



POSITION DESCRIPTION

School of Electrical, Mechanical and Infrastructure
Melbourne School of Engineering

Research Design Engineer

POSITION NO	0045761
CLASSIFICATION	Academic Specialist (Level B)
SALARY	\$98,775 - \$117,290 per annum
SUPERANNUATION	Employer contribution of 17%
EMPLOYMENT TYPE	<p>Full-time (fixed-term) position available for up to 3 years</p> <p>Fixed term contract type: Specific Task or Project</p> <p>The Melbourne School of Engineering is strongly committed to supporting diversity and flexibility in the workplace. Applications for part-time or other flexible working arrangements will be welcomed and will be fully considered subject to meeting the inherent requirements of the position.</p>
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
CONTACT FOR ENQUIRIES ONLY	<p>Email: Andrew Western Tel: +61 3 8344 7305 Email: a.western@unimelb.edu.au</p>

Please do not send your application to this contact

For information about working for the University of Melbourne, visit our websites:
about.unimelb.edu.au/careers

Position Summary

The University of Melbourne recently announced the building of a new, seven-hectare campus at Fisherman's Bend as part of its approximately \$1 billion commitment to create a world-class engineering school for the 21st century. The new campus – just five kilometres from the city and within the old General Motors Holden site – is set to open in the early 2020s and will be the centrepiece of Australia's leading precinct for advanced manufacturing, design, engineering and technology excellence. It will be a catalyst for new collaborations and investments, connecting industry and research in the precinct; giving our researchers and students opportunities to work alongside industry, and pursue rich careers right here in Australia. The new campus will initially enable 1,000 engineering and IT students and academics to collaborate with world-leading local and international companies across industrial sectors as diverse as transport, energy, food, mining, infrastructure and water.

As part of this endeavour, the space allows the University to build large-scale research facilities that the Parkville campus cannot accommodate. This will include wind and water tunnels, smart grid technologies, autonomous vehicle testing and pre-fabricated building manufacturing. To help realise this, Melbourne School of Engineering (MSE) is looking for an experienced and detail-oriented research design engineer to join our growing team. In this position, you will work with the MSE staff to investigate options and develop new ideas and prototypes to create and build research facilities for the new campus.

The Research Design Engineer will be responsible for designing, researching, prototyping, creating detailed engineering documentation, estimating and process improvement. The successful candidate will report directly to the MSE Director for Infrastructure, and collaborate with Academics, University's infrastructure services, procurement and Facilities and OH&S teams. They will also collaborate with external project consultants. This is an excellent opportunity to develop an experimental space, unprecedented in Australia, and work with a team that is dedicated and passionate about building new experimental facilities.

The successful applicant will create detailed plans of bespoke experimental research facilities for the research groups in the Electrical, Mechanical and Infrastructure (EMI) School. Responsibilities will include scoping the project to the specifications of the academics and industry who will be the main users of the laboratory space. A knowledge of fluids engineering, engineering mechanics, and the manufacturing processes relevant to facility design will be highly beneficial. You will coordinate with a variety of departments within the University, and will be expected to judiciously weigh design choices. These include the technical aspects, project costs, safety and other regulations, operability, maintenance and environmental concerns. You will be expected to assist with facility development from feasibility to completion of the design and construction of new and refurbished facilities, and work as a member of the design team to bring forward the capital works projects to programme and budget. The successful candidate is expected to have strong engineering analysis skills the ability to generate detailed CAD drawings, a knowledge of manufacturing. In executing the role, it is paramount that Health & Safety, ethical and quality requirements, both legislative and University specific, are respected and taken into account.

You will need to work flexibly in a dynamic environment as MSE and its partners scale for growth and investment over the next 10 years, particularly in relationship to helping the academic staff reach the requisite research income and impact aims of the MSE2025 initiative.

1. Selection Criteria

1.1 ESSENTIAL

- ▶ PhD in Mechanical or Civil engineering or another relevant engineering discipline, or an equivalent mix of education and relevant experience.
- ▶ Demonstrated project experience in complex environments, including the ability to translate strategy into tangible project outcomes and contribute to the planning, options development, feasibility assessment, and timely project execution.
- ▶ Experience in designing, building, setting-up and validating experimental facilities from concept to actualisation.
- ▶ Technical understanding of fluid mechanics, pressure vessels, engineering testing equipment, engineering mechanics, and manufacturing processes.
- ▶ Ability to interface effectively with external vendors and steward bespoke facility elements through the University procurement processes.
- ▶ A working knowledge of research instrumentation.
- ▶ Extensive experience working within a scientific laboratory environment, and establishing and maintaining effective experimental spaces, ensuring operational effectiveness and providing technical training to staff.
- ▶ Considerable aptitudes in CAD and engineering drawings, and proficient computer skills, including Microsoft Office Suite, and Matlab.
- ▶ Demonstrated knowledge of relevant occupational health and safety legislation, laboratory regulatory and statutory requirements.
- ▶ Commitment and adherence to the highest standards of scientific and ethical integrity.
- ▶ Understanding of different construction and manufacturing methods.

1.2 DESIRABLE

- ▶ A driven, self-motivated attitude, with the ability to work on your own initiative and influence key decisions and to integrate quickly into a team environment.
- ▶ Knowledge of materials and the mechanical, thermal, and electrical implications of their selection.
- ▶ Fluency in mechanical 3D modeling methods and practices for components, assemblies, and drawing creation - Knowledge of Mechanical Design principles including Geometric Dimensioning and Tolerancing.

2. Key Responsibilities

The incumbent will have the responsibility of working with the EMI academics who are building or installing bespoke research facilities at the Fisherman's Bend Campus. The incumbent is responsible for ensuring all OHS requirements of the University and legislation are met, for infrastructure and people.

2.1 SCOPING, PLANNING & PROTOTYPING

- ▶ Receive the Clients brief/remit, assist in formulating the scope of works and develop the facility design requirements.
- ▶ Consult with Academics and other stake-holders and liaise with the MSE Deputy Infrastructure Director to formulate a plans.
- ▶ Develop a detailed plan for a bespoke engineering research facilities based on the requirements specified.
- ▶ From a design brief, think of possible design solutions, research the efficacy of candidate designs, including cost-effectiveness, usability, instrumentation considerations, environmental impact and safety.
- ▶ Plans to incorporate work-flow, laboratory lay-out and services needed to run the experimental space efficiently.
- ▶ Develop the needed design drawings, using established and developed engineering design practices.
- ▶ As part of the plans offer a combination of – off the shelf, custom built externally sourced or completely outsourced solutions.
- ▶ Develop plans for a large research wind tunnel facility, keeping in mind structural elements.
- ▶ Develop plans for fire research facility associated with civil structures
- ▶ Evaluate the function and safety of the lab space to ensure they have a practical design.
- ▶ Work effectively within a multi-disciplinary design environment such that designs consider the impact across all relevant disciplines.
- ▶ Collaborate with other engineers, managers, and creative team
- ▶ Estimate and establish cost parameters and budgets for design
- ▶ Prepare documentations, such as testing protocols and manuals
- ▶ Review and oversee manufacturing of designs, including the interfacing with external vendors
- ▶ Preparation of and implementation of facility validation plans.
- ▶ Understand and ensure compliance with clients specifications, user requirement specifications, health and safety requirements, UoM requirements, legislation, design standards and good engineering practice.
- ▶ Plans, prototypes and deliverables to be OH&S compliant, follow electrical safety and structural regulations.

2.2 ENGAGEMENT AND STAKEHOLDER MANAGEMENT:

- ▶ Liaising with key stakeholders to ensure the deliverables satisfy specifications.
- ▶ Report regularly on progress of the projects to key stakeholders.
- ▶ Provide clear, consistent and timely project status updates detailing progress, issues/concerns and solutions.
- ▶ Nurture a close working partnership with cross-functional colleagues to ensure that the design intent is expressed in the finished product.
- ▶ Act as a source of expert advice on the experiential lab spaces for MSE.
- ▶ Engage effectively and professionally with all stakeholders.

2.3 SERVICE AND LEADERSHIP

- ▶ Staff must comply with all relevant requirements under the University's risk management framework including legislation, statutes, regulations and policies.
- ▶ Undertake other tasks as requested by the supervisor.

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy 2015-2020 and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to service for excellence and reach the targets of Growing Esteem.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

<http://safety.unimelb.edu.au/topics/responsibilities/>

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 SCHOOL OF ELECTRICAL, MECHANICAL AND INFRASTRUCTURE ENGINEERING

The School of Electrical, Mechanical and Infrastructure Engineering undertakes teaching and research across a range of disciplines that are internationally recognised for their contribution to fundamental research. It has a number of well-established industry linkages and international partnerships. It is building a vibrant profile of interdisciplinary research, working with industry with an aim to contribute to society. It offers a comprehensive range of accredited Masters of Engineering and Master of Information Technology programs taught through the Electrical, Mechanical and Infrastructure departments as well as professional Masters programs. It has a substantial cohort of research higher degree students.

The School's aim is to attract and retain outstanding staff. The School is highly supportive of increasing the number of female staff.

5.2 MELBOURNE SCHOOL OF ENGINEERING

www.eng.unimelb.edu.au/

The Melbourne School of Engineering is one of Australia's leading Engineering Schools and aims to be the school of choice for the highest performing students and research staff in Australia and within the Time Higher Education Supplement top twenty Schools of Engineering internationally by 2020.

5.3 THE UNIVERSITY OF MELBOURNE

The University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The University offers staff many benefits and prospective staff are encouraged to view the following web links:

www.unimelb.edu.au

www.growingesteem.unimelb.edu.au

www.unimelb.edu.au/careers

5.4 EQUITY AND DIVERSITY

Another key priority for the University is access and equity. The University of Melbourne is strongly committed to an admissions policy that takes the best students, regardless of financial and other disadvantage. An Access, Equity and Diversity Policy Statement, included in the University Plan, reflects this priority.

The University is committed to equal opportunity in education, employment and welfare for staff and students. Students are selected on merit and staff are selected and promoted on merit.

5.5 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University. Comprehensive information about the University of Melbourne and its governance structure is available at www.unimelb.edu.au.