POSITION DESCRIPTION

Senior Engineering Technical Officer - FACE

POSITION DETAILS

Position Title	Senior Engineering Technical Officer - FACE
Classification	HEW Level 8
Position Number	7005630
School/Office	Teaching & Research Technical Services
Division	DVC Education & Students

POSITION PURPOSE

The Senior Engineering Technical Officer (FACE) will be directly responsible for the maintenance of the eucalypt forest free air carbon dioxide enrichment (EucFACE) operations and the installation and maintenance of a wide range of environmental sensor systems and associated data collection devices at the EucFACE field site.

The Senior Engineering Technical Officer (FACE) will also provide specialised technical support to achieve the objectives of research within the context of EucFACE and the research site and takes overall responsibility for the operational performance, reliability and smooth operation of the FACE site during its operational phase. This role forms part of a larger team managing the field-based research facilities at the Hawkesbury Institute for the Environment (HIE).

The officer provides specialised technical support for funded research programs aimed at studying how environmental factors like carbon dioxide, water, temperature, and humidity affect ecosystems. This includes ensuring all equipment operates correctly and that research experiments are well controlled and monitored.

Beyond the technical responsibilities, the officer works closely with a team of technical staff, coordinating and ensuring that the team provide effective support for research and teaching activities and providing specialist technical leadership and advice to researchers, technical staff, students and research collaborators. Close collaboration with academic staff, students, and visiting researchers is essential to ensure that field experiments run smoothly and receive the necessary technical support. The position requires advanced engineering technical expertise and experience in working in field research facilities, with a focus on complex equipment setup and maintenance. Strong problem-solving skills are necessary to adapt and troubleshoot as required.

KEY ACCOUNTABILITIES

1. Support research activities. Provide technical advice to researchers and students, instruct users on complex research equipment, order goods, organise scientific equipment servicing, participate in data collection, and liaise with academic staff on critical research facility matters.
2. Manage and maintain a large field-based research facility comprising mechanical infrastructure, electronic sensor networks, pressure vessels, plant equipment and computer networks, ensuring ongoing operational readiness, reliability and performance of the facility.
3. Calibrate and maintain a range of complex environmental analytical equipment and instrumentation and associated data collection devices.
4. Oversee and maintain a large network of electronic sensors associated with capturing environmental data, and conduct troubleshooting and problem-solving and system optimization activities when necessary.
5. Write and interpret code in associated programming languages, including R and Python to support automated data capture, system monitoring and operational performance.
6. Collect, download, and process research data, undertake quality control and preliminary analysis and provide verified datasets to research clients.
7. Assist with the design, implementation and optimisation of complex experiments, and perform complex analytical tasks as required.
8. Monitor, analyse and summarise performance of the EucFACE system regarding operational time, maintenance of the CO_2 target and regarding varying environmental conditions that impact gas-use and efficiency within EucFACE; commit to maintaining the experiment CO_2 target and maintaining measurements from other core instruments of the facility.
9. Write, update, and troubleshoot programming scripts used to monitor EucFACE performance and automate data capture.
10. Oversee electronics systems, data communications infrastructure and automated data acquisition systems supporting EucFACE operations and environmental research activities.
11. Maintain daily operational logs to confirm system performance, operational readiness and continuity.
12. Liaise and collaborate with staff of the Australian Plant Phenomics Network node at Western in supporting client-focused research undertaken in the node field facilities (WTC and PACE).
13. Liaise with Infrastructure and Facilities to maintain the viability of large civil infrastructure such as CO_2 storage facilities, roads and buildings around the installation.
14. Lead and contribute to continuous improvement initiatives across technical operations, including cross-campus projects and service enhancements.
15. Ensure compliance with safety regulations by conducting audits, writing & maintaining documentation, and delivering safety inductions for staff and students, including demonstration of safe and proper use of equipment.

QUALIFICATIONS, EXPERIENCE AND SKILLS

1. Tertiary degree level qualifications in a relevant discipline of Engineering with postgraduate experience, or an equivalent combination of relevant experience and/or education/training.

2. Demonstrated technical skills in management of complex field situations, including appropriate training in working at heights, climbing towers and operating heavy construction cranes/lifts for researcher access to trees, or willingness to undertake the necessary training.

3. Hold a current work at height certification or willingness to work at heights and undertake training to gain a Statement of Attainment for Working at Height which is recognised under the Australian Qualifications Framework

4. Advanced understanding of mechanical, electrical, and electronic and programming/coding principles and their application within complex field-based research environments.

5. Demonstrated experience operating, calibrating, programming and maintaining scientific instruments, data loggers and facilities and the ability to diagnose problems with complex systems of actuators, sensors, and communications components

6. Possession of a current driver's license, Scaffold License (or willingness to undertake a training course) and Crane Operator's License (or willingness to undertake a training course).

7. Strong problem-solving and planning skills – Ability to analyse issues, prioritise tasks, and manage competing demands effectively.

8. Clear communication and interpersonal skills – Strong written and verbal communication, with the ability to document procedures and establish professional working relationships with external agencies, senior staff, and staff at all levels.

KEY RELATIONSHIPS

- **This position reports to**: Technical Coordinator, Sustainability and Environmental Science.
- **This position supervises**:
  - Nil supervision
- **Key internal relationships**:
  - Technical Manager, Research Institutes
  - Technical Manager, Field Based Research Facilities
  - Node Director, the Australian Plant Phenomics Network
  - Other technical team members across the function
  - School or Institute staff, both Academic and Professional
  - Students
- **Key external relationships**:
  - Suppliers of goods and equipment

CHALLENGES

1. **Balancing diverse technical demands**
   The role supports research facilities utilised by staff and students. Responding to evolving staff and student needs and expectations requires adaptability and good communication skills.
2. **Operating field facilities in a research environment**.
   The role can be physically demanding. It is expected that the position manages the hazards of working outdoors including exposure to the elements and wildlife.
3. Be available on-campus to support campus based research activities as required
4. Due to the nature of the experiments undertaken in field site locations, the incumbent will be required to work in a variety of climatic conditions
5. The experiment runs 365 days per year and the Senior Engineering Technicial Officer (FACE) will share on-call duties with other FACE technical staff
6. The position will be working at heights frequently.

UNIVERSITY EXPECTATIONS

The University expects that all employees are aware of, and comply with legislation and Western's policies and procedures relevant to the position, including but not limited to:

- → Code of Conduct
- → Work Health and Safety and Wellbeing Management System
- → Enterprise Agreement or Award
- → Anti-discrimination principles, Equal Employment Opportunity and staff and student equity.

BUSINESS UNIT EXPECTATIONS

Teaching & Research Technical Services (TRTS) conducts its operations on a number of campuses and whilst employees are primarily located on one campus, they may be required to work at and travel between any of these locations for set periods of time to meet operational needs.

Hours of work for employees in TRTS may vary due to operational requirements in supporting teaching classes or research projects. As such the ability to work to a roster between the hours of 7am - 9pm Monday to Sunday may be required.

Approved by: Transferred to new format
Date: 08.10.2025