POSITION DESCRIPTION

Associate Lecturer
Teaching & Research

Position Summary
An Associate Lecturer (Level A) is expected to make contributions to teaching in the School and to carry out activities to maintain and develop their scholarly research and professional activities.

The Associate Lecturer will provide support to the teaching, professional and administrative activities in the School of Minerals and Energy Resources Engineering and conduct research on multiphase flow in porous media under the supervision of ARC Future Fellow Associate Professor Ryan T. Armstrong.

The undertaken research project will aim to provide new insights into the ways that natural energy resources are utilised for energy security and environmental stewardship. The research will advance simulation platforms used to model multiphase flow in subsurface reservoirs, a multibillion-dollar industry that is becoming increasingly important for transition fuels, CO₂ sequestration and energy storage. The undertaken research will provide the fundamental insights necessary to build higher-fidelity models for porous media flows and for technological advancements necessary for realistic simulations, ready for industry application.

The Associate Lecturer will report to ARC Future Fellow Associate Professor Ryan T. Armstrong and has no direct reports.

Accountabilities
Specific accountabilities for this role include:

• Demonstrate a well-defined teaching philosophy that inspires student learning.
- Conduct classes, assess student learning achievements and support students in line with UNSW policy and with the guidance of more senior academics.
- Design and develop learning activities and resources, and provide assessment and feedback using a range of appropriate approaches and learning environments with the support of more senior academics.
- Support learning progression with students as individuals (through such activities as one-to-one consultation) and as a cohort (through general course related advice) to achieve positive learning and employability outcomes for students.
- Manage course administration, including academic quality assurance.
- Maintain professional development in pedagogy, disciplinary knowledge and minimum professional accreditation requirements (where relevant).
- Make a positive contribution to School meetings and seminars and be a member of School/Faculty committees as required.
- Contribute independently or as a team member in collaborative research with a focus to enhance the quality of research outcomes in the discipline area.
- Conduct research (as per the norms of the discipline) and/or enable research teams to create scholarly output that is recognised by peers.
- Undertake specific research project/s under the guidance of a research leader and contribute to the development of research activities.
- Support the dissemination of research outcomes through appropriate channels and outlets.
- Undertake discipline-appropriate research activities, e.g. surveys, literature reviews, data gathering and/or recording of results using appropriate research methods.
- Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.
- 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 & safety of yourself or others.

Skills and Experience
- A PhD in Engineering or a related discipline.
- Experience with high-performance computing.
- Experience with direct numerical simulation of pore-scale flow in porous media.
- Deep knowledge of programming, artificial intelligence, and machine learning methods.
- Knowledge on X-ray computed microtomography and image processing techniques.
- Demonstrated capability in developing numerical codes for pore-scale flow simulations.
- Familiarity with nonequilibrium thermodynamics.
- Understanding of continuum-scale modelling of multiphase flow.
- Proven commitment to proactively keeping up to date with discipline knowledge and developments.
• Demonstrated experience in and passion for teaching and learning design, development and/or delivery at undergraduate and/or postgraduate level.
• Knowledge of educational technologies and online delivery methods.
• Experience engaging students and fostering independent learning through meaningful assessment and helpful feedback.
• Evidence of and/or preparedness to undertake professional development of teaching practice.
• Evidence of ability to support and inspire students from diverse backgrounds and support student equity diversity and inclusion initiatives.
• Demonstrated ability to undertake high quality academic research and 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.
• Evidence of highly developed interpersonal skills.
• An understanding of and commitment to UNSW’s aims, objectives, and values in action, together with relevant policies and guidelines.
• Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.
• Familiarity with production engineering and enhanced oil recovery for teaching related materials at undergraduate level.

Pre-employment checks required for this position
• Verification of qualifications

About this document
This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.