The University Of Queensland
AUSTRALIA

Welcome!

Bachelor of Computer Science (BCompSc)

Bachelor Information Technology (BInfTech)

Electrical Engineering and Computer Science

Acknowledgement 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.

The Brisbane River pattern from *A Guidance Through Time* by Casey Coolwell and Kyra Mancktelow.

What's happening today?

Lorna Macdonald – Director Student Experience

Welcomes from:

- Head of School – Prof. Michael Bruenig
- Information Technology – Dr. Aneesha Bakharia
- Computer Science – Dr. Joel Mackenzie

Student Capstone Projects – Jason Weigel

Academic Skills – David Rowland

AUA (Ask us anything) Panel

After the talking:

- Computing Unplugged Challenges & Scavenger Hunt
- Academic Advice & Study Plans

Lunch & Expo at UQ Centre

Welcome to EECS

Prof. Michael Bruenig - Head of School

Welcome to the Bachelor of Information Technology

Dr Aneesha Bakharia – Program Group Convenor

Endless career Possibilities

Information Technology is about designing innovative digital technologies to solve problems in the world.

At UQ, BinfTech emphasizes user-centred design to ensure solutions meet user needs.

Photo by Compare Fibre on Unsplash
*Source: The Tech Council of Australia

BinfTech Graduates

Bachelor of Information Technology

Majors

User experience design

PEOPLE

Software design

CODE

Software information systems

DATA

User Experience Design Major

User Experience (UX) designers ensure that software, websites, and emerging technologies are intuitive, effective, and human-centred.

Courses

- Focus on design skills and creativity, HCI, programming, and prototyping with a range of technologies - **physical products** (using electronics), **AR/VR**, **web**, and **mobile** apps.

Roles

- UI/UX Designers
- VR/AR Designer/Developer
- Product Manager
- Web Designer/Front-end Web Developer

Software Design Major

Follow a career in the creation and management of full stack software applications that meet user needs

Courses

- Focus on **programming**, the **software development process**, **object-oriented programming**, **data structures and algorithms**.

Roles

- Programmer/Developer
- Solutions Architect
- Software Development Manager

Software Information Systems Major

Software information systems power the data-driven world we live in, from retail and banking to healthcare, transport, and entertainment.

Courses

- Focus on designing, building, and optimising large-scale, high-performance database systems for real-time decision- making

Roles

- Database Designer/Administrator
- Full Stack Web Developer
- Data Analyst & Cloud Architect
  (depending upon chosen electives)

Your Journey as a BinfTech Student

- Strong foundational programming in the core
- Studio (team-based projects, open-ended problems, integrate knowledge from other courses)
- Optional fourth Honours year - Advanced coursework and honours project
- New Human-Centred AI course
- Using and integrating AI in software and processes are embedded across courses

Meet Hannah

UI/UX Graduate Consultant at Deloitte

3 things about Hannah:

1. Graduated in 2022 from UQ, with a Bachelor of Information Technology, major in User Experience Design.

2. Worked as a demonstrator during her studies.

3. "*I'm passionate about technology because I like to design technology that works for people*."

Meet our UQ Student Projects

Human-Computer Interaction

Cyber Security

Virtual Reality/ Augmented Reality

Conversational Agents

Interaction Design

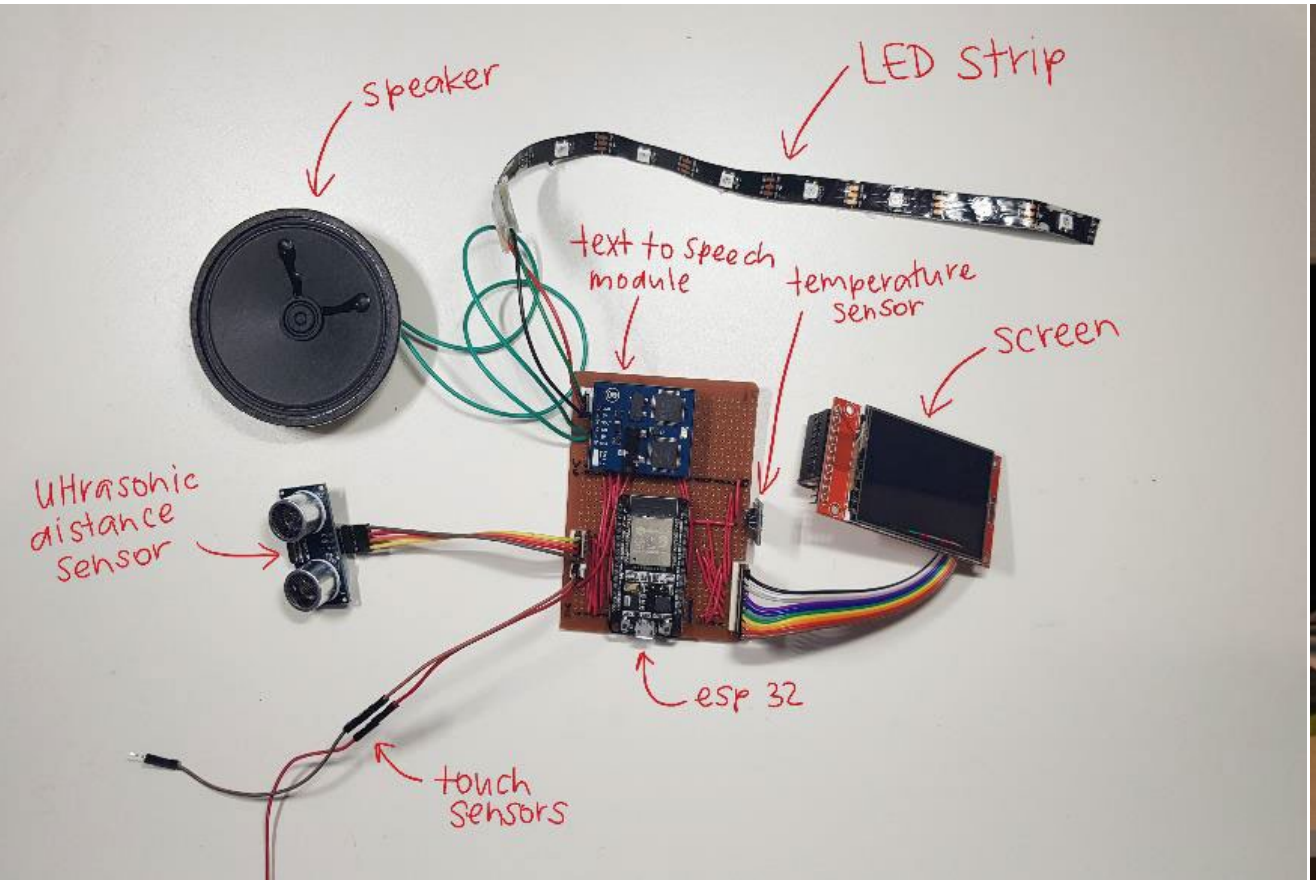
Digital Health

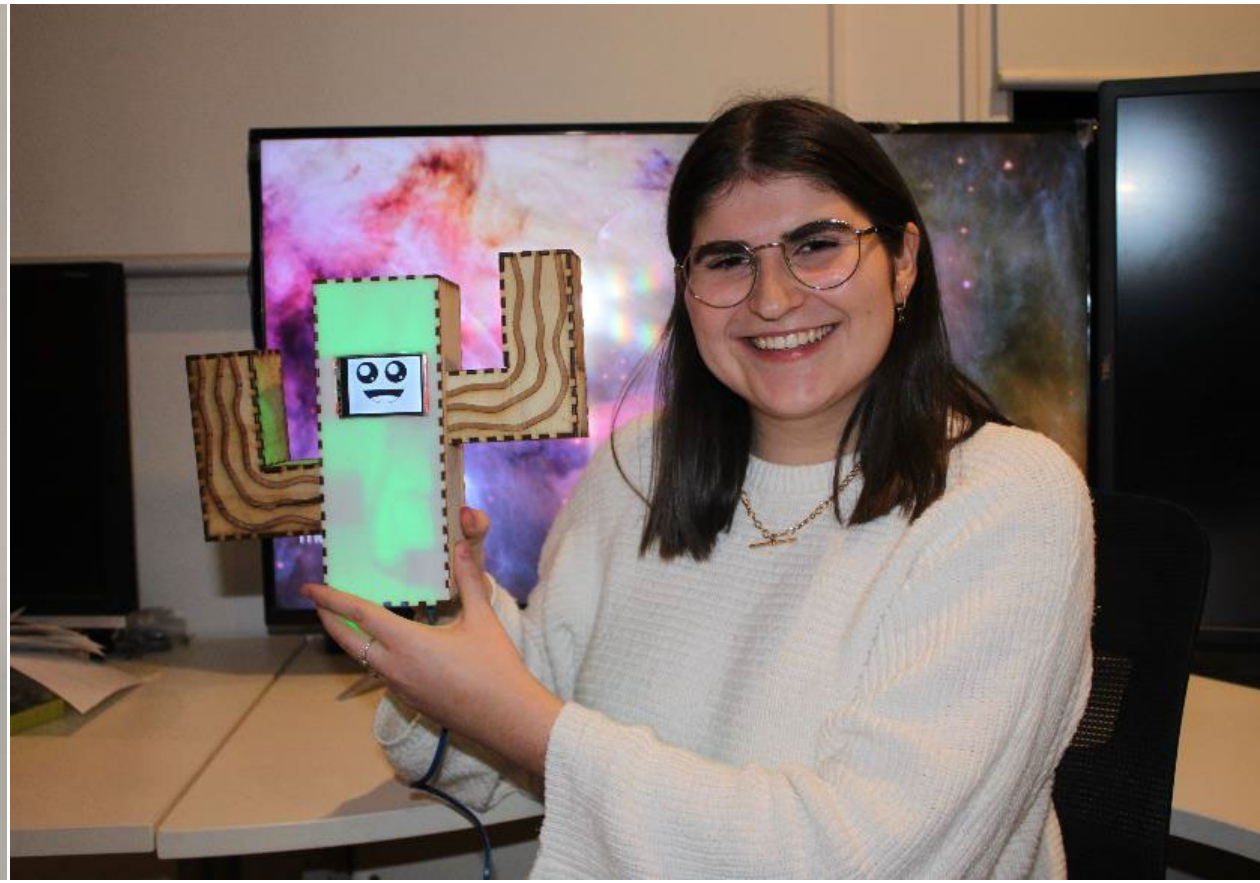
User Experience

Artificial Intelligence

Robotics

You get the best of both worlds!





Welcome to the Bachelor of Computer Science

Dr Joel Mackenzie – Program Group Convenor

Congratulations! You've made it!

Your hard work has paid off! You've made it to UQ!

In about three years' time.... You will be a qualified **computer scientist!**

So why are you here? What do you want to get out of this program? Where to next?

Computer scientists are the hidden force that drive advances across many sectors, playing a vital role in shaping our digital future.

What does a computer scientist do?

https://uq.mu/rl55a

- Design, develop, test, and deploy software
- Solve complex computing problems
- Manage, analyze, and derive insights from data
- Optimize algorithms and system performance
- Implement and test cybersecurity measures
- Research and develop novel techniques to solve existing problems
- Collaborate and work within teams

Computer scientists are creative and innovative problem solvers

Where might you find a computer scientist?

… basically everywhere! Big Tech, Government, Finance and Banking, Healthcare, Pharma, Education, Consulting, Startups, Media, Manufacturing, Science...

Bachelor of Computer Science

Machine Learning

Image Generated with AI
22 November 2023 at 11:46 am

Cyber Security

Image Generated with AI
22 November 2023 at 11:48 am

Data Science

Image Generated with AI
22 November 2023 at 11:52 am

Programming Languages

Scientific Computing

Cyber Security

Protecting digital assets from cyber threats.

Learn the fundamental processes and practices to protect computing systems from attack, damage or unauthorised access. Study secure programming techniques and ethical hacking to safeguard individuals, businesses and governments against cybercrime, and you'll graduate with highly valued and employable skills.

- Cyber security analyst
- Cyber systems engineer
- Security architect
- Information security officer
- Cryptographer
- Information security analyst

CRIM1000: Introduction to Criminology

COMP3320: Vulnerability Assessment and Penetration Testing

COMP3301: Operating Systems Architecture

CYBR3000: Information Security

Data Science

Extracting insights from data to drive informed decision making.

Learn comprehensive and fundamental techniques for end-to-end processing that transforms data into information, and information into knowledge. Study techniques for storing, processing, and deriving insights from big data.

- Data scientist
- Data analyst
- Business analyst
- Statistical analyst
- Database developer
- Research analyst

COMP2011: Fundamentals of Data Science

STAT2003: Mathematical Probability

INFS2200: Relational Database Systems

STAT2004: Statistical Modelling & Analysis

Machine Learning

Machine learning is the study of algorithms that automatically improve with experience.

Learn how computers can automatically identify and harness useful data to help decision making, find hidden insights without being explicitly programmed where to look, and predict outcomes to help authorities design effective policies.

- Data scientist
- DevOps Engineer
- MLOps Engineer
- Data Engineer
- ML Engineer
- Research translation

COMP3702: Artificial Intelligence

COMP4702: Machine Learning

COMP3710: Pattern Recognition and Analysis

STAT3006: Statistical Learning

Programming Languages

Programming languages are the building blocks of software.

Study the craft and science of programming, and graduate with the skills to enable the construction of effective programming languages and reliable software.

- Software Engineer
- Cloud Engineer
- Software Tester/QA
- Full stack developer
- Mobile App developer
- Web developer

COMP4403: Compilers and Interpreters

CSSE3100: Reasoning About Programs

COMP2140: Web/Mobile Programming

COMP3400: Functional & Logic Programming

Scientific Computing

Computers hold the key to fast and efficient analysis of complex scientific problems.

Study algorithms for mathematical analysis to solve a wide array of complex scientific and engineering problems. Graduate with skills used to support various scientific endeavours.

- Software Engineer
- Data Engineer
- Business Analyst
- Algorithm Specialist
- Research Engineer
- HPC Specialist

COSC2500: Numerical Methods in Computational Science

COSC3500: High-Performance Computing

COSC3000: Visualization, Computer Graphics & Data Analysis

SCIE2100: Bioinformatics 1: Introduction

No Major, Single Major, Double Major: Your call

Each BCompSc plan shares the same **16 core units (8 courses).**

Beyond the core, you can choose to **single major, double major**, or **not have a major at all.**
Selecting a given major **will not** lock you into a certain career path, but **it will** demonstrate that you have focused more deeply on a given area of computing.

The BCompSc program is developed at producing life-long learners; you will be able to adapt to new technology, advances and changes in the field, and apply your knowledge to new problems and domains.

Academic Advice

Which courses should I choose at the start of the program?

Planning your study – which courses will you take? When?

I want to change to Information Technology / Software Engineering / other

We recommend you visit us at the "great wall" later today to see specific plans

The following webpage contains lots of useful information

https://eecs.uq.edu.au/current-students/academic-advice/bachelor-computer-science

For more complex questions, you can book an appointment with our academic advisors.

- Failed some courses and need help rearranging your program
- Want to switch/add/remove your major
- Planning for exchange

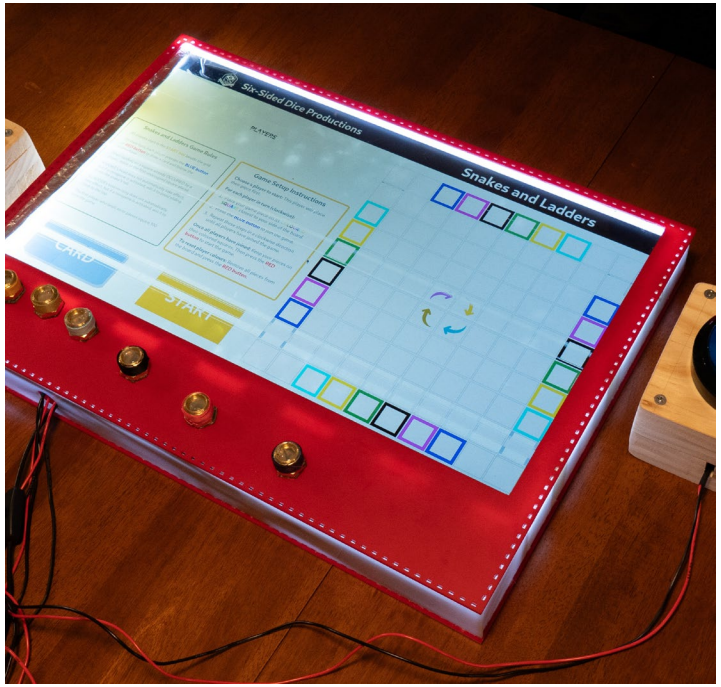
THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

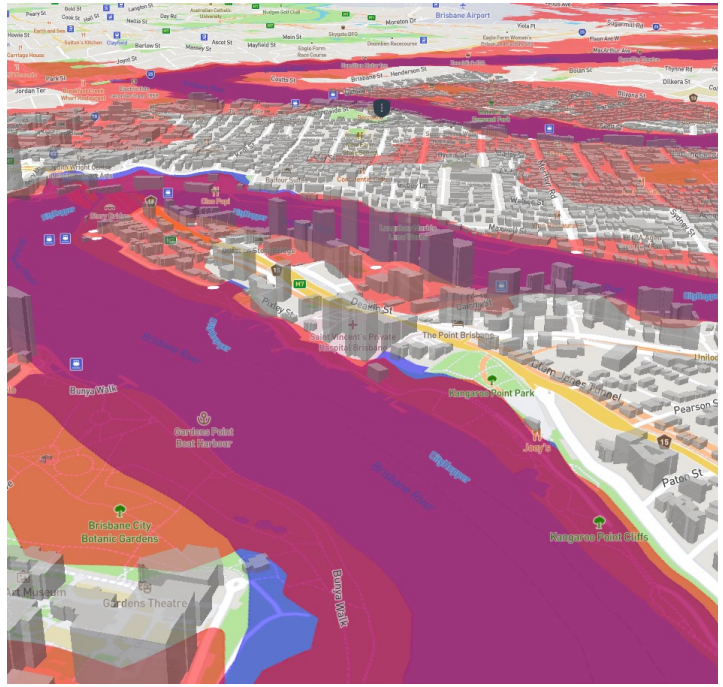
Welcome to the Bachelor of Computer Science

and best wishes for your program!

Student Capstone Courses

Jason Weigel – DECO3801 Semester 2 Course Coordinator





Student Capstone Courses

Jason Weigel – DECO3801 Semester 2 Course Coordinator

DECO3800: Studio 3 Propose (Core for BInfTech)
DECO3801: Studio 3 Build (Core for BInfTech & BCompSc)
DECO3850: Physical Computing Studio (Core for BInfTech Major User Experience Design)

Builds on skills and knowledge learnt in your entire degree.
Make sure to do them in your final year!

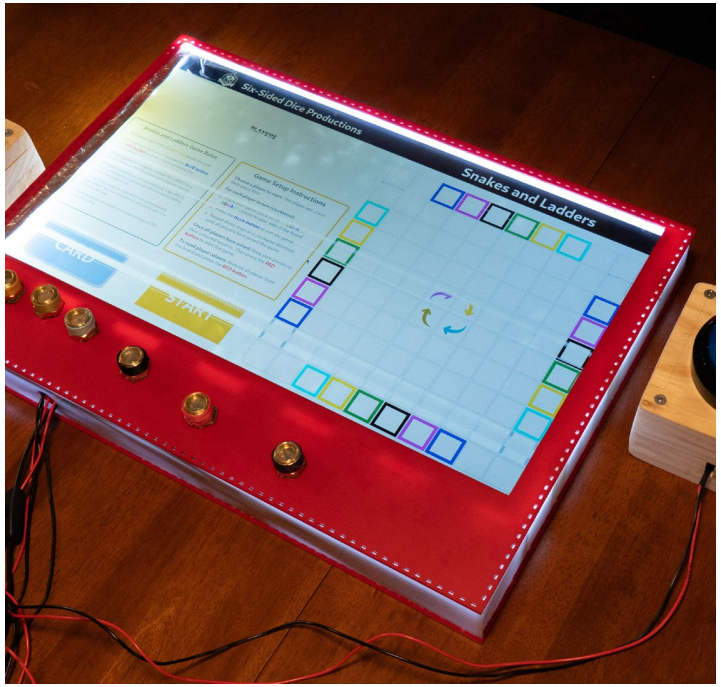
Work in a multidisciplinary team to design and develop well-rounded prototypes.
The large projects require multiple skill sets; you can't do it all yourself!

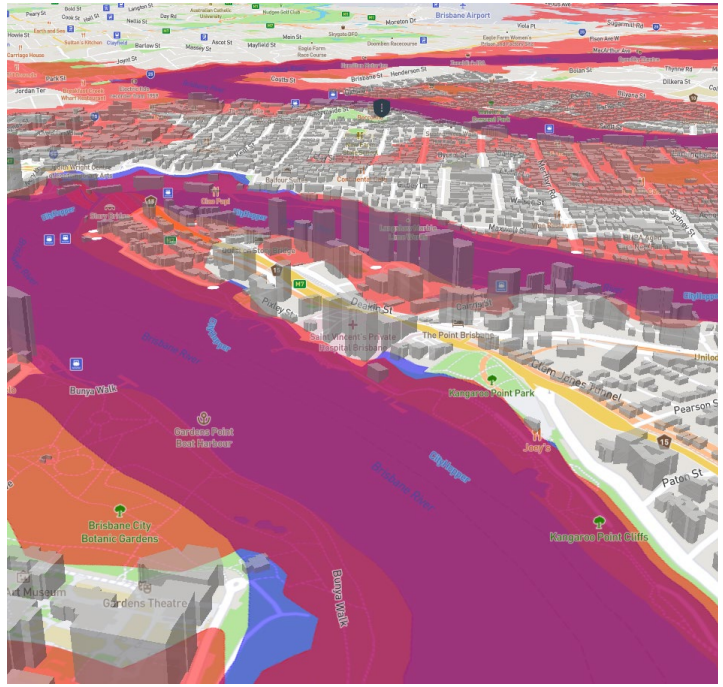
Excellent examples for your portfolio / CV.
Show off what you can do to future employers!

Select a project that aligns with your program and major to get the most out of the experience.
Challenge yourself and have fun.

Student Capstone Courses

Jason Weigel – DECO3801 Semester 2 Course Coordinator





Strategies for a successful transition or return to university studies

Dr David Rowland

Academic Skills Adviser
Student Support and Wellbeing Services

One key to success: Get yourself organised and develop a consistent study routine.

Class	Uni work	Travel	Paid work	Meal	Other set activities	Chores	R & R
		🚌	$	🍽	🏋	🛠	🚲 🎵
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6:30 AM		🍽					
7:00 AM	🍽					🛠	
7:30 AM	🍽					🛠	
8:00 AM	🚌		🚌	🚌	🚌	🛠	
8:30 AM	🚌	🚌	🚌	$	🚌	🛠	
9:00 AM		$		$			
9:30 AM		$		$			🚌
10:00 AM		$		$			$
10:30 AM		$		$			$
11:00 AM		$		$	ENVH7001		$
11:30 AM		$	🍽	$	Online classes		$
12:00 PM	🍽	$	PUBH7000 L	$			$
12:30 PM	🍽	$	Herston	$		🍽	$
1:00 PM		$		$		🍽	$
1:30 PM		$		$			$
2:00 PM	OHSS7000 W	$		$			$
2:30 PM		$		$			$
3:00 PM		🚌		$			$
3:30 PM				$			🚌
4:00 PM	🚌			🚌			
4:30 PM	🚌			🏋	🚌		
5:00 PM	🏋		🚌	🏋	🚌		
5:30 PM	🏋		🚌				
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7:00 PM	🍽	🍽	🍽	🍽	🍽	🚲 🎵	🍽
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8:00 PM						🚲 🎵	
8:30 PM						🚲 🎵	
9:00 PM						🚲 🎵	

Downloads:

- Weekly planner
- Semester and other planners

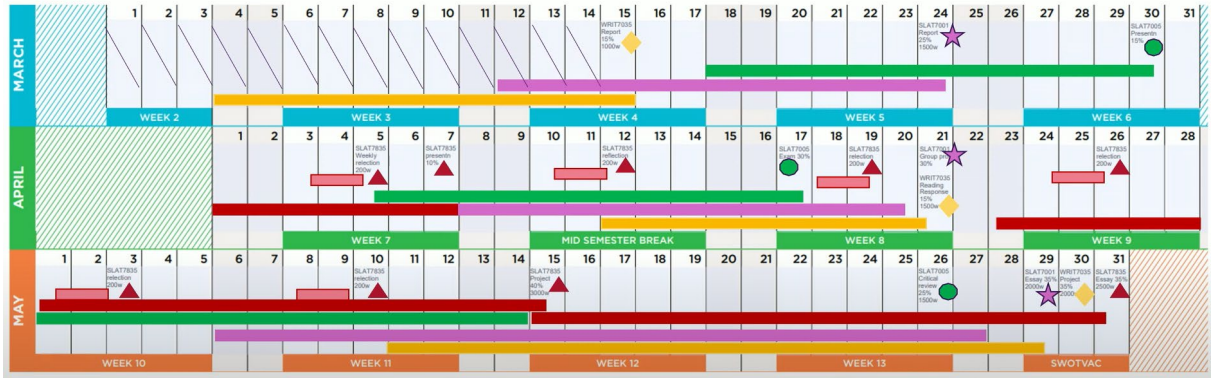
Treat uni like a job and schedule your hours for uni work.

- Aim for around 10 hours per week for each two unit course – make sure you are not overcommitted!
- But, make time for exercise, fun and downtime too: a happy and healthy brain is a productive brain!

Support productivity by setting goals each day:

Adobe stock image

Project manage your assessment tasks with a semester planner:



Other ways to support focus and consistency

Use the fact that environment can help shape behaviour:
You want your brain to be thinking: “I am at ‘work’, so I should be ‘working’.”

versus

Study groups can also support motivation and perseverance: Beware becoming socially isolated!

Try the First Year Engineering Learning Centre (50-C201)

Online versions:

- Study Together: 24/7 Study Room & Focus Room
- StudyStream | Study With Strangers | Study Together

Beware relying on the “motivation fairy”:

- Motivation often comes only *after* you get started, not before.
- To get started, start with something small or easy.
- Lower barriers by building your skills.
- You may even find doing a small chore first will help get you moving.

Adobe stock image

But what if your brain works a little differently?

Try the Neurodivergent Hub workshops and services.

ADHD Coaching sessions

Develop connections and strategies to support your studies.

Neurodivergent Meet-up

Come along to learn new skills and meet other neurodivergent students who are sharing your experiences.

Neurodivergent Check-in workshop

Learn how to identify challenges earlier in the semester and develop strategies to progress through the semester.

Neurodivergent Mentoring program

Have the opportunity for more tailored support and explore strategies through one-on-one support for the first 6 weeks of semester 1.

Tertiary Transition Toolbox

The TTT is a 2-day workshop offered in the lead-up to semester 1. This workshop assists neurodivergent students to transition into university life and study.

Level up your approaches to learning: "Cruise and cram" doesn't work at uni

Fundamental principle: "Use it or lose it!"

Ensure spaced repetition by using the Study Cycle each week.

1. Make your brain "sticky" with prereading.
   (Just a quick overview.)
2. Attend / view lecture and take notes
   You won't remember content / explanations otherwise.
3. Within 48 hours, *review* lecture notes
   = fill in gaps in content and understanding
   Test: Could you explain things to another student?
4. Two or three times across week, practise applying content / quiz yourself on it.
   Reality check every few weeks: Can you do past exam questions under exam conditions?
5. Periodically across semester, test yourself on earlier content.

Adobe stock image

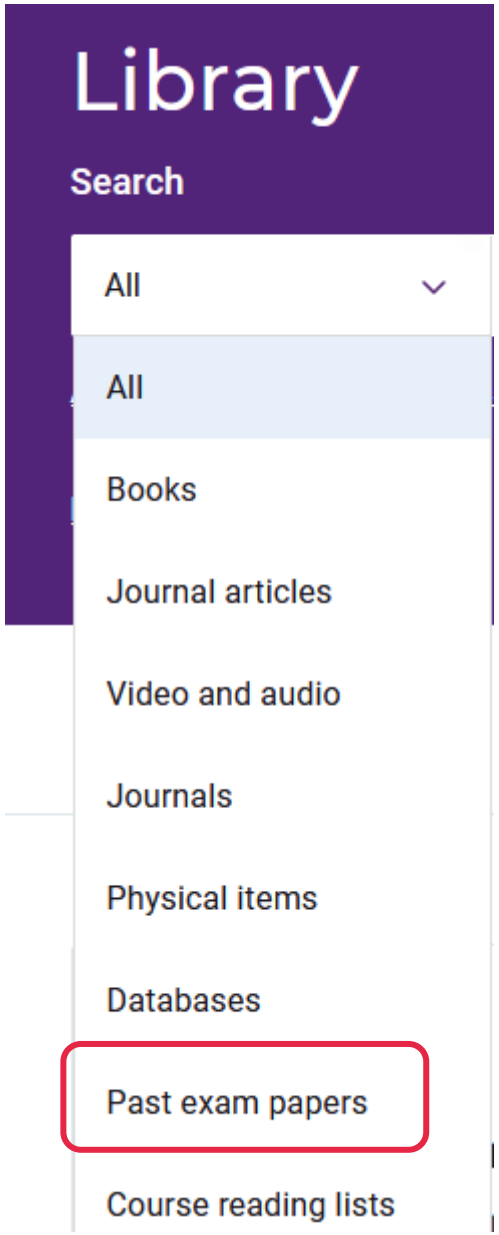
Like exercise, the keys to success are:

- Frequency [routine]
- Duration [engaging]
- Intensity [test yourself]

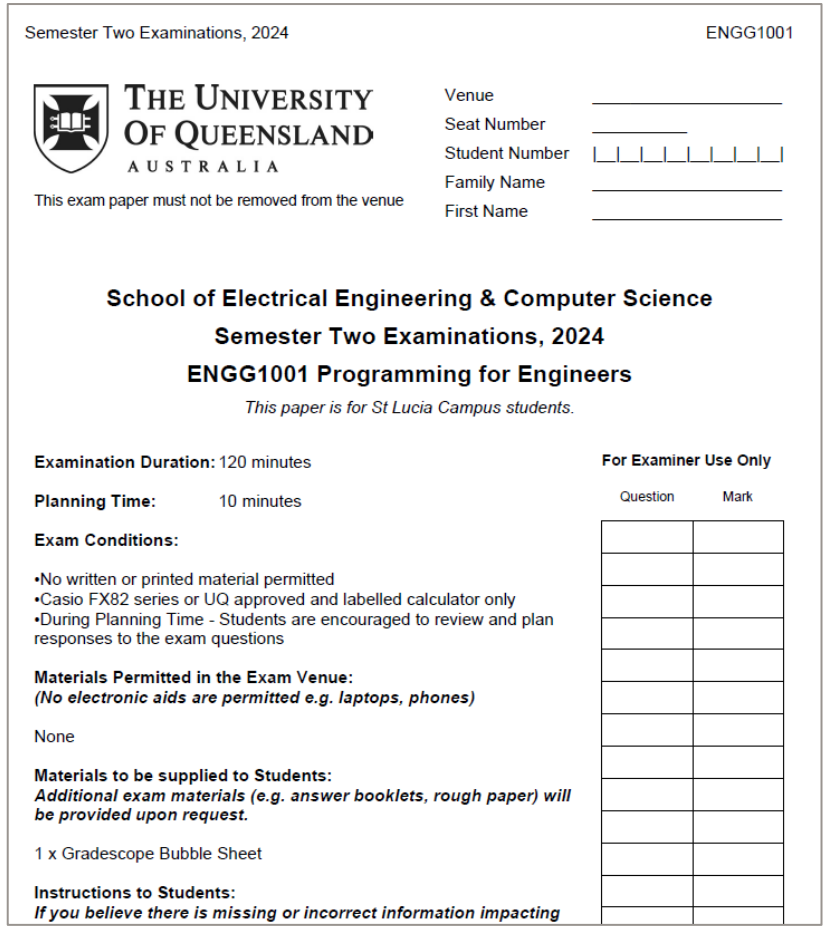
Across all four domains of knowledge:

- **Factual**
  Can recall
- **Conceptual**
  Can explain
- **Procedural**
  Can do
- **Metacognitive**
  Can problem solve:
  - About own learning
  - About disciplinary problems

How can you tell how effective your approaches are?



Periodically test yourself on relevant past exam paper questions user exam conditions.



Semester Two Examinations, 2024 ENGG1001

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

This exam paper must not be removed from the venue

Venue _____
Seat Number _____
Student Number |_|_|_|_|_|_|_|_|
Family Name _____
First Name _____

School of Electrical Engineering & Computer Science
Semester Two Examinations, 2024
ENGG1001 Programming for Engineers
This paper is for St Lucia Campus students.

Examination Duration: 120 minutes
Planning Time: 10 minutes
Exam Conditions:

•No written or printed material permitted
•Casio FX82 series or UQ approved and labelled calculator only
•During Planning Time - Students are encouraged to review and plan responses to the exam questions

Materials Permitted in the Exam Venue:
(No electronic aids are permitted e.g. laptops, phones)

None

Materials to be supplied to Students:
Additional exam materials (e.g. answer booklets, rough paper) will be provided upon request.

1 x Gradescope Bubble Sheet

Instructions to Students:
If you believe there is missing or incorrect information impacting

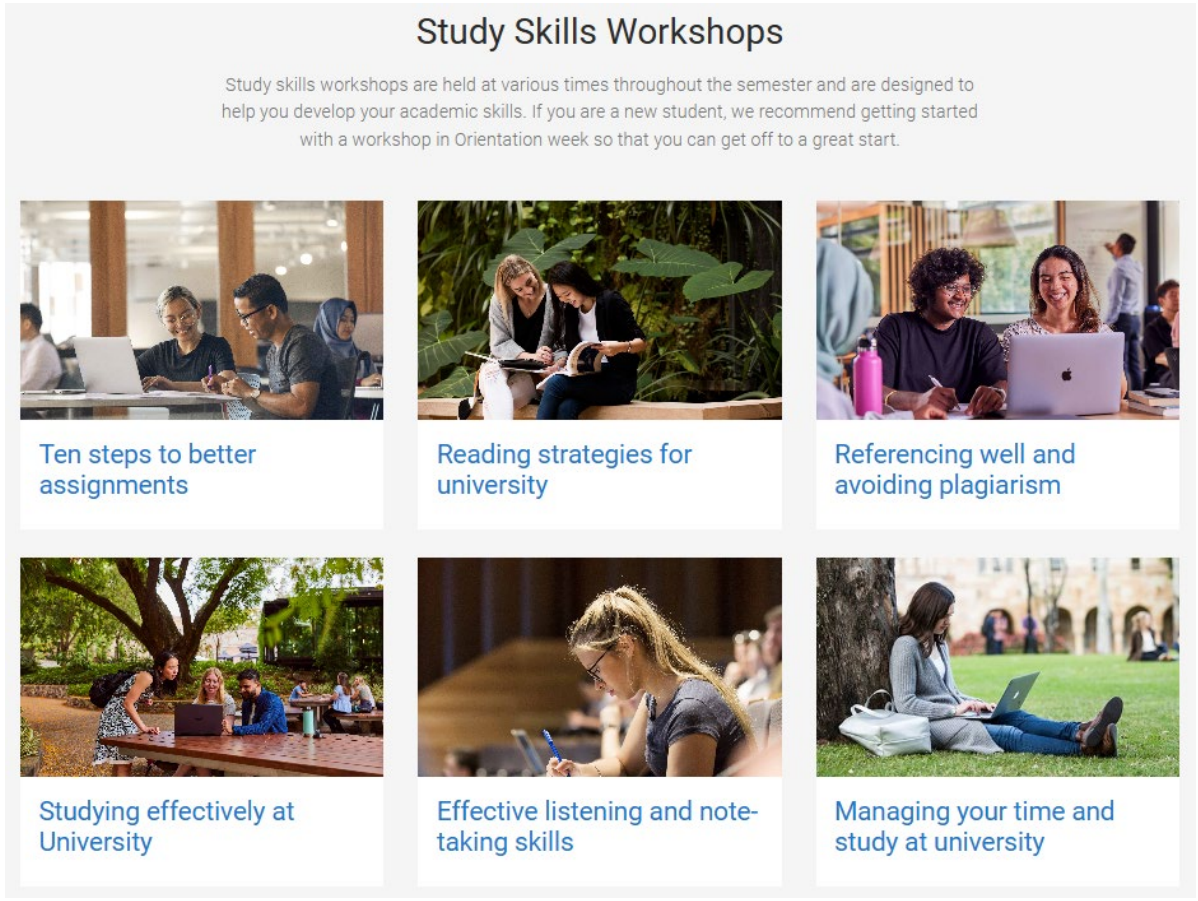
For Examiner Use Only

Question	Mark

Search by course code.

Develop your skills and look after yourself

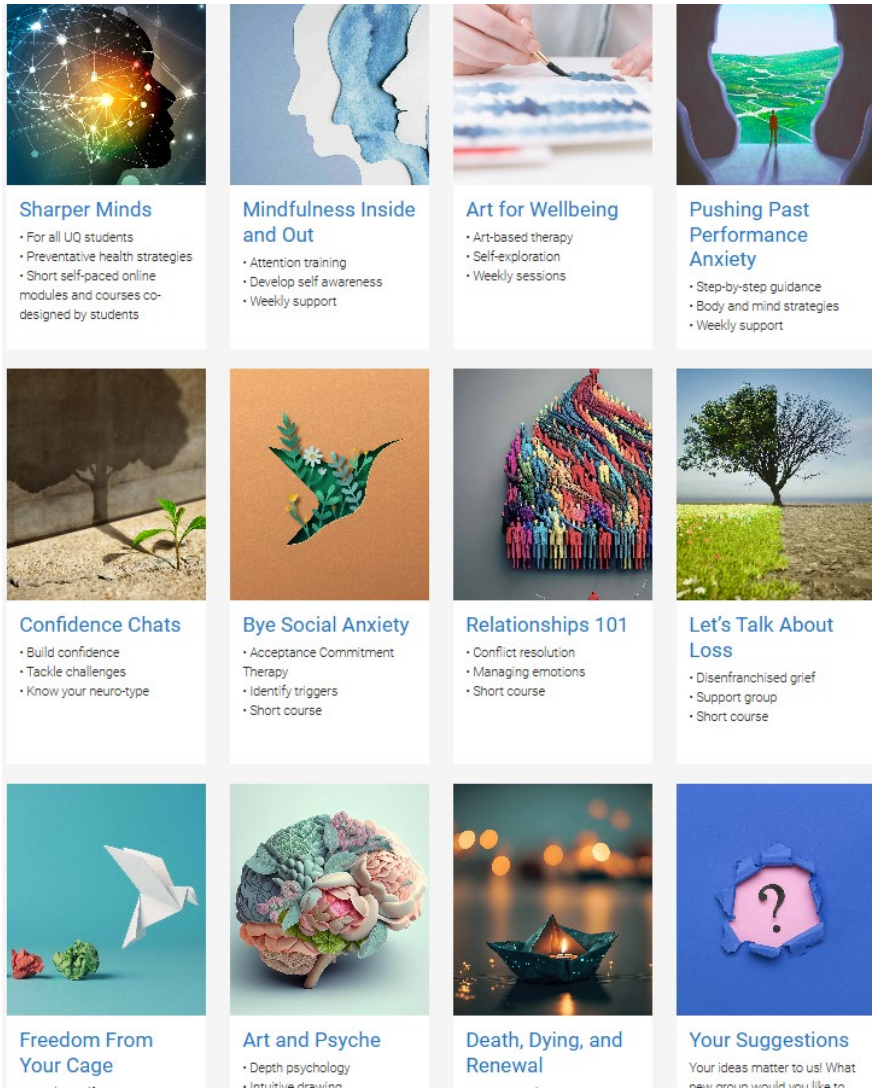
Search: "Workshops uq"



https://my.uq.edu.au/information-and-services/student-support/workshops

And more generally:
https://my.uq.edu.au/student-support

Search: "Wellbeing programs uq"



https://my.uq.edu.au/information-and-services/student-support/health-and-wellbeing/mental-health-and-emotional-support/wellbeing-programs

Good luck!

Dr David Rowland
Academic Skills Adviser
d.rowland@uq.edu.au

Ask Us Anything

Joel Mackenzie – Program Convenor Computer Science

Aneesha Bakharia - PC Information Technology

Lorna Macdonald – Director Student Experience

Nic, Kai, Allan & Zee – current Computing students

over to you!

EECS Student Hub

https://learn.uq.edu.au/ultra/organization

Dedicated Blackboard site for all coursework students in the school.

Automatically enrolled as a student in EECS

Opportunity to ask questions & give feedback via EdDiscussion.

EAIT Student Experience: Linktree

https://linktr.ee/eaitstudentexperience

Links to resources for commencing students.

Including a video message from our Associate Dean Academic Prof. Liza O'Moore with great tips on getting started.

What Next?

Computing Unplugged Challenges

In groups of 5 – complete the challenges to collect parts for your computer & solve the word of the day!

- Fashion by Binary
- Encode / Decode
- Make me a Sandwich
- Pixelated
- Build a Computer Scavenger Hunt
- MazeRunner (outside)

Team prizes up for grabs!!!

Watch out for people wearing bracelets like this!

Expo & Lunch @ UQ Centre

- Stalls from UQ services
- Student Societies

Thank you & welcome to UQ!

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