Bachelor of Engineering (Honours)
Bachelor of Engineering (Honours) and Master of Engineering
Bachelor of Engineering (Honours) / Dual Degree

The University Of Queensland
AUSTRALIA

Software Engineering Specialisation

First Year Study Pathways and Information Guide

What is Software Engineering?

Software is at the heart of modern life

From artificial intelligence, mobile apps, and cloud computing to autonomous vehicles, healthcare, cybersecurity and space technologies, software engineers design and build the systems that increasingly shape our world.

Software Engineering is about much more than programming. It is about turning ideas into software that solves real-world problems. By combining computing with engineering principles, you will learn how to design, build, test, and maintain complex software systems that are reliable, secure, and fit for purpose. You will tackle challenging problems, work collaboratively in teams, and develop the technical and professional skills needed to create software that can make a real impact.

At UQ, you will develop strong foundations in programming and software development while gaining hands-on experience across the software engineering lifecycle. Through practical activities and team-based projects, you will learn how professional software systems are designed, developed and tested at scale.

As artificial intelligence transforms how software is developed, software engineers will play an increasingly important role in understanding, evaluating and improving AI-generated solutions, and in ensuring that the systems we rely on are reliable, secure and work as intended.

At UQ, Software Engineering combines strong technical foundations with hands-on, collaborative learning

You will go beyond learning how to write programs to designing, building and testing complete software systems, while working with others to solve complex real-world problems.

Team projects are an important part of the student experience. In Software Engineering Studio courses, for example, students work across multiple teams to develop different components of a shared software product. This reflects professional software development, where engineers must communicate, coordinate and integrate their work to build complex systems successfully.

The degree also includes 430 hours of Engineering Professional Practice, helping you connect what you learn at university with professional experience. You can further tailor your studies through available majors and minors, exploring complementary areas such as computer engineering, artificial intelligence, data science and design.

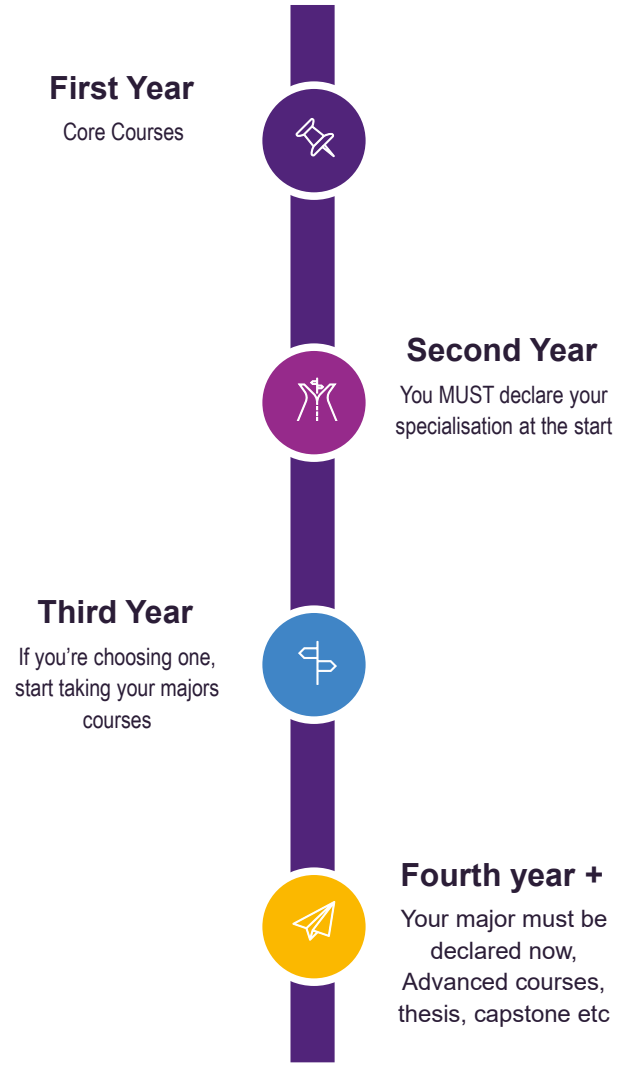
What You'll Experience

Software Engineering could be for you if you enjoy solving problems, creating things and understanding how technology works

Expect a mixture of programming, problem solving, software design and testing, teamwork and practical projects. Rather than working only on small individual exercises, you will progressively learn how to build larger systems with other students, similar to how software is developed professionally.

Software Engineering is particularly suited to students who enjoy computing but also want to build complete, working products and systems. It can also be a good choice if you're not yet sure which industry interests you, because software engineers work across:

- **technology**
- **health**
- **finance**
- **transport**
- **energy**
- **defence**
- **entertainment**
- **and many other fields.**



Your Final Year

Your final year is an opportunity to bring together the knowledge and skills you have developed throughout the degree through advanced courses and capstone experiences:

You will have opportunities to build a strong portfolio that demonstrates not only your technical capabilities, but also your ability to solve complex problems, communicate effectively and work collaboratively in teams.

Industry engagement, professional practice, networking and employability opportunities will help you prepare for the transition from university to your professional career. UQ's Innovation Showcase also provides an opportunity to present final-year projects, demonstrate your work and connect with industry professionals.

After You Graduate

A Software Engineering degree can lead to careers across almost every sector of the economy

Graduates may work as software engineers, software developers, application or web developers, cloud engineers, cybersecurity specialists, solutions architects, product managers or technology consultants.

The opportunities extend well beyond traditional technology companies. Software engineers develop systems for healthcare, banking and finance, transport, energy, defence, entertainment, government, telecommunications and many other industries. This means you can combine an interest in technology with an area that matters to you.

New and rapidly developing fields are also creating opportunities for software engineers. Artificial intelligence and machine learning, robotics, cybersecurity, digital health, quantum technologies and sustainable technology all depend heavily on sophisticated software systems.

The skills developed through Software Engineering—problem solving, programming, system design, testing, teamwork and managing complex technical projects—are highly transferable. As technology continues to evolve, graduates are equipped not only for today's software roles but also to contribute to technologies and careers that are still emerging.

The 2026 Average Annual Salary for Software Engineers in Australia is between:

$105K–$125K

seek.com.au

2025 Illuminate EECS Showcase Award Winners

Fiducial Frontiers - Hybrid Board Game with Vision-Based Object Tracking

by Thomas Dickson, Harrison Martin, Kate Lockyer, Cameron Miller, Swastik Lohchab, Kunwar Singh

Winner of Best User Experience Design Project, Fiducial markers are QR-code-like patterns (as seen on our token cubes) that can be easily tracked by computers. These markers allow us to use a camera to accurately track the 3D position and orientation of all cubes. This instantly has application in a board game, as now the computer can track the pieces and enforce the rules, leaving the players free to strategise and enjoy the game.

Mushroom Pet Pet

by Tsz Fai Wong, Carman Chan, Grace Hsieh, Neil Chang, Anthony Tang, Yuteng Niu

Winner of Best Software Project, the project addresses a fundamental gap in how humans interact with fungi: while mushrooms react dynamically to their environment through electrical signaling, these reactions remain invisible and imperceptible to us. By translating bioelectrical signals into sound, Mushroom Pet Pet enables mushroom home-growers to "hear" their fungi in a manner similar to how one might hear pet vocalizations. This process invites an emotional connection and educational curiosity, positioning mushrooms as organisms with a certain "presence" in the household rather than passive decorative plants.

"I chose software engineering because I love the first year courses that I had done and I also love the sense of satisfaction that you get when you complete little changes in code. Software engineering is in demand in many industries, so I know by doing software engineering, my career pathways will be endless."

Jessica Rock
Graduate, Bachelor of Engineering (Honours) (Software Engineering)

Find Your Community

Software Engineering students are part of a vibrant community across UQ Engineering and Computing

Students can connect with peers through student societies, hackathons, programming and cybersecurity activities, industry events and project showcases. These activities provide opportunities to meet students across different year levels, build technical and professional skills, work on projects outside the classroom and connect with industry.

Student societies related to Mechanical Engineering include:

- **UQ Cyber Squad - Elite, student-led and staff-supported competitive cybersecurity society**
- **UQCS – UQ Computing Society**
- **EUS – Engineering Undergraduate Society**
- **UQMARS – UQ Mechatronics and Robotics Society**
- **EBESS – Electrically Based Engineering Student Society**
- **UQSKIRTS - Mechatronics and Robotics Society**

Software Engineering Study Pathways

You can tailor Software Engineering towards your interests through majors and minors

Majors Include:

- **No Major**
- **Computer Engineering Major**

The Computer Engineering major provides additional knowledge of hardware systems, embedded devices, and interactions between software and hardware, which can be particularly useful for students Interested in robotics, autonomous systems, IoT and smart technologies.

Minors Include:

- **Artificial Intelligence Minor**
- **Design Minor**
- **Data Science Minor**

Software Engineering Study Plans

Here are the resources available to help you plan your degree

There is a specific order that we recommend you take your courses in. These study plans are designed to ensure that you meet your prerequisites and can take the courses in the semester that they are offered.

For more information

School of Electrical Engineering and Computer Science

T: +61 7 3365 2097
E: studentenquiries@eecs.uq.edu.au

https://www.eait.uq.edu.au/study-plans/undergraduate/software-engineering