Lab ectory Engineer – Civil & Environmental

POSITION NO 0047982

CLASSIFICATION Research Assistant

SALARY $69,148 - $ 93,830 p.a.

SUPERANNUATION Employer contribution of 9.5%

EMPLOYMENT TYPE Full-time (fixed-term) position

OTHER BENEFITS http://about.unimelb.edu.au/careers/working/benefits

HOW TO APPLY Online applications are preferred. Go to http://about.unimelb.edu.au/careers, under ‘Job Search and Job Alerts’, select the relevant option (‘Current Staff’ or ‘Prospective Staff’), then find the position by title or number.

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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 joining.unimelb.edu.au
The University of Melbourne

Established in 1853, the University of Melbourne is a public-spirited institution that makes distinctive contributions to society in research, learning and teaching and engagement. It’s consistently ranked among the leading universities in the world, with international rankings of world universities placing it as number 1 in Australia and number 32 in the world (Times Higher Education World University Rankings 2017-2018).

https://about.unimelb.edu.au/strategy/growing-esteem

Melbourne School of Engineering

Melbourne School of Engineering (MSE) has been the leading Australian provider of engineering and IT education and research for over 150 years. We are a multidisciplinary School organised into three key areas; Computing and Information Systems (CIS), Chemical and Biomedical Engineering (CBE) and Electrical, Mechanical and Infrastructure Engineering (EMI). MSE continues to attract top staff and students with a global reputation and has a commitment to knowledge for the betterment of society.

Our ten-year strategy, MSE 2025, is our School’s commitment to bring to life the University-wide strategy Growing Esteem and reinforce the University of Melbourne’s position as one of the best in the world. Investment in new infrastructure, strengthening industry engagement and growing the size and diversity of our staff and student base to drive innovation and develop the transformative technologies of the future are all fundamental principles underpinning MSE 2025.


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. A major focus of the school is to attract and retain outstanding and internationally recognised academic staff. The School is committed through strategy, culture and mentorship to increasing the number of female engineers and scientists on its staff.

Department of Infrastructure Engineering

Combining civil engineering, environmental engineering and geomatics in one department creates a broad scope for our research and engineering education. Our focus is to solve infrastructure problems in a sustainable way.
The Departmental philosophy is to attract and retain the highest quality staff available in order to maintain a vigorous research effort. Our strategic plan is to address the most urgent contemporary problems of our rapidly developing industrial society, with investigations into the engineered and natural environment. www.ie.unimelb.edu.au

**Position Summary**

The Laboratory Engineer – Civil & Environmental (which includes Geotechnical, Materials, Structure, Ecohydraulics and Environmental engineering subdisciplines) will be a member of the Infrastructure Engineering laboratories team that is responsible for the provision of specialised technical support to the Geotechnical Engineering Laboratory, the Geopolymer Laboratory, the Francis Structural Laboratory, the Sexton Ecohydraulics Laboratory, and the Vasey Laboratory (Environmental Field Research) within the Department of Infrastructure Engineering. The new Geotechnical Engineering Laboratory is becoming a state-of-the-art facility with features including; advanced and basic geotechnical laboratory equipment facilities, instrumentation, data acquisition systems, fibre optic fabrication and near surface geophysical testing equipment. The laboratory is expected to be relocated to new and improved laboratory premises in the Fishermans Bend Campus of the university in late 2021.

The Laboratory Engineer will assist with the department’s masters by coursework final year student projects and RHD students in the laboratory (and field, seldomly), the development of practical classes from the Geotechnical, Civil and Environmental Engineering disciplines. The Laboratory Manager will assist and coordinate the associated Occupational, Health and Safety (OH&S) matters, including attendance to OH&S committee meetings. The Laboratory Engineer will learn how to use and maintain the technical equipment available in the lab as well as provide training and supervision to the users.

The position is broad in scope and requires a high degree of initiative, problem solving skills, technical ability and self-management to deal with the range of complex functions, equipment and tasks. This includes the day-to-day management, operation and maintenance of the laboratories, post-graduate research, research projects and (occasionally) commercial testing. This position works closely with all Laboratory Managers, will report to the Geotechnical Engineering and Geopolymer Laboratory Managers (currently A/Prof Guillermo Narsilio and Dr Rackel San Nicolas) and will brief on and attend the IE Laboratory Committee meetings as required.

**1. Selection Criteria**

**1.1 ESSENTIAL**

- Completion of degree in Civil Engineering AND/OR an equivalent combination of relevant experience in an industrial/scientific Geotechnical/Soil Science-based laboratory with experience in geotechnical and civil processes and analytical testing processes and/or education/training;
Knowledge and experience with the hands-on operation of advanced and basic geotechnical laboratory equipment for educational, research and commercial testing applications;

Knowledge and expertise in the use of a wide range of civil engineering laboratory equipment and instrumentation;

Knowledge and experience in the development of Occupational Health and Safety policies, Risk Management procedures and compliance;

Ability to demonstrate the use and functionality of instrumentation systems, computer software and specialised geotechnical (and other civil) laboratory equipment to undergraduate and postgraduate students in a laboratory environment and in the field during external field testing investigations;

Skill in performing and analysing results of specialised tests such as triaxial shear tests, direct shear tests, Rowe cell consolidation tests, California Bearing Ratio, repeated load triaxial, hydraulic permeability using advanced automatic hydraulic actuators and flow pumps, data acquisition systems, hydraulic systems and UTMs. Skills in specimen preparation and testing of soils and pavement aggregates, instrumentation and data acquisition systems;

Skill in performing structural and materials experiment as well as service the equipment if needed, such as compressive flexural strength of steel and concrete, use of actuator and structural bending moment measurement on full scale sample, non-destructive equipment of structural concrete;

Ability to prepare laboratory reports for consulting and research projects including analysis and presentation of results;

Ability to demonstrate, support and supervise undergraduate and postgraduate students in the operation of complex equipment testing setups and the use of associated equipment’s software for research projects and practical laboratory work;

Design and manufacture complex components & equipment from basic drawings supplied by students and researchers;

Excellent written, oral and interpersonal communication skills to facilitate the provision of advice and support required by both staff and students, and;

Proven ability to work to deadlines and to establish priorities;

Ability to work as part of a team, or independently, when required;

A high level of computer literacy with proficiency in the use of Microsoft Office software, internet and email applications.

An understanding of Occupational Health and Safety (OHS) issues.

1.2 DESIRABLE

Victorian or valid driver’s licence;

Practical engineering skills in equipment manufacture, fabrication, welding, machining, fitting and use of power tools.

Experience in a tertiary education environment; and

2. Special Requirements

Travel to non-Parkville campuses, off campus and other areas may be required.
3. Key Responsibilities

Creating excellent learning environments

- Contribute to the day-to-day activities of all the infrastructure Engineering department’s Laboratories, including the design, development, maintenance and repair of complex equipment to support research and teaching programs.
- Running the laboratories including high-tech automated equipment and basics as well as other equipment on a daily basis.
- Maintaining all equipment and cleanliness of the laboratories to a professional laboratory standard.
- Assisting Master by Coursework and Higher Degree by Research students to operate the various research and teaching equipment including high-level computerized geotechnical equipment. Assisting Master by Coursework and Higher Degree by Research students in field works and sampling works.
- Preparation and management of specimens for (occasional) commercial testing and for student program as directed by the Laboratory Managers.
- Design and manufacture complex components & equipment from basic drawings supplied by students and researchers.

OHS:

- Comply with all Occupational Health and Safety Instructions, policies and procedures including departmental safety manuals.
- Update the above related paperwork regularly and diligently.
- Develop and maintain risk management strategies and procedures for the civil laboratories.
- Ensure safety of design, construction and operations of all work undertaken in the preparation and running of testing in the laboratories;
- Maintain a safe, efficient and effective work environment. The civil laboratories are highly visible to the public and must be maintained in a manner which provides a positive impression in terms of organization and efficiency.
- Report hazards/incidents to manager/supervisor and take action to avoid, eliminate or minimize hazards
- Seek information or advice where necessary before carrying out new or unfamiliar work
- Be familiar with emergency and evacuation procedures and comply with instructions given by emergency response personnel

Building relationships: Provide a high level of specialized technical knowledge to students, staff and visiting academics in relation to research project work and participate in the development of projects, testing and research.

Educational leadership: Provide technical and scientific contributions to the geotechnical and other civil and environmental laboratories as required and contribute collaboratively to the enhancement and development of research projects as appropriate.

Service excellence:

- Responsible for the service and maintenance of equipment and the replacement of consumables used
- Maintain and operate an inventory and booking system for the use of equipment by research and/or parties external to the School;
o Support the academic goals and operations of the Department in a timely manner, in particular by providing effective, specialized technical support services.

o Assist in the sourcing and procurement of materials and equipment as per the University's purchasing policy.

o Liaise with external suppliers for competitive quotations.

Teamwork: Works effectively within the team and demonstrates a commitment to teamwork and the maintenance of a supportive work environment.

Contribute to other School-wide activities and other duties as required by the Facilities & OHS Services Unit;

Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 5.

4. 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 deserve to service for excellence and reach the targets of Growing Esteem.

5. 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.
6. Job Complexity, Skills, Knowledge

6.1 LEVEL OF SUPERVISION / INDEPENDENCE
The Laboratory Engineer reports directly to the Geotechnical Engineering Laboratory Manager. Broad supervision, some training and general direction will be provided and duties will be performed independently; however, non-standard situations should be referred back to the Laboratory Managers. The Laboratory Engineer also refers to the Senior Laboratory Technical Officer in the Wet Laboratories on safety policy and budgetary matters. Liaison between the Geotechnical Engineering Laboratory Manager and the Senior Laboratory Technical Officer and academic staff will be regular, but it will be necessary for the Laboratory Engineer to maintain objectives and targets and undertake new initiatives using their own management capabilities.

6.2 PROBLEM SOLVING AND JUDGEMENT
The Laboratory Engineer must show initiative and creativity in providing solutions to technical issues and problems. This will require the ability to interpret policy, precedent or standards in order to deliver developments or modification of existing practices. It is also expected that staff at this level will be able to review current practices, work flow and operations and be adept in devising new methods and practices to achieve improvements, streamlining or adaptation.

6.3 PROFESSIONAL AND ORGANISATIONAL KNOWLEDGE
The Laboratory Engineer must possess a high level of operational knowledge of equipment and parts used in teaching and research laboratories. Experience with Geotechnical engineering processes and/or analytical testing processes are expected.

6.4 RESOURCE MANAGEMENT
Management of time is important for this position as work has to be completed within a set time frame to allow research work and teaching programs to continue unimpeded. Machinery, instruments and equipment must be maintained and serviced so that it is available for use and operates to the specified tolerances at all times.

6.5 BREADTH OF THE POSITION
The position is required to display a wide range of skills to carry out work ranging from routine repairs on apparatus to the operation of intricate and complex instruments. These instruments, sometimes of a unique and innovative nature, must be operated and maintained to a high level of accuracy and tolerance to ensure the precision of scientific measurements in teaching, research and commercial testing.

The position liaises with a variety of customers from within the civil engineering discipline, teaching laboratory staff, students and research groups on the work requirements. The incumbent must have the ability to interact with a wide range of clients, many with diverse, multicultural backgrounds.