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## POSITION DESCRIPTION

# Senior Technical Officer

Position Level	7/8
Faculty/Division	Engineering - Electrical Engineering & Telecommunications
Position Number	00032276
Original document creation	22/09/ 2020

### Position Summary

The Senior Technical Officer will assist the Australian National Fabrication Facility (ANFF) Laboratory Manager in maintaining the safe and smooth operations of the ANFF-NSW laboratories and process tools. This will be achieved by:

- Maintaining laboratory process tools and plant in good operating order (including electronics maintenance and repairs);
- Ensuring that the hazardous gas storage and delivery system is maintained in good order; and
- Assisting in the planning for and installation of new process tools.
- Assist with bench marking performance of process tools.

The Senior Technical Officer's responsibilities span all electrical engineering disciplines but will primarily be in the areas related to electro/mechanical control systems for process tools and infrastructure used for micro/nanofabrication of electronic, MEMs, optical and quantum computing devices

The role of Senior Technical Officer reports to ANFF-NSW Laboratory Technical Manager and has no direct reports.

### Accountabilities

Specific accountabilities for this role include:

#### Level 7

- Complete maintenance, benchmarking, trouble-shooting and repair work on a wide variety of semiconductor laboratory process equipment including ultra-high vacuum systems, power supplies, plasma process tools, electron-beam process tools, UV lithography tools, high temperature furnaces and ovens, and metrology tools.
- Complete maintenance, benchmarking, trouble-shooting and repair work on laboratory infrastructure systems including gas delivery systems, water purification plant, PLC, SCADA and HVAC equipment.

- Co-ordinate maintenance of and take responsibility for the safe operation of a sophisticated gas storage and delivery system for flammable, toxic and corrosive gases (in liaison with the Laboratory Manager)
- Complete the installation and commissioning of new and re-purposed process tools.
- Complete upgrades to laboratory infrastructure and ensure a low level of equipment downtime (relative to laboratory norms).
- Provide expert advice to researchers and users of the Facility where required.
- Ensure up-to-date knowledge of new technology and equipment available to be able to provide advice the Laboratory Manager and Facility Manager to contribute to the ongoing success of the Facility.
- Contribute to the development and implementation of Work Health and Safety policies and procedures, particularly those relating to process tool maintenance and operation.
- Document all repair and project work with reports, updates to manuals and related documents as necessary.
- 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 and safety of yourself or others.

**At Level 8, in addition to the above:**

- Complete maintenance, benchmarking, trouble-shooting and repair work more advanced technical problems within the laboratory.
- Operate some laboratory process equipment including tools connected to the hazardous gases delivery system.
- Develop, implement and manage maintenance, repair and installation projects, including co-ordination and oversight of external contractors.
- Develop, implement and manage continuous improvement projects to enhance laboratory efficiency.
- Contribute to infrastructure development planning.
- Provide expert consultancy advice on the Facility strategic infrastructure development to the ANFF Laboratory Technical Manager and the ANFF Facility Business Manager.
- Manage the procurement of and installation planning for new process tools.

**Selection Criteria:**

**Level 7**

- Relevant tertiary qualification in electronics, equipment engineering or a related area, or an equivalent combination of education, training and experience within a tertiary education or research environment.
- At least 5 years relevant experience in providing technical support in an academic research environment.
- Demonstrated experience and ability to design and build electronic circuits, interpret circuit diagrams, and to diagnose and repair faults in electronic circuitry at the component level.
- Demonstrated advanced computer skills, including interfacing and software-based instrument control, PLCs and SCADA systems.
- Experience and familiarity with and/or a demonstrated willingness and aptitude to undertake appropriate training to develop experience in:

- vacuum equipment and methods
- maintenance and operation of semiconductor
- maintenance and operation of semiconductor process equipment of the type represented in the ANFF-NSW Laboratory
- semiconductor laboratory infrastructure, including pure water supply, process gas delivery, wet chemical systems, and clean rooms
- safety systems and methodologies for semiconductor process tools and infrastructure
- hazardous gases systems including knowledge of gas properties, safety aspects, handling protocols and maintenance requirements
- Excellent communication skills.
- Demonstrated ability to produce detailed technical documentation.
- Demonstrated ability to work independently as well as contribute to technical support within a team environment.
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.
- Knowledge of equal opportunity principles in a diverse, multi-cultural environment.

**At Level 8, in addition to the above:**

- Minimum 10 years of relevant experience.
- Proven experience in the various laboratory infrastructure and processes associated with the equipment represented in the ANFF-NSW Laboratory.
- Strong project management skills demonstrated by the successful completion of technical projects.
- 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

**Desirable Criteria**

- Current driver's licence is desirable but not essential.
- Basic workshop/mechanical skills would be desirable.
- Experience providing responsive technical support in an academic research environment
- Experience providing corrective and preventative technical support in a semiconductor-fab

**PROGRESSION STATEMENT**

The incumbent will normally be expected to have reached the top step of level 7 prior to progression to level 8. Criteria for progression to level 8 will be based on satisfactory performance of all duties and accountabilities at level 7 and a demonstrated capacity to take on the duties and accountabilities of the position at level 8.

**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.