



NOTES

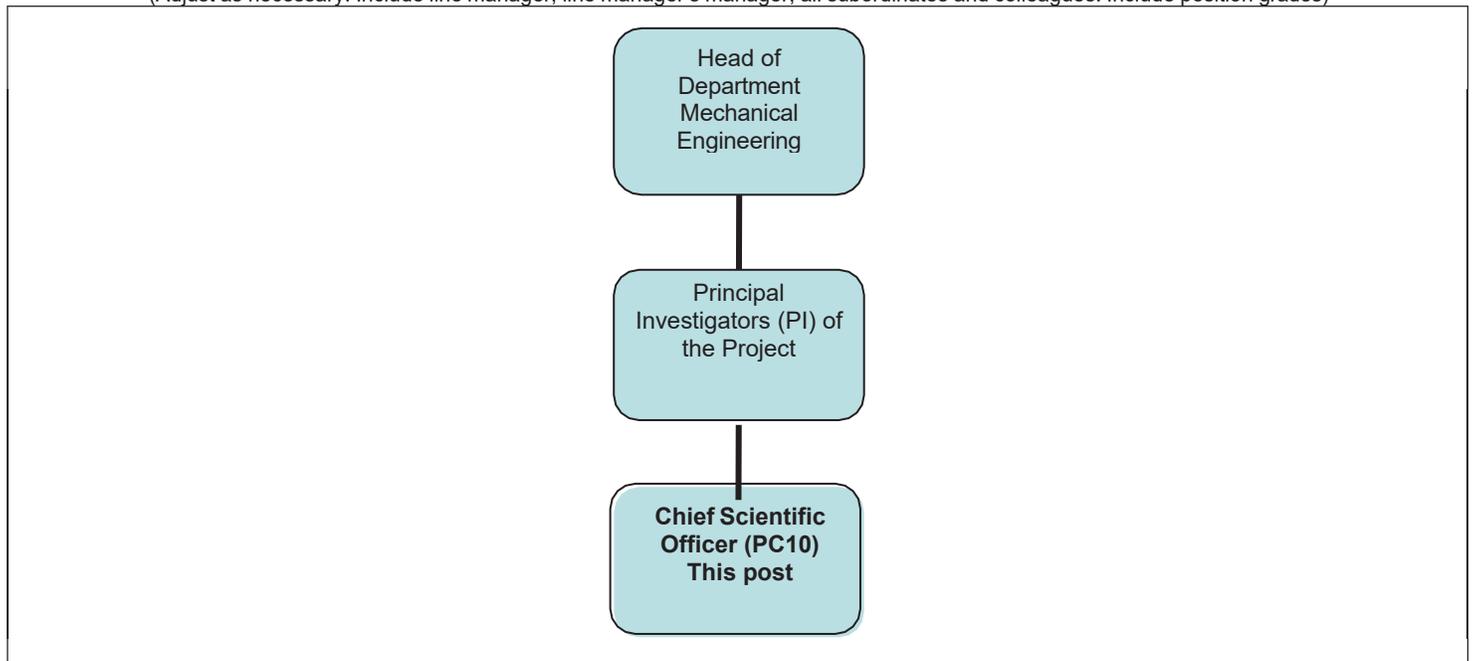
- Forms must be downloaded from the UCT website: <http://forms.uct.ac.za/forms.htm>
- This form serves as a template for the writing of position descriptions.
- A copy of this form is kept by the line manager and the position holder.

POSITION DETAILS

Position title	Chief Scientific Officer		
Job title (HR Business Partner to provide)			
Position grade (if known)	PC10	Date last graded (if known)	
Academic faculty / PASS department	EBE		
Academic department / PASS unit	Mechanical Engineering		
Division / section	CERECAM/CME		
Date of compilation	November 2025		

ORGANOGRAM

(Adjust as necessary. Include line manager, line manager's manager, all subordinates and colleagues. Include position grades)



PURPOSE

The main purpose of this position is to offer scientific research support for the purpose of the design and development of a hydraulic fluid screener as set out under contract UCT41099 with Bosch-Rexroth AG. It will be funded by fund number 401972.

This includes providing support in:

- Designing and developing of research equipment
- Designing and developing of experiments
- Analysis of data
- Development of investigation methodologies
- Supervisory research activities
- Co-authoring scientific manuscripts if necessary
- Communication with stakeholder (Bosch Rexroth AG) and relevant subcontractors

CONTENT

Key performance areas	% of time spent	Inputs (Responsibilities / activities / processes/ methods used)	Outputs (Expected results)
E.g. General and office administration	25%	Takes, types up and distributes minutes and agendas for monthly departmental meeting. Greet visitors, enquires as to the nature of their visit and directs them to the appropriate staff member.	All staff members receive an electronic copy of accurate minutes and agendas, in the departmental template/format, a week before the meeting. Visitors are directed to appropriate staff member in a professional and efficient manner.
1 Collaboration on parameter identification and evaluation	15	1. Review and document standard hydraulic fluid test protocol	1. Set up test rigs at UCT that simulate industry-standard conditions 2. Conduct both baseline and failure-mode simulation tests 3. Deliver a report detailing key screening parameters and recommendations for development
2 Collaboration on failure analysis and characterisation	15	1. Collect and log fluid and system data under varying conditions 2. Conduct root cause analyses on observed failure modes 3. Compare failure patterns across the provided fluid types and stress profiles	1. Deliver a report on fluid condition triggers and degradation pathways

3	Design and development of screener device	25	<ol style="list-style-type: none"> 1. Develop conceptual designs for the screener 2. Conduct iterative design and performance testing 3. Finalise a fully specified prototype screener 4. Document technical findings and design methodology 	<ol style="list-style-type: none"> 1. Conceptual and detailed design of the screener device including engineering drawings.
4	Validation of prototype screener design	25	<ol style="list-style-type: none"> 1. Coordinate and facilitate the manufacture the prototype based on the finalised design 2. Conduct validation testing in simulated and practical environments 3. Calibrate the screener for consistent diagnostic performance 	<ol style="list-style-type: none"> 1. Deliver the final report, including validated use cases and a screening methodology guide
5	Attend regular update meetings with UCT Principal Investigators (PI) and Bosch-Rexroth AG	5	<ol style="list-style-type: none"> 1. Prepare and present update reports 2. Travels to Germany and other locations may be required. 	<ol style="list-style-type: none"> 1. Represent the project team at UCT at stipulated meetings with Bosch-Rexroth AG and relevant suppliers, subcontractors.
6	Assist centres with various admin and scholarly related activities associated with the project	15	<ol style="list-style-type: none"> 1. Support procurement, documentation, and general coordination related to project activities. 2. Maintain organised records of project files, correspondence, and test data 3. Co-authorship of scientific manuscripts 4. Support supervisory activities relating to the project 	<ol style="list-style-type: none"> 1. Efficient administrative support contributing to smooth operation of Centre in support of the project activities.

MINIMUM REQUIREMENTS

Minimum qualifications	NQF level 7 (or its equivalent for qualifications from outside of SA)			
Minimum experience (type and years)	5 years experience in the design, development and implementation of a hydraulic fluid testing system			
Skills	<ul style="list-style-type: none"> • Strong mechanical and experimental design capabilities, including implementation and validation of thermofluid systems. • Understanding of manufacturing processes and principles. • Proficiency in engineering software and basic programming skills • Demonstrated project management competence, including planning, coordination, and reporting. • Excellent communication, teamwork, and interpersonal skills. <p>At least one of the following is necessary:</p> <ul style="list-style-type: none"> • Understanding of metrology and precision measurement systems. • Understanding of hydraulics and hydraulic equipment. • Understanding computational and experimental Fluid Dynamics. 			
Knowledge	Commercial CAD package (CREO, Solidworks, Inventor etc.), Commercial CFD package Ansys Fluent, Workflow management, Python, Mathlab			
Professional registration or license requirements	N/A			
Other requirements (If the position requires the handling of cash or finances, other requirements must include 'Ability to handle cash or finances'.)	N/A			
Competencies (Refer to UCT Competency Framework)	Competence	Level	Competence	Level
	Problem Solving	2	Communication	2
	Analytical thinking	2	Team/Collaboration	2
	Building interpersonal relationships	2	Formal Presentation	
	Client service and support	2	Written communication	
	Quality commitment and work standards	2		

SCOPE OF RESPONSIBILITY

Functions responsible for	Design and development of hydraulic fluid screener and reporting to stakeholder.
Amount and kind of supervision received	Operate independently except for any cost-related activity or formal engagement with stakeholder
Amount and kind of supervision exercised	Must be able to work with the UCT team, stakeholder (Bosch-Rexroth AG) and external suppliers/subcontractors.
Decisions which can be made	All decisions must go through the PI of the project.
Decisions which must be referred	Same as above

CONTACTS AND RELATIONSHIPS

Internal to UCT	Mech Eng Staff
External to UCT	External stakeholder (Bosch-Rexroth AG) and external suppliers/subcontractors.

AGREED BY

	PRINT NAME	SIGNATURE	CONTACT NO.	DATE
Position Holder				
Direct Line Manager/Supervisor	Prof Tunde Bello-Ochende		X3673	05/02/2026