At Monash, work feels different. There’s a sense of belonging, from contributing to something groundbreaking – a place where great things happen. You know you’re part of something special and purposeful because, like Monash, your ambitions drive you to make change.

We have a clear purpose to deliver ground-breaking intensive research; a world-class education; a global ecosystem of enterprise – and we activate these to address some of the challenges of the age, Climate Change, Thriving Communities and Geopolitical Security.

We welcome and value difference and diversity. When you come to work, you can be yourself, be a change-maker and develop your career in exciting ways with curious, energetic, inspiring and committed people and teams driven to make an impact – just like you.

We champion an inclusive workplace culture for our staff regardless of ethnicity or cultural background. We have also worked to improve gender equality for more than 30 years. Join the pursuit of our purpose to build a better future for ourselves and our communities – #ChangeIt with us.

The Faculty of Engineering is the #1 Engineering School in Australia*, renowned worldwide for the quality and calibre of our teaching, research and graduates. We offer a comprehensive selection of undergraduate, graduate, postgraduate and higher degree by research programs in a wide range of engineering disciplines. Our research activities provide a platform for establishing a thriving educational enterprise and our staff are committed to creating a dynamic learning environment. The research activities range from fundamental studies to research with a strong applications orientation.)

The Monash Department of Civil Engineering is a beacon of innovation, excelling in education and groundbreaking research. We are active in both undergraduate teaching and postgraduate
research and have an international reputation for quality research programs and postgraduate training. We maintain strong links with engineering professionals and professional bodies to ensure our programs remain at the leading edge of professional practice. Notably, the department is at the forefront of research in urban water management and low-cost sensor technology development, contributing to advancements in sustainable infrastructure and smart water management. With a global perspective and collaborative ethos, graduates are well-equipped to make meaningful contributions in civil engineering, reflecting the department’s commitment to addressing real-world challenges.

Monash and the Faculty of Engineering values staff diversity and champions inclusive practices. We are committed to equitable decision making and apply the principles of achievement relative to opportunity in our selection processes.

**POSITION PURPOSE**

The Research Officer provides a variety of high-quality research services to support the development of smart water monitoring and control technologies. The Research Officer performs a range complex research activities and hardware engineering tasks that play a critical role in supporting the delivery of (low-cost environmental sensor development) program outcomes. This includes undertaking design and optimise printed circuit board layouts for environmental sensors, develop necessary sensor firmware, design and conduct lab trials and field experiments, develop operating procedures and fix operational issues as they arise, undertake data analysis, and perform field maintenance, while ensuring a compliant and safe research environment.

The Research Officer works closely with leading researchers and PhD students to understand the research requirements and operates with excellence in process and judgement to provide efficient research services in accordance with research protocols and standards.

**Reporting Line:** The position reports to Academic in the Department of Civil Engineering

**Supervisory Responsibilities:** Not applicable

**Financial Delegation:** Not applicable

**Budgetary Responsibilities:** Not applicable

**KEY RESPONSIBILITIES**

1. Design and optimise and maintain PCB layouts for low-cost environmental sensors, considering factors such as signal integrity, power distribution, sensor function and manufacturing, and component placement.
2. Develop and maintain sensor reliable and power-efficient sensor firmware.
3. Test and troubleshoot sensors under both lab and field conditions
4. Design, develop and implement sensor calibration protocols
5. Conduct sensor prototyping, installation, maintenance, and repair in the field
6. Analyse and interpret sensor data for research purposes
7. Work with cross-functional teams to develop and integrate sensors into environmental systems
8. Collaborate with project partners to understand their needs and provide technical support
9. Work with research fellows and PhD students to deliver research projects
10. Keep abreast of developments, activities and protocols in relevant research areas through liaison with staff and peers, reading relevant literature and attending meetings and seminars
11. Ensure compliance with established research methodology, policy, protocols, OHS and regulatory requirements and take steps to identify and minimise OHS risks where appropriate

12. Actively participate in and implement continuous improvement activities relating to project, research or technical procedures and quality assurance standards

13. Build and sustain effective working relationships with a network of colleagues, research collaborators and other stakeholders to support and facilitate research objectives

14. Other duties as directed from time to time

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
   - A bachelor’s (or higher) degree in electrical engineering or a related field; or
   - extensive experience and specialist expertise in PCB design.
   - Experience in embedded programming.

Knowledge and Skills

2. High-level analytical, technical, data analysis and research skills and a demonstrated capacity to develop and implement effective technical and research processes and systems

3. Excellent organisational skills, including the ability to set priorities, manage time and plan work to meet deadlines

4. Excellent and project coordination skills with the ability to support projects through to completion in accordance with agreed standards and timeframes

5. Demonstrated ability to work as an effective member of a team as well as the ability to exercise high levels of independence, judgement and initiative

6. Proven ability to adhere to protocols, standards and guidelines, including a thorough understanding of confidentiality, privacy and research ethics principles as required

7. Highly-developed written and verbal communication skills, including the ability to interact with a diverse range of stakeholders and negotiate positive outcomes to complex issues

8. Demonstrate proficiency in utilizing PCB design tools effectively

9. Showcase familiarity with cost-effective manufacturing processes and techniques specifically related to PCB production and including managing bills-of-materials and component sourcing. Exhibit either experience or a keen interest in the development of sensors

10. Showcase strong programming skills in relevant languages or platforms. Fluency in C is especially desirable.

11. Deep understanding of the interplay between hardware and software and ability to develop reliable firmware for hardware projects.

12. Competence with version control and ability to understand and maintain existing hardware and software.

13. Display knowledge in signal processing, control systems, and techniques for sensor data acquisition.

OTHER JOB RELATED INFORMATION

● Travel to other campuses of the University may be required
● There may be a requirement to work additional hours from time to time
● There may be peak periods of work during which taking of leave may be restricted

GOVERNANCE

Monash University expects staff to appropriately balance risk and reward in a manner that is sustainable to its long-term future, contribute to a culture of honesty and integrity, and provide an environment that is safe, secure and inclusive. Ensure you are aware of and adhere to University policies relevant to the duties undertaken and the values of the University. This is a standard which the University sees as the benchmark for all of its activities in Australia and internationally.