

VACANCY ANNOUNCEMENT

Position: Tutor – Electrical Machines and Switching & Control

Duty Station

Nyamirembe, Chato, Geita

Position Summary

The institution invites applications from suitably qualified and experienced candidates for the position of **Tutor – Electrical Machines and Switching Control**. The successful candidate will deliver competency-based theoretical and practical training in electrical machines, industrial electrical installations, switchgear, protection systems, motor control, automation, and electrical power systems. The tutor will supervise laboratory practicals, workshops, industrial projects, and support curriculum development and applied research.

Minimum Qualifications

Applicants must possess:

- A **Bachelor's Degree** in Electrical Engineering, Electrical Power Engineering, Electromechanical Engineering, Mechatronics Engineering, Industrial Automation Engineering, or a closely related field;

OR

- A **Diploma, Full Technician Certificate (FTC), or VETA qualification** in Electrical Engineering, Electrical Installation, Electromechanical Engineering, Industrial Electricity, or a related discipline **with at least five (5) years of relevant industrial experience**.

Professional certifications in industrial automation, PLCs, electrical installation, or power systems will be an added advantage.

Key Responsibilities

The successful candidate will:

- Deliver lectures, tutorials, laboratory practicals, and workshop sessions.
- Prepare lesson plans, laboratory manuals, instructional materials, and assessments.
- Supervise student practical projects and industrial attachments.
- Maintain electrical laboratories and workshop equipment.
- Participate in curriculum review and quality improvement initiatives.
- Assess student performance and provide academic guidance.
- Support applied research, innovation, and consultancy.
- Promote electrical safety and compliance with relevant standards.

Required Technical Competencies

Electrical Fundamentals

- Electrical quantities and measurements
- AC and DC circuit analysis
- Single-phase and three-phase systems
- Power factor
- Electrical power calculations
- Electrical safety practices

Electrical Machines

- DC generators and motors
- Single-phase transformers
- Three-phase transformers
- Transformer testing and maintenance
- Synchronous generators and motors
- Induction motors
- Special-purpose motors
- Stepper motors
- Servo motors
- Motor efficiency and performance analysis

Motor Control Systems

- Direct-On-Line (DOL) starters
- Star-Delta starters
- Forward and reverse control
- Automatic motor control
- Soft starters
- Variable Frequency Drives (VFDs)
- Servo drive systems
- Motor protection systems

Switchgear and Protection

- Circuit breakers
- Isolators
- Contactors
- Motor starters
- Control relays
- Protective relays
- Fuses
- Residual Current Devices (RCDs)
- Earth leakage protection
- Overcurrent and short-circuit protection
- Switchgear selection and maintenance

Industrial Control Systems

- Industrial control circuits
- Relay logic
- PLC programming
- Human Machine Interface (HMI)
- SCADA fundamentals
- Industrial communication protocols
- Industrial instrumentation integration

Power Systems

- Electrical power generation
- Transmission systems
- Distribution systems
- Distribution transformers
- Load analysis
- Power quality
- Earthing systems
- Electrical substations
- Smart grid fundamentals

Renewable Energy Systems

- Solar photovoltaic systems
- Solar inverters
- Battery storage systems
- Wind power fundamentals
- Hybrid power systems
- Grid integration

Electrical Installation

- Residential electrical installation
- Commercial installation
- Industrial wiring
- Cable sizing
- Conduit installation
- Electrical drawings
- Electrical codes and standards

Electrical Testing and Maintenance

- Preventive maintenance
- Predictive maintenance
- Fault diagnosis
- Insulation resistance testing
- Continuity testing
- Earth resistance testing

- Transformer testing
- Motor testing

Instrumentation and Measurement

Practical experience using:

- Digital multimeter
- Clamp meter
- Oscilloscope
- Insulation tester (Megger)
- Earth resistance tester
- Power quality analyzer
- Energy meter
- Phase sequence tester

Engineering Software

Experience with one or more of:

- MATLAB/Simulink
- ETAP
- AutoCAD Electrical
- EPLAN
- PLC programming software (Siemens TIA Portal, Allen-Bradley Studio 5000, Schneider EcoStruxure, Mitsubishi GX Works, or equivalent)
- Variable Frequency Drive configuration software

Programming (Basic)

Knowledge of one or more of:

- PLC Ladder Logic
- Structured Text (IEC 61131-3)
- Python (basic)
- C/C++ (basic)

Desired Competencies

- Strong practical troubleshooting skills.
- Excellent communication and instructional abilities.
- Ability to integrate theory with industrial practice.
- Commitment to competency-based education.
- Strong laboratory and workshop management skills.
- High level of professionalism and teamwork.

Salary and Benefits

This is a private institution. Remuneration will be offered in accordance with the institution's approved salary structure, which is **benchmarked against the Tanzania Government Service (TGS) Salary Scale**, taking into account the candidate's qualifications, experience, and responsibilities of the position

Application Procedure

Interested candidates should submit:

- Curriculum Vitae (CV)
- Copies of academic and professional certificates

To: **careers@rct.ac.tz**

If you do not receive an acceptance reply message from us in two days, please re-submit your application..