



## NOTES

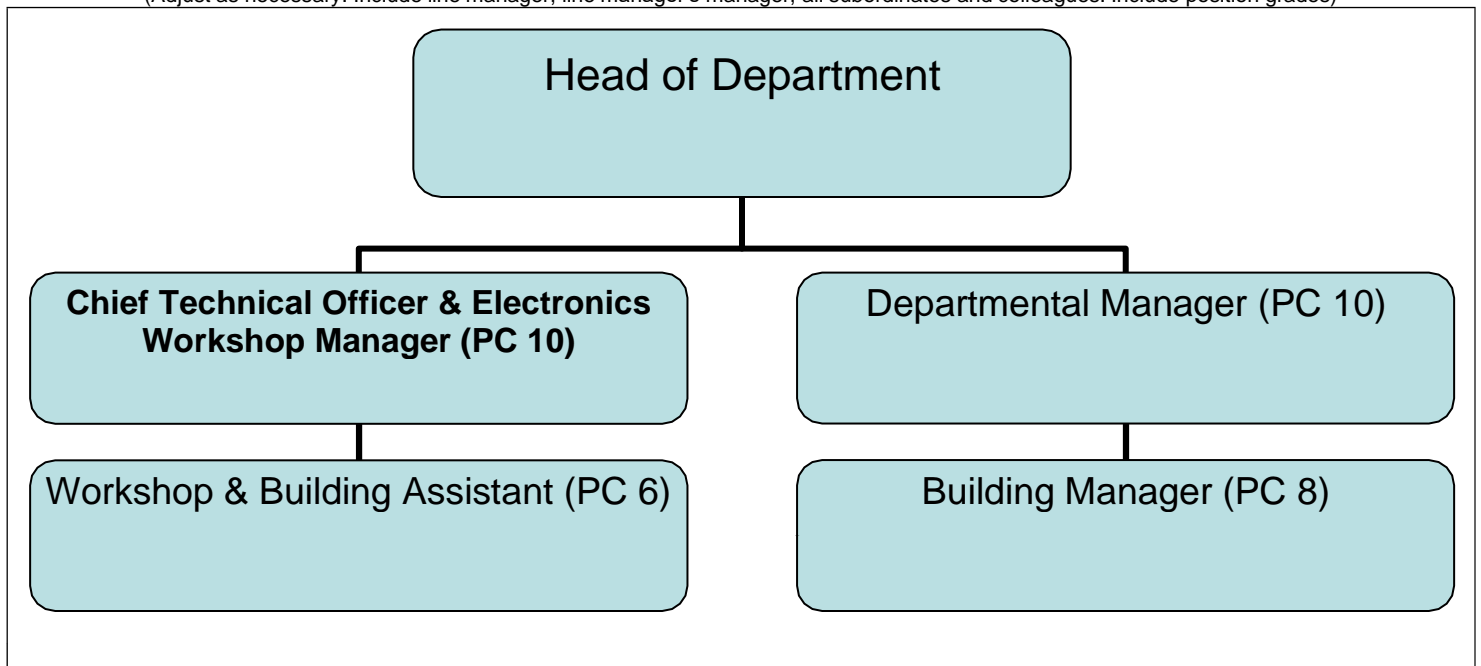
- Forms must be downloaded from the UCT website: <http://forms.uct.ac.za/forms.htm>
- This form serves as a template for the writing of position descriptions.
- A copy of this form is kept by the line manager and the position holder.

## POSITION DETAILS

Position title	Chief Technical Officer & Workshop Manager		
Job title (HR Business Partner to provide)	CTO		
Position grade (if known)	PC 10	Date last graded (if known)	Nov 2017
Academic faculty / PASS department	EBE		
Academic department / PASS unit	Department of Chemical Engineering		
Division / section	Electronics Workshop		
Date of compilation	May 2023		

## ORGANOGRAM

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



## PURPOSE

The purpose of the job is to manage the Chemical Engineering facility entitled the Electronics Workshop and its staff and their roles. This includes, but is not limited to, electronics, hardware, software support & development, and IT services not provided by ICTS. The job also entails supervision of an assistant, currently one PC6 post (Workshop & Building Assistant). The job also requires supporting the department with any electrical installations.

The Chief Technical Officer in Chemical engineering is responsible to provide technical support to research groups in the field of electronics, electrical, IT and instrumentation. Design and construction of specialised instrumentation required by the research groups is undertaken. The CTO also manages the departmental software and aids with any hardware requirements in the building.

The CTO is the face and representative of the department and the Electronics Workshop and is therefore required to engage both staff and students requiring assistance in a friendly manner. The Electronics Workshop services Chemical Engineering department as a part of the department and is essentially run as an independent service provider and is thus important to provide needed services.

**CONTENT**

Key performance areas		% of time spent	Inputs (Responsibilities / activities / processes/ methods used)	Outputs (Expected results)
1	Supervisory and Leadership	10%	Line manage and provide leadership to Workshop & Building Assistant.  Build relationships with industry, departments and other institutions.	Annual development dialogue. Workshop & Building Assistant sent on courses for any skills required to do new work. Weekly/monthly/quarterly meetings with other technical officers in other departments.
2	Supervision of electronics workshop	10%	Maintain test equipment and instruments in good working order. Loaning of equipment. Maintain computers and software used for electronics CAD, control and embedded systems development.	Maintained stocks of frequently used components, cables and equipment. Recorded logs of loans in and out of the workshop.
3	Instrumentation and control systems	10%	Advise staff and research students on the conceptual design of instrumentation, data acquisition, control systems for test rigs, etc.	Deployment and support of instrumentation and control systems
4	Electronics - analog	10%	Innovative design of analog circuits using CAD systems (e.g. KiCAD) for schematic and circuit board design. Assembly, testing, debugging and repair of circuits.	Production of analog systems for projects in the department. Repair, refurbishment and maintaining of old circuits to continue the running of older, irreplaceable equipment. Upgrading to digital circuits where possible.
5	Electronic - digital	10%	Innovative design of digital circuits using CAD systems (e.g. KiCAD) for schematic and circuit board design. Assembly, testing, debugging and repair of circuits.	Production of digital systems for projects in the department. Repair, maintenance and refurbishment of digital circuits.
6	Electronics – embedded systems	10%	Design and construction and programming of microcontroller circuits using modern CAD and design tools.	Production of working embedded systems for design projects in the department
7	Electronics – power systems	10%	Design and construction of power control systems using triacs, SSR's, PWM's etc. Setting up of motor speed control systems.	Ensuring the production & deployment of electronically and electrically safe power systems for use in projects.

8	Electronics - repairs	10%	Ability to fault diagnosis, sourcing of components, doing practical repairs, etc.	Returning systems to service, documenting the repair process.
9	Documentation	15%	Creating and maintaining documentation of all systems built and in operation in the department.	Ensure that systems and procedures can be maintained and used by staff and students. Keep a job record.
10	Teaching	5%	Providing learning materials or tutoring in the areas of, but not limited to, electronics, electrical, IT or 3D Printing.	Providing instructions for frequently used equipment, or installation instructions for software. Teaching of students who need guidance in the knowledge areas mentioned.

### MINIMUM REQUIREMENTS

Minimum qualifications	BSc Engineering Degree or ND in Electrical Engineering			
Minimum experience (type and years)	National Diploma in Electrical Engineering with at least 5 years of experience at a supervisory level OR BSc Engineering degree with at least 2 years appropriate experience			
Skills	Ability to conceptualize, design, develop and implement instrumentation & control systems. Good communication and writing skills. Ability to negotiate with people at a high level. Ability to generate funding by contract R&D, sales of instruments, etc. Ability to manage the inputs & outputs of the workshop, and prioritise tasks			
Knowledge	Knowledge of UCT IT infrastructure Good electronics, electrical and IT practice & safety			
Professional registration or license requirements	N/A			
Other requirements	Ability to manage finances of workshop and departmental IT fund Management of mailing lists and departmental shared mailboxes First response for any electronics, electrical and IT needs in the department.			
Competencies (Refer to <a href="#">UCT Competency Framework</a> )	Competence	Level	Competence	Level
	Good verbal & written communication	2	Analytical thinking/problem solving	2
	Coaching/developing staff	2	Professional knowledge and skill	2
	Conceptual thinking	2	Information Management	2
	Teamwork/Collaboration	2	Client/student service & support	2
	University awareness	2	Initiating action/initiative	2

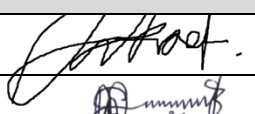



### SCOPE OF RESPONSIBILITY

Functions responsible for	Electronics workshop, IT & Workshop funds, electronics/electrical/IT requirements for department
Amount and kind of supervision received	Little to no supervision required – independent work with guidance from HoD
Amount and kind of supervision exercised	Supervision of Workshop & Building Assistant on job requirements/instructions, any design decisions, and quality check on final installation/products.
Decisions which can be made	Design decisions on jobs inside workshop for clients/staff/students.
Decisions which must be referred	Departmental equipment installations, any decisions affecting department operations.

### CONTACTS AND RELATIONSHIPS

Internal to UCT	ICTS helpdesk, ICTS acquisitions, CTO/STOs in other departments, servicing companies for the department
External to UCT	RS Components, Communica, other electronics components sales companies Aspen sales consultant, OLI sales consultants, other software sales consultants

### AGREED BY

	PRINT NAME	SIGNATURE	CONTACT NO.	DATE
Position Holder	Ameen Jakoet		074 140 3954	3 July 2023
Direct Line Manager/Supervisor	Aubrey Mainza		X5511	4 July 2023
Area Line Manager				
HOD	Aubrey Mainza		X5511	4 July 2023
Dean / ED	Alison Lewis		x2702	13 July 2023

