POSITION DESCRIPTION

Position Title: Technical Officer/Senior Technical Officer - Electronic
Organisation Unit: Faculty of Engineering Architecture & Information Technology
Position Number: NEW
Type of Employment: Full-Time, Continuing
Classification: Broadband HEW Level 5/6

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks in the world’s top universities, as measured by several key independent ranking, including the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (65). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland’s highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.8 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see
UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

Organisational Environment

The Faculty of Engineering, Architecture and Information Technology (EAIT) has long, proud traditions of innovation and leadership across student education and research.

In just over a century, more than 27,000 Faculty graduates have gone on to use their UQ education to have significant impact on our state, our nation and across the world. We believe that lifelong success is fostered at UQ through great education – inspiring students to think differently, ask the difficult questions, be a positive disruptive influence, and fulfil every ounce of their potential.

Our research provides a rich and diverse flow of breakthrough technologies that are helping to improve communities around the world. From novel hydrogen storage and next generation polymers to biomedical engineering and mining safety, our research outcomes are solving problems for local and international communities, and our industry partners.

The Faculty recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position irrespective of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The Faculty strives to provide an inclusive working environment, and along with the University is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

The EAIT Faculty Workshop Group (FWG) plays a pivotal role in supporting teaching and research in design, manufacturing, electrical, electronic and instrumentation.

The FWG is structured under three teams: Skills and Design Training, Prototype Development, and Operations. The Skills and Design Training group will focus primarily on learning and includes the Architecture workshop, the Student Access Workshop (SAW), the Student Technology Centre (STC), and the proposed Student Access Laboratory. The Prototype Development group is involved with the design, development and maintenance of prototyping equipment, ranging from the manufacture of individual components to complex specialist apparatus for use in research and teaching. The group also has the capability to calibrate instrumentation and mechanical safety devices and is also available to participate in procurement activities involving laboratory and workshop equipment. The Instrumentation and Electronics workshop team will support both the Skills and Design and Prototype groups.

For more information about the Faculty, please visit: [www.eait.uq.edu.au](http://www.eait.uq.edu.au)

Information for Prospective Staff

Information about life at UQ including staff benefits, relocation and UQ campuses is available at - [http://www.uq.edu.au/current-staff/working-at-uq](http://www.uq.edu.au/current-staff/working-at-uq).
**DUTY STATEMENT**

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<th>HEW Level 5</th>
<th>HEW Level 6</th>
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<tr>
<td><strong>Primary Purpose of Position</strong>&lt;br&gt;The purpose of this position is to perform technical and workshop functions in support of academic and student activities across both learning and research. &lt;br&gt;Support includes but is not limited to aspects of prototype design, construction, product design, precision manufacture and assembly; operational and maintenance support. &lt;br&gt;The work will involve multiple materials and may require the incorporation of electronic components. Staff may be assigned to either the Skills &amp; Design Training or Prototype Development groups of the EAIT Faculty Workshop Group.</td>
<td><strong>Primary Purpose of Position</strong>&lt;br&gt;The purpose of this position is to perform advanced technical and workshop functions in support of academic and student activities across both learning and research. &lt;br&gt;Appointments at this level will support the Workshop Supervisors and provide consultation and design support to other staff within the workshop. &lt;br&gt;Support includes but is not limited to prototype design, construction, product design, precision manufacture and assembly, and operational and maintenance support. The work will involve multiple materials and may require the incorporation of electronic components. Staff may be assigned to either the Skills &amp; Design Training or Prototype Development groups of the EAIT Faculty Workshop Group.</td>
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<td><strong>Duties</strong>&lt;br&gt;Duties and responsibilities include, but are not limited to:</td>
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<td><strong>Technical</strong>&lt;br&gt;- Assist students and academic staff with elements of the specification, design and fabrication of research equipment, design prototypes, and other relevant project work. &lt;br&gt;- Be competent in the use of a wide range of electronic test equipment and have experience in: &lt;br&gt;  • use of digital and analogue test and measurement equipment &lt;br&gt;  • the use of electronic schematic &amp; PCB computer aided design (CAD) software &lt;br&gt;  • calibration of equipment and sensors for a variety of applications &lt;br&gt;  • electronic fault finding and repair techniques to component level</td>
<td><strong>Supervisory</strong>&lt;br&gt;- Assist Workshop Supervisors as required to ensure efficient operation of facilities, &lt;br&gt;- Deputise for the Workshop Supervisors in their absence &lt;br&gt;<strong>Technical</strong>&lt;br&gt;- Provide support and advanced level guidance to students and academic staff with the specification, design and fabrication of research equipment, design prototypes, and other relevant project work. &lt;br&gt;- Be competent in the use of a wide range of electronic test equipment and have experience in: &lt;br&gt;  • use of digital and analogue test and measurement equipment</td>
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- embedded software development, sensors, actuators and signal conditioning (Programming skills in at least one of embedded C/C++, LabVIEW, Python, or equivalent languages)
- the demonstration of practical trade skills (ie experience in integration of electronic instrumentation into mechanical and/or structural applications and development of software for embedded, data acquisition or control purposes)

- Be able to participate in the design and build of complex systems or structures that may require a combination of mechanical, structural and/or electronic aspects.
- Maintain the serviceability of equipment used throughout the workshops and ensure compliance with relevant safety standards
- Document equipment design, modification and repairs to a level sufficient to enable subsequent construction and maintenance by other personnel
- Assist other staff (academic, research or general) or students by providing relevant technical support and guidance as required.
- Actively participate in ensuring the highest standards of occupational health and safety are maintained

**Occupational Health and Safety**

- Assist with workshop inductions for new staff, students and visitors
- Perform Risk Assessments on activities undertaken to fulfill the role in accordance with the University’s Risk Management System (see the University’s website at [http://www.uq.edu.au/ohs/index.html?page=29960](http://www.uq.edu.au/ohs/index.html?page=29960))
- Comply with requirements of Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Faculty Unit.

- the use of electronic schematic & PCB computer aided design (CAD) software
- calibration of equipment and sensors for a variety of applications
- electronic fault finding and repair techniques to component level
- embedded software development, sensors, actuators and signal conditioning (Programming skills in at least one of embedded C/C++, LabVIEW, Python, or equivalent languages)
- the demonstration of practical skills (ie experience in integration of electronic instrumentation into mechanical and/or structural applications and development of software for embedded, data acquisition or control purposes)

- Be able to provide higher-level support for the design and build of complex systems or structures that may require a combination of mechanical, structural and/or electronic aspects.
- Maintain the serviceability of equipment used throughout the workshops and ensure compliance with relevant safety standards
- Assist other staff (academic, research or general) or students by providing relevant technical support and guidance as required.
- Proactively ensure that the highest standards of occupational health and safety are maintained

**Occupational Health and Safety**

- Conduct workshop inductions for new staff, students and visitors
- Perform Risk Assessments on activities undertaken to fulfill the role in accordance with the University’s Risk Management System (see the University’s website at [http://www.uq.edu.au/ohs/index.html?page=29960](http://www.uq.edu.au/ohs/index.html?page=29960))
- Comply with requirements of Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Faculty Unit.
**Other**

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- **University’s Code of Conduct**
- Requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
- The adoption sustainable practices in all work activities and compliance with associated legislation and related University sustainability responsibilities and procedures
- Requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University

Other duties consistent with the above as directed from time to time by supervisor.

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**Other**

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including but not exclusive to:

- **University’s Code of Conduct**
- Requirements of the Queensland occupational health and safety (OH&S) legislation and related OH&S responsibilities and procedures developed by the University or Institute/School
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- Requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related responsibilities and procedures developed by the University

Other duties consistent with the above as directed from time to time by supervisor.

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**Training Program and competency based assessment**

Training and development will be provided and include continuous professional development through attendance at technical training programs and workshops provided by universities or qualified technical training providers.

Progress to HEW Level 6 will be dependent upon successful demonstration of those competencies identified as the difference between the two levels and measured against performance criteria specified during the annual appraisal. Specifically HEW Level 5 appointees will be mentored into the higher level over time through working with senior staff. They will need to:

- Demonstrate an expert understanding of technical abilities and application to fabrication and interaction with staff and students, both undergraduate and research higher degree. Applicants will be expected to be familiar with all aspects of work within the workshops, before working independently
- Successfully manage and finish tasks with a high proficiency level as allocated to them by supervisors within time and budget allocation estimates
- Provide independent thinking and exercise judgement when working on projects for Chief Investigators and other staff on research grants. Applicants will be expected to be familiar with all aspects of the tasks and requirements and be able to advise on design issues, before working independently
- Demonstrate a sound knowledge of working within a technical workshop including all aspects of health, safety and wellness. All training, including all skill and operational requirements will be required including understanding of all SOPs and annual OHS inductions
Training under the Leadership & Management Development program should be undertaken, as well as some development and courses in how to train people in higher education.

Organisational Relationships

The position reports to the Supervisor of the nominated Faculty Workshop.
## SELECTION CRITERIA

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<th>HEW Level 5</th>
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<tr>
<td><strong>Essential</strong></td>
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<tr>
<td>• Bachelor degree in an electronic/electrical engineering; or diploma in Electronic Engineering with at least 3 years industrial or laboratory experience; or an equivalent combination of relevant industrial experience and education/training.</td>
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<td>• Basic skills instrumentation for control and data acquisition applications;</td>
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<td>• Knowledge and familiarity with electronic circuit prototype and cable assembly construction techniques;</td>
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<tr>
<td>• Demonstrated skills in design, prototyping and PCB CAD software.</td>
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<td><strong>Extensive experience in:</strong></td>
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<td>• Thorough in the approach to tasks; possession of good organisational skills, and a commitment to producing high quality work</td>
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- Bachelor degree in an electronic/electrical engineering with relevant industrial or laboratory experience; or an equivalent combination of relevant industrial experience and education/training. |
- Expert skills instrumentation for control and data acquisition applications; |
- Demonstrated knowledge of electronic circuit prototype and cable assembly construction techniques; |
- Proficient in design, prototyping and PCB CAD software. |
- Extensive experience in: |
  - use of digital and analogue test and measurement equipment |
  - the use of electronic schematic & PCB computer aided design (CAD) software |
  - calibration of equipment and sensors for a variety of applications |
  - electronic fault finding and repair techniques to component level |
  - embedded software development, sensors, actuators and signal conditioning (Programming skills in multiple embedded C/C++, LabVIEW, Python, or equivalent languages). |
  - the demonstration of practical skills (Experience in integration of electronic instrumentation into mechanical and/or structural applications and development of software for embedded, data acquisition or control purposes) |
- Sound knowledge of occupational health and safety requirements |
- Ability to work independently and as part of a team |
- Excellent communication with people at various levels in the university including academic staff, students and contractors |
- Thorough in the approach to tasks; possession of good organisational skills, and a commitment to producing high quality work |
- The ability to adapt to working within a wide
Desirable
- The ability to adapt to working within a wide variety of engineering disciplines
- Ability to instruct students and staff in mechanical fabrication techniques and the safe handling of tools and equipment
- Knowledge of sensors and actuators, including strain gauges, RTD's, thermocouples, 4-20mA loop sensors, DC motors, encoders, pumps.
- Relevant technical experience in a tertiary teaching and research environment.

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<th>Desirable</th>
<th>variety of disciplines and across a wide range of possible projects including those in architecture and the built environment.</th>
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| Demonstrated ability to instruct students and staff in fabrication techniques and the safe handling of tools and equipment | Desirable
- Additional post trade training in system operation and maintenance (including involvement with SCADA/PLC equipment for control and monitoring applications)
- Experience in work flow management and supervision of junior staff
- Knowledge of sensors and actuators, including strain gauges, RTD's, thermocouples, 4-20mA loop sensors, DC motors, encoders, pumps.
- Relevant technical experience in a tertiary teaching and research environment
- Experience in the working with mechanical/electronic systems in the area of instrumentation and/or system design. |

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University's Diversity and Inclusion webpage (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.