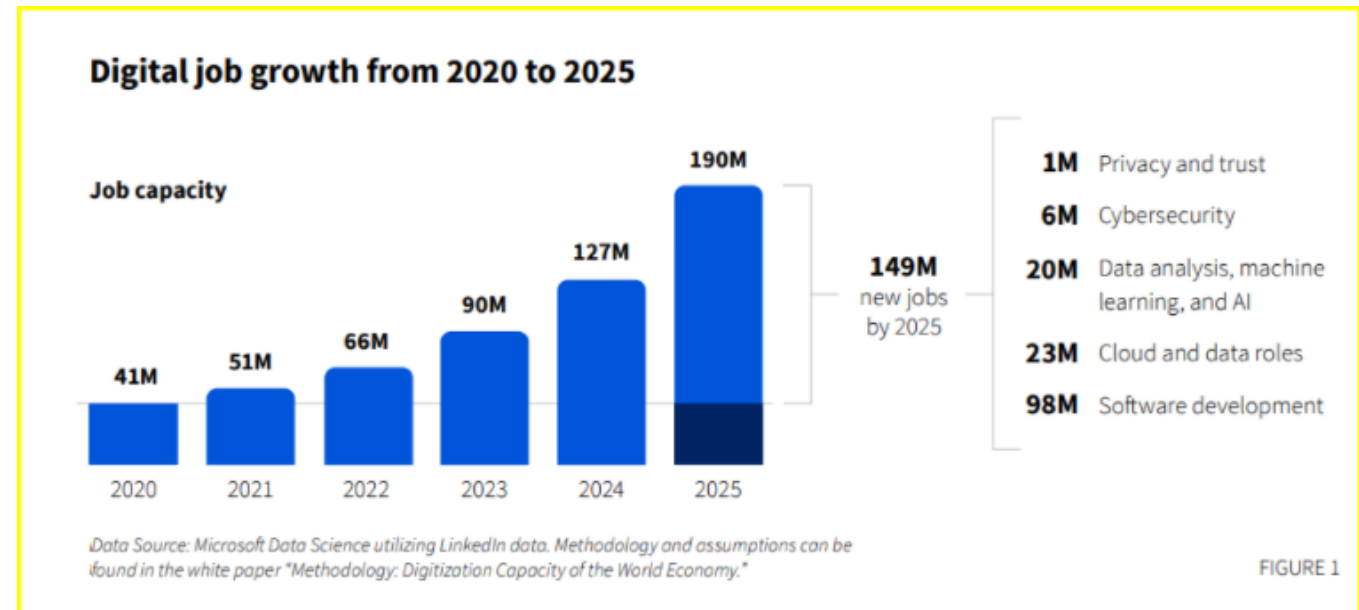
Without the design, laying bricks just builds walls.

Viewing digital solutions from this **design perspective** leads us to investigate problems from the perspective of the **people** and the **contexts** in which the solutions will be used

# What is the future of IT?

Globally jobs that require digital skills are growing with few jobs exempt from using technology.

- 2021 Industry Skills report from online learning platform Coursera, the pandemic has accelerated the rate of digitisation on a global scale

- Microsoft data that shows two years' worth of transformation occurred in just two months.



**Digital job growth from 2020 to 2025**

Job capacity

- 2020: 41M
- 2021: 51M
- 2022: 66M
- 2023: 90M
- 2024: 127M
- 2025: 190M

149M new jobs by 2025

- **1M** Privacy and trust
- **6M** Cybersecurity
- **20M** Data analysis, machine learning, and AI
- **23M** Cloud and data roles
- **98M** Software development

Data Source: Microsoft Data Science utilizing LinkedIn data. Methodology and assumptions can be found in the white paper "Methodology: Digitization Capacity of the World Economy."

FIGURE 1

*Projected digital job growth, (World Economic Forum) https://www.weforum.org/agenda/2022/01/digital-skills-ai-machine-learning-cloud-computing-job/*
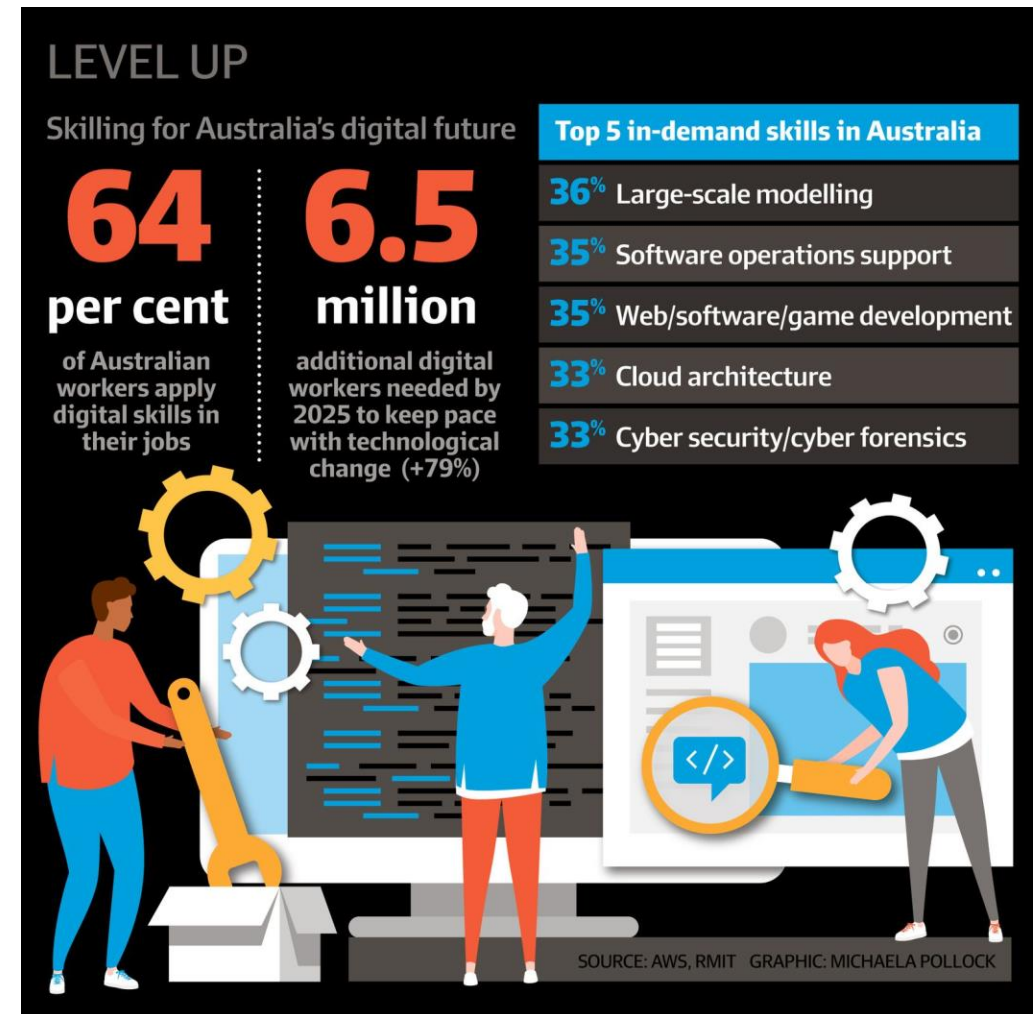
# Future demand for technology workers and skills

**Amazon Web Services Research**

"Australia will require an additional 6.5 million newly-skilled and reskilled digital workers by 2025 to meet future demand for technology skills. That's 79% more digitally-skilled workers than we have today".

The technology sector currently contributes about AU$122 billion to the Australian economy, which is around 6.6% of the country's GDP. By 2030, that contribution is expected to grow to about AU$207 billion per year.

https://www.aboutamazon.com.au/news/aws/meeting-the-challenge-of-bringing-digital-skills-to-6-5-million-australians

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# In Demand Skills

Top ten skills demanded in ICT jobs

Source - ACS Australia's Digital Pulse

https://www2.deloitte.com/au/en/pages/
economics/articles/australias-digital-
pulse.html

These are key attributes that you will
be developing in this program designed
to help you become *job-ready
graduates.*

**Table 3.1:** Top ten skills demanded in ICT job postings, 2020

| Rank | Skill | Job postings (no.) | ICT job postings requesting that skill (%) |
|------|-------|--------------------|--------------------------------------------|
| 1 | Communication Skills | 28,539 | 42% |
| 2 | Teamwork/Collaboration | 15,232 | 23% |
| 3 | Problem Solving | 12,259 | 18% |
| 4 | Planning | 11,406 | 17% |
| 5 | SQL | 9,789 | 14% |
| 6 | Customer Service | 9,096 | 13% |
| 7 | Project Management | 8,343 | 12% |
| 8 | Troubleshooting | 7,372 | 11% |
| 9 | Writing | 7,292 | 11% |
| 10 | Java | 6,889 | 10% |

Source: Burning Glass custom data (2021).

# Creativity

Building high quality IT systems starts from understanding the problem and then generating and evaluating ideas for digital solutions, in addition to learning to code and learning about working with data

Significant amount of IT work is away from the computer

The work of an ICT professional is far from the stereotype of endless hours alone at the keyboard.

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# MInfTech

Brief Overview:

- Technology (programming, databases, design)

- Studio (team-based projects, open-ended problems, integrate knowledge from other courses)

- Choice of **practice-based project** stream, or **research-based** thesis stream

- Electives (courses chosen from IT specialisms, make sure you have the pre-reqs skills)

# Master of Information Technology

**Commencing Semester 1**

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CREATE CHANGE

**1** The study plan below shows the required: **Core Courses**

**2** Complete exactly **2 units** of **Flexible Core Courses** from the options below:

Sem 1 **INFS7202**

Sem 2 **DECO3500**

**3** Complete **4 units** of **Research Courses** in year 2 for either of the following:

- **Thesis Option**
- **Practitioner Option**

**Students commencing Thesis Option in Semester 1 enrol in REIT7841 for both semesters. Students commencing Thesis Option in Semester 2 enrol in REIT7842 for both semesters.

**4** Complete exactly **6 units** of **Discipline Electives**, accounting for prerequisites:

| Sem 1 | | |
|---|---|---|
| COMP7703 | DECO7110 | |
| COMS3200 | DECO7220 | |
| COMS4507 | INFS3200 | |

| Sem 2 | | |
|---|---|---|
| COMP3301 | DECO6500 | |
| COMP3702 | DECO7230 | |
| COMP3820 | DECO7281 | |
| COMP4703 | DECO7285 | |
| COMP7240 | INFS3208 | |
| COMP7505 | INFS7203 | |
| COMS6200 | INFS7410 | |
| CYBR3000 | | |

| S 1+2 | | |
|---|---|---|
| CSSE7201 | CSSE7231 | |

## Year 1

**Sem 1**

**CSSE7030** Introduction to Programming *(1+2)*

**MATH7861** Discrete Mathematics *(1+2)*

**DECO7140** Introduction to Web Design *(1+2)*

**REIT6811** Research Methods *(1+2)*

**Sem 2**

**CSSE7023** Object Oriented Programming *(1+2)*

**COMP7110** Introduction to Software Innovation

**DECO7250** Human Computer Interaction *(1+2)*

**INFS7900** Introduction to Information Systems *(1+2)*

## Year 2

**Sem 1**

**DECO7180** Design Computing Studio 1: Interactive Technology

**Discipline Elective**

**Flexible Core Course**

**Sem 2**

**INFS7903** Relational Database Systems

**Discipline Elective**

**Discipline Elective**

**Thesis Option**

**REIT7841/7842*** Research and Development Methods and Practice

Individual research project with an academic supervisor. If you are considering a research career, this is your best choice.

**OR**

**Practitioner Option**

**DECO7380** Design Computing Studio 3: Propose *(1+2)*

**DECO7381** Design Computing Studio 3: Build *(1+2)*

Capstone project applying skills learnt. COMP3820 Digital Health Software Project is another project suited to the practioner option.

**Students commencing in Semester 1 enrol in REIT7841 for both semesters. Students commencing in Semester 2 enrol in REIT7842 for both semesters. Seek advice from the School of EECS if you have any questions or if you fail any courses. Email **studentenquiries@eecs.uq.edu.au**. Students must follow the program rules. Future course offerings are subject to change. Study plan published 2025.

*(1+2)* Course offered in both Sem 1 and 2.

# Timetables, Changing & Dropping Courses

Class Allocation is via MyTimetable system via your my.UQ Dashboard: http://my.uq.edu.au/

**1.** Go to **'mySI-net'** to enrol in chosen course(s)

**2.** Go to **'My Timetable'** to use the Allocate+ system to preference class times **(Closed 27/01/2025)**

**3.** Classes are then allocated automatically with personal timetable released **12pm 03/02/2025**

**Class Adjustment (02/03/2025):**
Didn't get the time you wanted, or now need to change times?

**4.** Use **'My Timetable'** to:
- Swap to other classes if there is space.
- Add your name to a waitlist to swap to preferred class
- Contact eait.mytimetable@uq.edu.au if you still have unavoidable clashes

# Timetables, Changing & Dropping Courses

Need to **add** or **change** courses?

- Go to step (1) then (2) or (4) on the previous slide [depending on when you change].

  Adding courses is available till **Friday 7 March 2025**.

Need to **drop** a course?

- International students MUST discuss with EAIT faculty office before reducing below #8.

- Census date (last day to drop a course without financial liability): Monday 31st March 2025

- Last day to withdraw from a course without academic penalty: Wednesday 30th April 2025

# Course Profiles & Websites

Describes what you should expect in a course:

- Topics covered
- Expected learning outcomes
- Assessment
- Calculator restrictions
- Textbooks
- Other important information
- Access via my.UQ, Blackboard or Courses & Programs: www.my.uq.edu.au/programs-courses.

Each course will have a website available from:

www.learn.uq.edu.au   (blackboard)

## Introduction to Web Design (DECO1400)

Information valid for Semester 1, 2025

| Course level | Current course offerings |
| --- | --- |

**Course level**
Undergraduate

**Faculty**
Engineering, Architecture & Information Technology

**School**
Elec Engineering, Comp Science

**Units**
2

**Duration**
One Semester

**Attendance mode**
In Person

**Class hours**
Lecture 1 Hour/ Week
Tutorial 1 Hour/ Week
Practical 2 Hours/ Week

**Incompatible**
DECO7140 or IENV7961 or MMDS1400 or MMDS7961

**Assessment methods**
Practical, Assignments and Project

**Course enquiries**

### Current course offerings

| Course offerings | Location | Mode | Course Profile |
| --- | --- | --- | --- |
| Semester 1, 2025 (24/02/2025 - 21/06/2025) | St Lucia | In Person | PROFILE UNAVAILABLE |

Please Note: Course profiles marked as not available may still be in development.

### Course description

This course introduces the student to design and development practices for multimedia content, focusing particularly on web sites. Modern design practices for the web are taught, framed by an introduction to human-centred design techniques, particularly heuristic based interface design guidelines for web interfaces and web accessibility from a global perspective. Today's web sites need to be both well designed and dynamic, thus the course also introduces some basic scripting techniques for going beyond static content. The focus of learning is activity based and incorporates both individual and team based exercises.

### Archived offerings

| Course offerings | Location | Mode | Course Profile |
| --- | --- | --- | --- |
| Semester 1, 2024 (19/02/2024 - 15/06/2024) | St Lucia | In Person | COURSE PROFILE |
| Semester 1, 2023 (20/02/2023 - 17/06/2023) | St Lucia | In Person | COURSE PROFILE |
| Semester 1, 2023 (20/02/2023 - 17/06/2023) | External | External | COURSE PROFILE |
| Semester 1, 2022 (21/02/2022 - 21/06/2022) | St Lucia | Internal | COURSE PROFILE |
| Semester 1, 2022 (21/02/2022 - 21/06/2022) | External | External | COURSE PROFILE |
| Semester 1, 2021 (22/02/2021 - 19/06/2021) | St Lucia | Flexible Delivery | COURSE PROFILE |
| Semester 1, 2021 (22/02/2021 - 19/06/2021) | External | External | COURSE PROFILE |
| Semester 1, 2020 (24/02/2020 - 11/07/2020) | St Lucia | Internal | COURSE PROFILE |
| Semester 1, 2019 (25/02/2019 - 23/06/2019) | St Lucia | Internal | COURSE PROFILE |

# Email

**All official communication is sent to your UQ student email account**

- You may choose to forward this to an alternative email address

- It is assumed such emails are received and read

If you email us (including your lecturers) always include:

- Your full name

- 8 digit student number

- Program (MInfTech)

- Contact telephone number

# Balance your Life & Enjoy Your time at UQ

- Ensure you have stable living and transport arrangements

- Work life balance is important! Carefully balance Study/Work/Social/Hobbies/Family Responsibilities

- Connect with other students: In classes, UQ Clubs and Societies: http://www.uqu.com.au/clubs-societies
  - Market Day: During week 1 of teaching

- Computing related societies:
  - UQ Computing Society:  http://uqcs.org.au
  - Design Society UQ: https://www.uqu.com.au/club/design-society-uq-dsuq
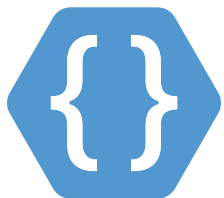
# EAIT Student Employability

## CONNECT

Networking doesn't just mean with industry contacts. Look to your student cohort and UQ contacts to build your network. You never know where it might lead to.

Join the EAIT Student Employability Team facebook page for opportunities

Join the EAIT Student Employability Team LinkedIn page for opportunities

Sign up for industry mentoring programs like the Meet a Mentor

Join student societies, there are over 220 to choose from

Book a consult with an EAIT Employability Advisor to discuss your employability

Meet new people through sporting teams or special interest groups at UQ

## CO-CURRICULAR

Participating in co-curricular activities will help you stand out in the recruitment process and will provide you with extra content for your resume and interviews.

Get involved in summer or winter research projects

Join UQ Ventures for new entrepreneurship skills

Apply for the UQ Employability Award

Attend EAIT Employability events and workshops

Become an EAIT Ambassador and inspire the next generation of students

Get global experience

## CAREERS

Start early, enhance your employability throughout your degree to be job ready!

Complete work experience and internships throughout your degree

Record and submit your EPP hours and reflective journals on time

Complete the online Career Kickstarter modules to create your resume and cover letter

Start applying for graduate positions and researching companies of interest to you

Apply for scholarships- every year

Develop and practice your elevator pitch

*Start in first year. Set yourself apart*
***Visit us, Level 3, Hawken Engineering Building (50)***

**https://www.eait.uq.edu.au/employability**

It's important to enhance your **employability** while at university! Don't leave it until your final year.

# Enrichment experiences during your UQ program!



## Student-Staff Partnerships (projects)

- Students and staff collaborating on projects that enhance the student experience
- 4 rounds per year
- 15 – 21 weeks

## Summer/Winter Research Program

- Working on research projects with leading academics and researchers
- 6 – 10 weeks over the break

## Employability Award

- Gain recognition for your involvement outside your studies
- Runs for the duration of your degree program
- Register at any time

Find out more at:

✉ employability@uq.edu.au

💻 employability.uq.edu.au/get-the-edge

# Protect yourself from scams

## Stop

Never click on links or respond to unexpected calls or messages without pausing first to consider whether they could be fake. Always be cautious of any urgent demands.

## Check

Check if the sender is legitimate before responding by contacting the organisation using details off their website to confirm if they had requested information.

## Report

If you encounter a potential scam or phishing attempt, report it to cyber.gov.au/report. If it involves a UQ account, advise the Cyber Security Team by reporting a cyber concern at https://my.uq.edu.au/cyber-security.

# Common scams targeting students

## University fees

$

- Scammers claim to be 'agent' from UQ and offer discounts.
- Only pay fees via mySI-net through the Financials tile.
- Contact the Fees team on 07 3365 2328 for further advice.

## Government agencies

- Scammers claim to be from e.g. the Chinese Embassy or other overseas government departments, police or the Australian Tax Office (ATO).
- They demand payments and threaten arrest or deportation.
- Often request payment via overseas wire transfers, gift cards, cryptocurrency, cash transfers and payments via WeChat/AliPay.

## Rental property

- Scammers try to lure you into providing money and personal information for a property that doesn't exist.
- Check credentials of private advertisers promoting rental properties.
- Never transfer money until you have inspected the property and signed an RTA lease agreement, including bond.

## Employment

- Random job offers, particularly when you have not applied for a position.
- Verify the existence of the business and person offering the job.

**A government agency will never threaten you with immediate arrest or demand payment through unusual means. Contacting the Australian police will not impact your visa status.**

Report cybercrime at cyber.gov.au/report.
Visit the Australian Signals Directorate (ASD) website for more information at cyber.gov.au OR phone 1300 CYBER1 (1300 292 371)

# What types of scholarships does EAIT offer?

- **EAIT has over 50 scholarships on offer!**

### Merit
- For high achieving students

### Financial Hardship
- For students who may be otherwise unable to meet their education-related expenses

### Experience
To support students undertaking overseas exchanges, conferences etc.

### Regional and Remote
- For students who have relocated from a Regional or Remote area

### Aboriginal or Torres Strait Islander
For students who identify as Aboriginal and/or Torres Strait Islander

### Diversity
- For under-represented groups such as those who identify with the LGBTIQ+ community, people with a disability etc.
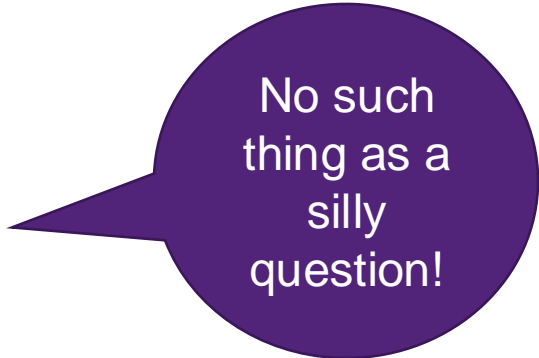
# Getting Help And Support

- ## Help with your academic work?
  - Demonstrators in class; course coordinators; check course profile and website
  - UQ Library: workshops and support for finding information
  - UQ Student Services Learning advisors & Workshops

- ## Problems working out what courses to enrol in?
  - Program Orientation Sessions during orientation week
  - Academic Advisors: https://www.eait.uq.edu.au/academic-advice

- ## Problems within your courses?
  - EECS School Office: 78-425 (GPSouth Building)
  - Book appointments to talk to **academic advisors**

ASK EARLY!

No such thing as a silly question!

# Getting Help And Support Continued

- Problems with your program/degree?
  - Adding or changing courses (subjects) or changing your degree?
  - Interpreting or arranging your timetable?
  - Applying for credit for previous studies?

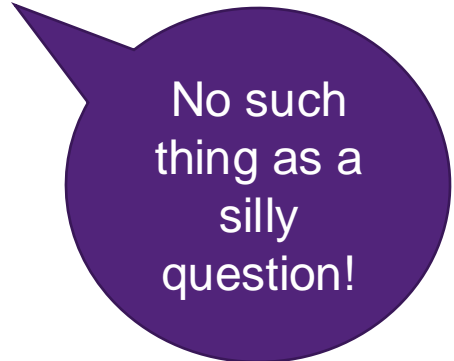  Contact EAIT Faculty Office: 50-S204 (Hawken Engineering Building)
  https://www.eait.uq.edu.au/contact

- UQ Student Central: International advisers; Disability Advisers; Counsellors; Accommodation; Employment: https://my.uq.edu.au/contact/student-central

- Look after yourself: Sleep, exercise, eat well

ASK EARLY!

No such thing as a silly question!

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# Thank you! ☺

# Any questions?

4:00pm-5:30pm - Post Grad Social Mixer
refreshments available 47A-courtyard

CRICOS code 00025B