

## VACANCY ANNOUNCEMENT

### Position: Tutor – Programming and Computer Architecture

#### Duty Station

Nyamirembe, Chato, Geita.

#### Position Summary

The institution invites applications from suitably qualified and experienced candidates for the position of **Tutor – Programming and Computer Architecture**. The successful candidate will deliver competency-based theoretical and practical training in programming, software development, computer architecture, operating systems, embedded systems, and related computing technologies. The tutor will supervise laboratory sessions, student projects, and industrial training while supporting curriculum development, innovation, and applied research.

#### Minimum Qualifications

Applicants must possess:

- A **Bachelor's Degree** in Computer Science, Computer Engineering, Software Engineering, Information Technology, Electrical Engineering, Electronics Engineering, or a related field;

**OR**

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

Professional certifications in software development, cloud computing, Linux, or embedded systems will be an added advantage.

#### Key Responsibilities

The successful candidate will:

- Deliver lectures, tutorials, laboratory practicals, and programming workshops.
- Prepare lesson plans, laboratory manuals, programming assignments, and examinations.
- Supervise student software development and embedded systems projects.
- Maintain computer laboratories and development environments.
- Participate in curriculum development and continuous quality improvement.
- Assess students' academic performance and provide academic guidance.
- Support research, innovation, and industry collaboration.
- Promote software engineering best practices and laboratory safety.

## **Required Technical Competencies**

### **Programming Fundamentals**

- Algorithms and problem solving
- Flowcharts and pseudocode
- Variables, data types, operators
- Control structures
- Functions and modular programming
- Arrays and strings
- File handling
- Exception handling

### **Object-Oriented Programming**

- Classes and objects
- Inheritance
- Polymorphism
- Encapsulation
- Abstraction
- Design principles

### **Programming Languages**

Experience in one or more of the following:

- Python (preferred)
- C
- C++
- Java
- JavaScript (basic)
- SQL

### **Data Structures and Algorithms**

- Arrays
- Linked lists
- Stacks
- Queues
- Trees
- Graphs
- Hash tables
- Searching and sorting algorithms
- Algorithm complexity (Big O notation)

### **Computer Architecture**

- Computer organization
- CPU architecture

- Instruction set architecture (ISA)
- Registers
- Arithmetic Logic Unit (ALU)
- Memory hierarchy
- Cache memory
- Interrupts
- Pipelining
- Input/Output systems
- Bus architecture

## **Digital Logic**

- Number systems
- Logic gates
- Boolean algebra
- Combinational circuits
- Sequential circuits
- Flip-flops
- Counters
- Registers
- Finite State Machines (Mealy and Moore)

## **Microprocessors and Microcontrollers**

- Arduino platform
- Raspberry Pi (basic)
- Embedded programming concepts

## **Operating Systems**

- Linux fundamentals
- Windows administration basics
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## **Software Engineering**

- Software Development Life Cycle (SDLC)
- Agile methodologies
- Requirements analysis
- Software testing
- Debugging techniques
- Documentation

## **Version Control**

- Git
- GitHub or GitLab

- Branching and merging
- Collaborative software development

### **Web Programming (Basic)**

- HTML
- CSS
- JavaScript
- REST APIs
- Client-server architecture

### **Cloud Computing (Basic)**

- Cloud fundamentals
- Virtual machines
- Containers (Docker basics)
- Cloud application deployment concepts

### **Artificial Intelligence and Machine Learning (Basic)**

- Python libraries
- Data preprocessing
- Basic machine learning concepts
- AI applications

### **Development Tools**

Experience with one or more of the following:

- Visual Studio Code
- Visual Studio
- Eclipse
- Code::Blocks
- Dev-C++
- PyCharm
- MATLAB (optional)

### **Hardware and Laboratory Skills**

- PC assembly and troubleshooting
- Computer hardware diagnostics
- Basic networking
- FPGA fundamentals (optional)
- Electronic interfacing (basic)

### **Desired Competencies**

- Strong programming and debugging skills.

- Excellent analytical and problem-solving abilities.
- Ability to teach theory alongside practical application.
- Good communication and presentation skills.
- Commitment to competency-based education.
- Ability to supervise software development and embedded systems projects.
- Teamwork, integrity, and professionalism.

## **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..