



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Create change



Help your students link their classroom learning to a career with our

**Hands-on
workshops!**

HIGH SCHOOL WORKSHOPS

The Faculty of Engineering, Architecture and Information Technology offers a wide range of interactive workshops and activities for high school students interested in engineering, design and technology.

ACTIVITY	DESCRIPTION	DISCIPLINE	DURATION
Designing your place	This creative workshop gives you a chance to imagine and design a space just for you. You'll gain an insight into the architectural design process, learn more about the types of drawings architects make and get an overview of what it would be like to study architecture at UQ.	Architecture	1 hour
Aerospace engineering - Rockets	Aerospace engineers are tasked with, among other things, the design of rockets to deliver a payload and return it safely to the ground. Students will work together in groups to design, construct and launch a solid fuel model rocket. The workshop teaches concepts such as analysing and balancing forces, aerodynamics, differential equations and decision-making. An extended session (2.5hrs) will have students also calculating the predicted height of their rocket before launch.	Engineering	1.5 - 2 hours
Chemical engineering	Chemical Engineering plays an important role in addressing many of the key global challenges including climate change, energy supply, water and food security, improved public health, and sustainability. Experience hands-on challenges around these key areas and discover why Chemical Engineering is a career that shapes the world.	Engineering	1 hour
Engineers without borders - Sanitation and Water	These are two of the biggest issues facing less developed countries today. One billion people worldwide lack access to clean water while two billion lack access to sanitation. Students in this workshop will get a hands-on introduction to the life-saving process of water filtration and learn about how civil and environmental engineering contribute to a more sustainable environment.	Engineering	1 hour
Engineers without borders - Energy	Energy crisis happens around the world and it is the most serious in developing countries. This workshop will introduce students to some of the technologies that have been used to tackle the issues and their task is to determine their effectiveness in helping a community. A quick introductory session to solar panels is included.	Engineering	1 hour
Engineers without borders - Prosthetic	Engineers improve the lives of millions with contributions to medical technologies, including prosthetic limbs. In this workshop, students design and construct a prosthetic limb for an amputee – and have the opportunity to test its effectiveness against the other teams.	Engineering	1 hour
Materials engineering	Materials engineering is the basis of all forms of production and is concerned with the selection, processing and development of materials to design and make products. Students will see demonstrations of the role and performance of materials in engineering.	Engineering	1 hour

ACTIVITY	DESCRIPTION	DISCIPLINE	DURATION
An introduction to robotics	This workshop introduces students to the exciting world of robotics by building and programming robots. The workshop aims to improve the analytical and problem solving skills of students, and complements the new technology curriculum by providing a project-based learning activity.	Computer Science and Engineering	3 hours
Artificial Intelligence	The Artificial Intelligence workshop is aimed at students with some experience in robotics. Students will work with intelligent robotic systems and advanced programming concepts. All robots are built by the students and a 'survival of the fittest' challenge is the workshop highlight.	Computer Science and Engineering	3 hours
Algorithmic Thinking with Ozobots	By drawing paths and creating colour codes you can program a robot without the need of a computer. The students work in teams when creating a city for a robot (the Ozobot) to move around in. In a fun and creative workshop, the students are introduced to algorithmic thinking, prediction and planning.	Computer Science	1 hour
MaKey MaKey	Take the first step to learning about electronics and micro-controllers. With the use of a MaKeyMaKey kit you will create collaborative human-remote controllers and play Space Invaders or control a flight simulator. The workshop is fun and hands-on, and requires no former experience.	Computer Science	1 hour
App Development	Learn how to develop an app using MIT App Inventor.	Computer Science	3 hours
ICT Connects	The ICT Connects workshop consists of a series of computer-based and hands-on problem solving activities that demonstrate how ICT is applied in complex areas such as drug testing, flight control and fraud detection, as well as movie special effects, fashion design and games. Every workshop is customised to the participants' needs and skills.	Computer Science	2 hours
Interaction Design	Interaction Designers use information technology to support relationships between people and the products and services that they use, e.g. computers and smart phones. This workshop challenges students to research existing projects, to invent future solutions and to build their own project.	Computer Science	2 hours
Working with Arduinos (Micro Controllers)	Working with Arduinos@UQ is designed for secondary school students, and consists of a 3 hour workshop that allows the students to get a hands-on experience of wiring and programming an arduino.	Computer Science and Engineering	3 hours
Robotics Workshop for Teachers	Introductory Robotics Workshop Coding Made Easy with LEGO® Education EV3	Computer Science and Engineering	All day

Contact

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