

VACANCY ANNOUNCEMENT

Position: Tutor – Signal Processing Engineering

Duty Station

Nyamirembe, Chato, Geita

Position Summary

The institution invites applications from suitably qualified and experienced candidates for the position of **Tutor – Signal Processing Engineering**. The successful candidate will be responsible for delivering competency-based theoretical and practical training in signal processing, electronics, digital systems, embedded technologies, and related engineering disciplines. The tutor will also support laboratory instruction, student projects, curriculum development, and applied research activities.

Minimum Qualifications

Applicants must possess:

- A **Bachelor's Degree** in Signal Processing Engineering, Electrical Engineering, Electronics Engineering, Communication Engineering, Computer Engineering, Telecommunications Engineering, or a closely related field;

OR

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

Experience

Applicants should have:

- Practical experience in signal processing, electronics, embedded systems, telecommunications, automation, or related engineering fields.
- Experience in teaching, technical training, laboratory instruction, or industrial practice is an added advantage.
- Demonstrated ability to integrate theoretical knowledge with practical engineering applications.

Key Responsibilities

The successful candidate will:

- Deliver lectures, tutorials, laboratory practicals, and workshops.
- Prepare lesson plans, laboratory manuals, instructional materials, and assessments.

- Supervise student practical projects, industrial attachments, and final-year projects.
- Maintain laboratory equipment and ensure safe laboratory operations.
- Participate in curriculum development and continuous quality improvement.
- Assess students' academic performance and provide academic guidance.
- Support research, innovation, consultancy, and community outreach activities.

Required Technical Competencies

Applicants should demonstrate sound knowledge and practical competence in most of the following areas:

Signals and Systems

- Continuous-time and discrete-time signals
- Analog and digital signals
- Linear Time-Invariant (LTI) systems
- System modeling and analysis

Signal Analysis

- Time-domain analysis
- Frequency-domain analysis
- Fourier Series
- Fourier Transform (FT)
- Discrete Fourier Transform (DFT)
- Fast Fourier Transform (FFT)
- Laplace Transform
- Frequency response of systems

Digital Signal Processing (DSP)

- Sampling and quantization
- Discrete-time signal processing
- Digital filtering
- Spectral analysis
- DSP algorithms and applications

Filtering and System Design

- Finite Impulse Response (FIR) filters
- Infinite Impulse Response (IIR) filters
- Digital filter design techniques
- Filter implementation and performance analysis

Communication Signal Processing

- Analog modulation and demodulation
- Digital modulation and demodulation
- Signal detection
- Noise analysis
- Communication signal processing techniques

Programming and Software Development

Knowledge of at least one of the following:

- Python (preferred)
- C++

FPGA and Embedded Systems

- FPGA programming
- FPGA simulation tools
- Digital hardware implementation
- Embedded signal processing applications

Databases

- Database fundamentals
- Data storage and retrieval
- Database applications for engineering systems

Engineering Software

Experience with one or more of the following:

- MATLAB
- VHDL
- Electronics Workbench (or equivalent electronic simulation software)

Electronic Measurements and Instrumentation

Practical experience using:

- Oscilloscope
- Voltmeter
- Ammeter
- Function generator
- Other electronic laboratory instruments

Electrical Circuit Analysis

- AC and DC circuit analysis
- Network theorems
- RLC circuits
- Circuit analysis techniques

Analog Electronics

- Diodes
- Bipolar and Field Effect Transistors
- Operational Amplifiers
- Analog Filters

Digital Electronics

- Number systems and digital codes
- Logic gates
- Combinational logic circuits
- Sequential logic circuits
- Finite State Machines (Mealy and Moore)
- Digital filters

Sensors and Measurement

- Analog sensors
- Digital sensors
- Signal conditioning
- Sensor interfacing techniques

Computer Networking

- Computer network fundamentals
- Routing and switching
- TCP/IP networking
- Basic network configuration and troubleshooting

Desired Competencies

- Strong analytical and problem-solving skills.
- Excellent communication and presentation abilities.
- Ability to deliver competency-based technical training.
- Commitment to laboratory safety and engineering best practices.
- Ability to work collaboratively in multidisciplinary teams.
- Strong organizational and mentoring skills.

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.