

## Position Description

# Postdoctoral Fellow

*Position Number: 00077384*  
*Position Title: Postdoctoral Fellow*  
*Date Written: June 2019*

*Faculty / Division: Faculty of Engineering*  
*School / Unit: School of Minerals and Energy Engineering*  
*Position Level: Level A / B*

### ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia's global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as 'research intensive' or 'teaching intensive'. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale. Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition we are attracting the very best academic and professional staff to play leadership roles in our organisation.

### Values in Action: Our UNSW Behaviours

UNSW recognises the role of employees in driving a high performance culture. The behavioural expectations for UNSW are below.

Please refer to the UNSW Behavioural Indicators for the expectations of your career level (level A / B).



Delivers high performance and demonstrates service excellence.



Thinks creatively and develops new ways of working. Initiates and embraces change.



Works effectively within and across teams. Builds relationships with internal and external stakeholders to deliver on outcomes.



Values individual differences and contributions of all people and promotes inclusion.



Treats others with dignity and empathy. Communicates with integrity and openness.

## OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

The School of Minerals and Energy Resources Engineering has been a provider of innovative world class engineering education and research for over sixty years, and it continues to thrive with highly sought after undergraduate and postgraduate programs. The School is committed to maintaining its high reputation committing to the UNSW Strategy 2025 in a manner that continues to provide outstanding research to support to the Australian resources sector and form the basis for expanding and strengthening its presence in new and emerging technologies.

Our vision is one of continued national and global leadership in teaching and research excellence in the resources sectors of the economy, the economy that generates about one-half (\$180 billion) of Australia's export trade revenue, and to contribute to driving of the national agenda across the breadth of Minerals and Energy Resources Engineering, and in doing so to enhance the quality of life for humanity in a sustainable way.

The Postdoctoral Fellow will carry out the research activities in the area of mining engineering and rock mechanics and assist the Head of School with the supervision of research students.

The role of Postdoctoral Fellow reports to the Head of School and has no direct reports.

## RESPONSIBILITIES

Specific responsibilities for this role include:

### Level A

- Conducts research in the area of mining engineering and rock mechanics independently and as part of a team.
- Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners.
- Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones.
- Contribute to the preparation of research proposal submissions to funding bodies and actively seek collaboration with industry partners as appropriate.
- Participate in and/or present at conferences and/or workshops relevant to the project as required, including overseas travel.
- Assist with the supervision of research students in the research area where required.
- Perform experimental and numerical tasks related to geomechanics and rock characterisation.
- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

**Level B (in addition to the above)**

- More significant contribute to the project and lead areas of the project where the opportunity arises.
- Supervision of PhD and research students.
- Create a scholarly impact in the discipline which is recognised by peers in advancement of disciplinary knowledge.
- Achieve a citation rate or proportion of research outputs in most prestigious outlets (e.g. A/A\* or equivalent) in line with discipline and leading universities.
- Participates in the definition of research directions and actively contributes to the coordination of research activities and research outputs to meet project milestones.
- Independently seek and apply for external funding opportunities to grow and enhance the research project.

**SELECTION CRITERIA****Level A:**

- PhD (or soon to be awarded) in engineering or related area.
- Demonstrated experience in research in dynamic rock failures, mining induced subsidence, pillar design, rock testing, ground support, rock mass classification and 2D/3D numerical modelling.
- Demonstrated capability in performing geomechanical and ultrasonic experiments.
- Knowledge of reservoir engineering experimental set ups, geomechanics and reservoir engineering numerical simulators.
- Demonstrated ability to conduct independent research with limited supervision.
- Demonstrated track record of publications and conference presentations relative to opportunity.
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
- Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders and students.
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

**Level B:**

In addition to the above, essential criteria for level B include:

- PhD in engineering or related area.
- At least two years of experience in a postdoctoral position conducting research in the field of mining engineering and rock mechanics.
- Proven research and publication track record, particularly in high quality peer-reviewed journals.
- Demonstrated ability to supervisor honours and postgraduate research students.

*It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.*