



THE POST

College/Service: Technical Services
Post/Job Title: Mineral Processing Laboratory Technician
Reference number: R55883
Grade: D
Responsible to: Dr Gavyn Rollinson

Job Description

The post will be a fixed term post until August 2020. The main purpose of the job is to provide technical support in the mineral processing laboratory at CSM Penryn Campus. You will be expected to play an active role in research and teaching activities in the mineral processing laboratory as well as assuming responsibility for the administration of the laboratory and championing an environmentally sustainable, safe working environment, which include health & safety management and implementation. The role will involve close collaboration with academic staff in the Camborne School of Mines and other members of the University Technical Services team. This post will be based at the University of Exeter Penryn Campus within the Camborne School of Mines.

Key responsibilities

1. Provide technical support in the mineral processing laboratory at CSM Penryn Campus.
2. Carry out practical work for teaching and research projects on a number of mineral processing techniques (see details below).
3. Act as health & safety lead and promote good lab practice for all users of the related Mineral Processing lab areas.

Main Duties and accountabilities

You will be expected to:

- Assume responsibility for the health and safety of all staff, students and visitors in the mineral processing laboratory. This will include the completion of risk assessments and COSHH in line with relevant legislation, as well as maintaining suitability of safe work practice and training of lab users.
- Assist in teaching by the demonstration of processing techniques and equipment to students as required in the furthering of their study.
- Provide adequate training and support to staff and students undertaking project work related to mineral processing; including help in the analysis and interpretation of results.
- Work closely with academic and technical services staff to complete research and teaching objectives.
- Set up and undertake experimental testwork using a variety of specialist mineral processing equipment with limited guidance from academic staff.
- Set up and undertake experimental testwork using a variety of specialist Geomechanical equipment with guidance from academic staff.
- Prepare test material for downstream analytical techniques. This will include: crushing and grinding as well as specialist preparation stages with some guidance from the appropriate lab managers.
- Act as a Green Champion for the mineral processing laboratory. Ensuring procedures and practices in the lab are aligned with the environmentally sustainable ethos of the university.

- Maintain and update inventories of equipment, mineral samples and chemicals used in the mineral processing laboratory.
- Arrange for the purchasing and where appropriate maintenance of equipment and consumables and liaise with contractors and clients as appropriate.
- Keep accurate records of experiments and data and effectively interpret results and outcomes of test work as required.
- Undertake all of the above in accordance with University health and safety procedures and regulatory guidelines.

Service Delivery (Teaching and Research Support)

- Expected to deal with internal or external stakeholders creating a positive image of Technical Services by being prompt in responding to requests and referring the user to the right person if necessary
- Initiate improvements to the service within their degree of influence
- Ensure that overall standards of the service including H&S, compliance and regulatory standards are adhered to by all users within their degree of influence.
- Provide regular and routine introductions – demonstrating the use of laboratory/workshop facilities and equipment to staff, students and visitors.
- Explain booking or loan procedures clearly, and check the understanding of service users to ensure they understand the parameters and timescales.
- Provide daily assistance to service users and students, with autonomy to practice within a specified area. This may include training, demonstrating or instruction within the environment to staff or students.
- Prepare and provide resources and equipment to service users, making sure they are aware of health and safety guidance for best practice.
- Engage with team colleagues and service users to construct/use equipment to agreed specifications.
- Operate equipment/machinery without the supervisor of team members (if competent to do so) and is responsible for cleaning and first level maintenance.

Communications

- Receive, understand and convey information in a clear and accurate manner - oral, written, electronic and visual media.
- Provide feedback to others within own area regarding the use or application of resources for improvement purposes.

Teamwork and motivation

- Participate and contribute to the team and to act as a role model to less experienced colleagues.

Liaison and Networking

- Build and develop on-going relationships to ensure effective communications and effective working.
- Be a member of cross-functional or technical service-wide working teams or groups.

Decision Making, Processes and Outcomes

- Make decisions that affect themselves and their immediate team and implement decisions made by a project team/working group, such as initiating projects and updating and amending procedures
- Advise on a choice of operational options which will have an short-term impact on the work area and/or work-flow.

Leadership, Planning and Organising Resources

- Complete tasks to a given plan within allocated resources.
- Plan, prioritise and organise own work to achieve agreed objectives.
- Has specific responsibilities and joint responsibilities with other team members.

Initiative and Problem Solving.

- Solve standard day-to-day problems as they arise, this may involve choosing between a limited number of options by referring to guidelines or to what has been done before
- Recognise when a problem should be referred to others.

Analysis and Research

- Analyse routine data or information using predetermined procedures and to gather information from standard sources.
- Work accurately to complete the task precisely specified and gather, and manipulate, data so that it can be interpreted by others.

Sensory and Physical Demands

- Routinely demonstrate dexterity, co-ordination using materials, tools, equipment and machinery in accordance with their work.
- Use physical and sensory abilities and skills to perform complex tasks at a level which would require either knowledge of relevant methods or routines.

Working Environment

- Show due care and diligence for the health and safety of themselves and others and to understand how the work environment could impact on staff and students working in their area.
- Implement appropriate health and safety standards. This may take place in a high risk laboratory/workshop environment where you will be required to follow and enforce safety procedures.
- There may be the requirement to wear personal protective equipment.
- Actively contribute to continuous improvement strategies.
- Implement, adhere to and promote relevant Work Health and Safety policies/guidelines, University Environmental Sustainability and waste management guidelines/policy and carry out any responsibilities outlined in Safety Management Plans and H&S audit recommendations.
- Carry out risk assessments for specific and more generalist areas within own role, authorised by others.
- Practiced and able to take remedial action to ensure a safe working environment for self and immediate team, colleagues and students.

Pastoral Care and Welfare

- Show sensitivity to those who may need help or, in extreme circumstances are showing signs of obvious distress – initiating appropriate action by involving relevant people. This will be carried out in accordance with the University equality and diversity standards and guidance.
- Encourage and promote behaviour consistent with University's values and standards, equality and diversity standards and guidance, and create a positive work environment.

Personal and Team Development

- Proactive personal and professional development including completion of mandatory training, skills courses and specialist training.
- Occasional requirement to advise or guide new starters working in the same role/laboratory or area on standard information and procedures, where to obtain information/materials, and how to use of routine equipment. Keep up-to-date technically and apply new knowledge.

Knowledge and Experience

- Have sufficient knowledge and expertise to work on day to day issues in their own area without direct or continuous reference to others.

This job description summarises the main duties and accountabilities of the post and is not comprehensive. There is a clear expectation that the post-holder will support other areas of Technical Services and will undertake other duties of similar level and responsibility.

Person Specification

The role requires an intimate knowledge of mineral processing equipment and techniques. Suitable candidates should have experience in the use comminution, classification, gravity, magnetic, electrostatic, flotation and automated sorting equipment/techniques. You must be capable of mass balancing processing circuits and have an understanding of the links between mineralogy and processing (Geometalurgy). You will be expected to work with mineral processing academics and other staff to help design and then independently undertake experimentation as a part of research and consultancy project work. You should be able to complete technical reports to a high standard based on such experimentation.

Essential	Desirable
Attainments/ Qualifications	
An undergraduate degree (or equivalent experience) in a relevant discipline (e.g. Minerals Engineering, Geochemistry, Chemical Engineering or similar).	Professional registration or willingness to work towards registration with a relevant professional body.
Skills and Understanding	
<p>Ability to communicate effectively in English, both orally and in writing.</p> <p>Ability to perform standard experimental scientific procedures.</p> <p>Ability to maintain accurate and detailed records.</p> <p>Good laboratory housekeeping skills.</p> <p>Competence with Microsoft Excel, Access, and Word (or equivalent).</p>	<p>Ability to operate and maintain mineral processing equipment.</p> <p>Ability to operate and maintain Geomechanical equipment.</p> <p>Understanding of mineralogy and the role of liberation in mineral separation.</p>
Prior Experience	
<p>Demonstrable experience of working in the relevant scientific field.</p> <p>Demonstrable experience working in a mineral processing laboratory or in a laboratory in a related field of study.</p> <p>Experience of health and safety procedures.</p> <p>Experience in using mineral processing equipment. Including the: Wilfley shaking table; Knelson Separator; Mozley lab Separator; flotation and magnetic separators.</p> <p>Experience in writing technical reports.</p> <p>Experience of conducting risk assessments and understanding of health and safety legislation.</p> <p>Experience of teaching mineral processing to students with mixed experience and backgrounds.</p>	<p>Experience in the preparation of samples for: X-ray fluorescence (XRF); X-Ray diffraction (XRD); and quantitative scanning electron microscopy (e.g. QEM-SCAN).</p> <p>Experience operating portable XRF analysers.</p>
Behavioural Characteristics	
<p>Ability to work independently with some supervision and to use initiative.</p> <p>Ability to work as part of a team.</p>	<p>Ability to work under pressure and to tight deadlines.</p>

Willingness to undertake training. Able to maintain accurate research records.	Ability to use initiative to solve problems and overcome difficulties.
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Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

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