

Position description

Senior Lecturer in Geomechanics / Geotechnical Engineering

| | |
|----------------------------------|------------------------|
| Department/Unit | Civil Engineering |
| Faculty/Division | Faculty of Engineering |
| Classification | Level C |
| Work location | Clayton campus |
| Date document created or updated | 30 June 2017 |

Organisational context

Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit www.monash.edu.

Monash University is an energetic and dynamic university committed to quality education, outstanding research and international engagement. A member of Australia's Group of Eight research intensive universities, it seeks to improve the human condition and is committed to a sustainable future. Monash has six campuses in Victoria, a campus in Malaysia, a campus in South Africa, a centre in Prato, Italy, and numerous international partnerships and cooperative ventures. Monash has over 63,000 equivalent full-time students spread across its Australian and off-shore campuses, and over 7,200 full time equivalent staff. Almost 3,000 of these staff members are academic staff.

The **Faculty of Engineering** is one of the best in Australia, renowned worldwide for the quality and calibre of our teaching, research and graduates. We offer a comprehensive range 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 faculty has five departments operating from the Clayton campus of Monash University – Chemical Engineering, Civil Engineering, Electrical and Computer Systems Engineering, Materials Engineering and Mechanical and Aerospace Engineering. The School of Engineering operates from the Malaysian campus. In addition, there are 15 research institutes and centres with researchers involved in more than 12 cross institutional centres focusing on key technologies. Monash Engineering also has strong links with other research organisations, including CSIRO and DSTO.

Monash Engineering offers a comprehensive range of education programs – bachelor degrees, graduate and postgraduate certificates, master degrees by coursework, masters by research and PhD in a wide range of disciplines including: aerospace, biological, chemical, civil, electrical and computer systems, environmental, materials, mechanical, mechatronics and telecommunications engineering.

A member of the influential Group of Eight (Go8) research universities, the Faculty of Engineering is involved in extensive research activities. To support this activity and the teaching program the faculty has well-equipped laboratories and many items of large infrastructure, from advanced imaging and visualisation facilities and electron microscopes, to the largest wind tunnel in the southern hemisphere. To learn more about the Faculty of Engineering, please visit our website: www.eng.monash.edu.au.

The **Department of Civil Engineering** at Monash University enjoys an international reputation for education and research in the six major disciplines of Geotechnical Engineering, Structural Engineering, Transport Engineering, Water Engineering, Environmental Engineering and Resources Engineering. The department has considerable physical facilities supporting its research and teaching activities, and is constantly evaluating and upgrading these facilities in order to meet the level appropriate to the contemporary practice of engineering. For more information about us and the work we do, please visit our website:

www.eng.monash.edu.au/civil.

The department has three main research themes including 7 areas of research focus (see <http://www.eng.monash.edu/civil/research/>). The Department is also central to the Monash Infrastructure (MI) research institute that started in early 2016; MI has activities associated to geotechnical engineering.

The Lecturer in Geomechanics will be working within the department's geotechnical group, which is one of the leading geotechnical research groups in Australia and internationally. The Department is looking to build on existing research strengths, particularly in areas related to computational and experimental geomechanics.

The group has access to one of the best modern research facilities for laboratory based research, for example, the world largest high-pressure high-temperature true triaxial rock testing chamber (specimen size up to 750x750x750 mm, stress up to 350 MPa and temperature up to 450 degree C), the world first true triaxially compressed split Hopkinson pressure bar for impact testing. The group collaborates with other research groups across the university and with researchers nationally and internationally.

Position purpose

A Level C academic is expected to make significant contributions to the teaching effort of a department, school, faculty or other organisational unit or an interdisciplinary area. An academic at this level is also expected to play a major role in scholarship, research and/or professional activities.

The Senior Lecturer is responsible for maintaining and developing their scholarship, research and/or relevant professional activities, as well as making significant contributions to the teaching effort of the University. The incumbent will utilise their strong teaching, communication and research skills, working within the Geotechnical Engineering Group in the Department of Civil Engineering. Expertise in computational and experimental geomechanics would complement the capabilities of the existing staff in the Geomechanics Group.

The position, while based in China and Australia, will support the Master of Civil Engineering (Geotechnical Engineering) to be taught at the Southeast University - Monash University Joint Graduate School in Suzhou, China. Consequently, the incumbent will be required to spend long periods of time in China (around 6 months of the year). This is a new campus located in the heart of China's premier research and education precinct. The Master of Civil Engineering (Geotechnical Engineering) is a coursework postgraduate qualification that is being offered to full time students at the Suzhou campus. An option is also available for students in the program to complete part of their Masters degree at the Monash Clayton Campus.

Reporting Line: The position reports to the Head of Department, Civil Engineering

Supervisory responsibilities: Postgraduate/PhD research students

Financial delegation and/or budget responsibilities: Not applicable

Other job related information

International travel to Southeast University Monash University Joint Graduate School in Suzhou, China. The successful candidate is expected to spend around 6 months in the Monash campus in China.

Key responsibilities

Specific duties required of a Level C academic will include:

1. The development and conduct lectures on geomechanics or geotechnical engineering, computation methods
2. The conduct of tutorials, practical classes, demonstrations, workshops, student field excursions, clinical sessions and studio sessions
3. The initiation and development of course material in line with best practice methodologies

4. Course coordination and course content and delivery enhancement, including the preparation and delivery of lectures and seminars, and the design, implementation and review of educational innovations
5. Consultation with students including marking and assessment of coursework and guidance on areas of development
6. Supervision of the program of study of honours students and of postgraduate students engaged in course work, and supervision, support and guidance to major honours or postgraduate research projects
7. The conduct of research and the undertaking of a significant role in research projects including, where appropriate, leadership of research teams
8. Involvement in professional activities such as networking and industry events to stay abreast of academic and industry changes and developments and how these can be applied at Monash
9. Attend and contribute to departmental, school and/or faculty meetings and play a major role in planning or committee work
10. Broad administrative functions; the majority of which are connected with the subjects in which the academic teaches

Key selection criteria

Education/Qualifications:

1. The appointee will possess:
 - an undergraduate degree in Civil Engineering or a closely related discipline, and a doctoral degree in Civil Engineering, Mechanics, Environmental Engineering, Mining Engineering, Geological Engineering or a related field

Knowledge and skills:

2. Demonstrated ability in undertaking outstanding research and taking a lead role in departmental research, scholarship and teaching matters
3. Demonstrated publication record in high-quality refereed journals, conferences equivalent textbooks or teaching resources
4. Proven record of obtaining significant external grants for research
5. Demonstrated record of successfully supervising postgraduate research students
6. Demonstrated experience in leading the development and delivery of high quality teaching, at the undergraduate and postgraduate level, with positive student feedback
7. High-level written and verbal communication skills and proven ability to establish a good working relationship with colleagues and students, and to develop and maintain strong professional links with relevant industry and the community
8. Proven ability to plan, organise and achieve work targets, sometimes in demanding circumstances, and work harmoniously and constructively with academic colleagues and other University staff

Other job related information

- Travel (e.g. to other campuses of the University) may be required
- Block teaching at one of our international campuses will be required
- There may be peak periods of work during which the taking of leave may be restricted

Legal compliance

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.