

## **Unit 4 Career Opportunities in ICT**

### **Introduction**

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Increased use of ICT in many organisations and fields has led to need for personnel to create, manage, improve and maintain ICT hardware and software.

New jobs have been created in sectors such as banking, manufacturing, education institutions, communication and service industries.

Career opportunities in information and communication technology (ICT)

New jobs have been created by ICT. Professionals in the ICT field are generally called information technology workers.

### **Computer operator**

#### **Computer operator**

- a) Ensures computer stationery is available and fixed (such as cartridges or toners and printing papers).
- b) Performs data back-up procedures.
- c) Performs data processing procedures.
- d) Updates data records.

### **Programmer**

#### **Programmer**

- a) Develops in-house programs.
  - b) Customise application packages.
  - c) Installs, tests and maintains programs.
3. Software engineer
- a) Develops system software.
  - b) Develops application software.
  - c) Updates software.

### **Software engineer**

#### **Software engineer**

- a) Develops system software.
- b) Develops application software.
- c) Updates software.

### **System administrator**

#### **System administrator**

- a) Ensures reliable operation of computers.
- b) Maintains user accounts.
- c) Installs and configures new hardware.
- d) Installs and updates operating systems.
- e) Trains and supervises staff.

### **Network administrator**

#### **Network administrator**

- a) Sets-up a computer network.
- b) Maintains and enforces security measures.
- c) Monitors the use of resources.
- d) Maintains and troubleshoots network related problems.

### **Database administrator**

#### **Database administrator**

- a) Designs database applications.
- b) Sets security measures for databases.
- c) Ensures that databases are up-to-date.
- d) Creates database backups.

### **Web administrator or webmaster**

#### **Web administrator or webmaster**

- a) Develops and tests websites.
- b) Maintains updated records on websites.
- c) Monitors access and internet usage in an organisation.
- d) Downloads and uploads needed information from or to websites.

### **Computer technician**

#### **Computer technician**

- a) Troubleshoots computer hardware and software.
- b) Assembles and upgrades computer systems.
- c) Maintains computer accessories.
- d) Under the guidance of computer engineers, they design and create new hardware accessories.

### **Computer engineer**

#### **Computer engineer**

- a) Designs and develops computer controlled devices like robots.
- b) Designs and develops computer accessories.
- c) Determines electrical power requirements for computer systems and its accessories.
- d) Re-engineers existing computers components to enhance their functionality.

### **Information system manager**

#### **Information system manager**

- a) Maintains departmental inventory up to date.
- b) Departmental budgets preparation.
- c) Manages human resource in the ICT department.
- d) Schedules, controls and monitors departmental activities.

## **Computer trainer**

### **Computer trainer**

- a) Develops reference materials and user guides for learners.
- b) Trains on the use of computers and its applications.
- c) Guides learners on how to carry out research.
- d) Guides learners on career opportunities in the ICT field.
- e) Prepares learners for examinations.

## **System analyst**

### **System analyst**

- a) Reviews current information systems and recommends what to be done.
- b) Constructs and test programs.
- c) Coordinates the training of users on how to use a newly developed information system.

## **Graphic designer or typesetter**

### **Graphic designer or typesetter**

- a) Creates computer visual concepts.
- b) Prepares and prints professional publications.

## **Sales representative**

### **Sales representative**

- a) Popularise computer products.
- b) Sells computers and computer accessories.

## **Self-employment**

### **Self-employment**

- a) Vendor of computers and computer accessories.
- b) Internet service provision.
- c) Computer networking.
- d) Computer maintenance and support.
- e) Consultancy.

## **Further education opportunities offering ICT courses**

### **1. Colleges**

- a) Kenya Technical Trainers College
- b) Zenith Computer College
- c) Kitale College of Computer studies
- d) Nakuru Compstar College
- e) Atlas Computer College – Salgaa
- f) Apple computer College - Kitale
- g) Insight Computer College - Webuye

## **2. Polytechnics**

- a) Kabete National Polytechnic
- b) Kitale National Polytechnic
- c) Meru National Polytechnic
- d) Sigalagala National Polytechnic
- e) North Eastern province National Polytechnic
- f) Gusii National Polytechnic
- g) Eldoret National Polytechnic
- h) Kisumu National Polytechnic
- i) Nyeri National Polytechnic
- j) Kenya Coast National Polytechnic

## **3. Universities**

### **A) Public Universities**

- a) University of Nairobi
- b) Kenyatta University
- c) Moi University
- d) Egerton University
- e) Maseno University
- f) Jomo Kenyatta University of Agriculture and Technology
- g) Masinde Muliro University
- h) Dedan Kimathi University
- i) Laikipia University
- j) Multimedia University of Kenya
- k) University of Kabianga
- l) Karatina University
- m) Murang'a University
- n) Meru University of Science and Technology
- o) Technical University of Mombasa
- p) Kirinyaga University
- q) Taita Taveta University
- r) Machakos University
- s) University of Eldoret
- t) Masai Mara University
- u) Kibabii University
- v) Bondo University
- w) Garissa university
- x) University of Embu

## **B) Private Universities**

- a) Mt. Kenya University
- b) Daystar University
- c) Strathmore University
- d) KCA University
- e) Kabarak University
- f) Catholic University of Eastern Africa
- g) Zetech University
- h) Greta University
- i) Riara University
- j) St. Paul's University
- k) Kenya Methodist University
- l) African Nazarene University
- m) Kiriri women's University of Science and Technology

## **4. Research institutions**

- a) Zalego Software Academy
- b) Thika Institute of Science and Technology
- c) Rift Valley Institute of Science and Technology

## **Courses offered**

Different courses are offered in different types of learning institutions:

1. Research institutes and colleges offer both certificate and diploma courses in a wide scope including:

- a) ICT
- b) Programming
- c) Computer maintenance and support
- d) Computer networking
- e) Computer studies
- f) Information technology
- g) Computer science

2. National Polytechnics offer certificate, diploma and Higher National Diplomas in several fields including:

- a) Computer Science
- b) Information technology
- c) ICT
- d) Computer systems

3. Universities offer certificate, Diploma, Degree (BSc.), Masters (MSc) and Doctor of Philosophy (PhD) courses in a variety of areas including:

- a) BSc. Computer Science
- b) BSc. Information Technology
- c) MSc. Software Engineering
- d) MSc. Computer Systems
- e) PhD. Information Technology
- f) PhD. Computer Science

### **Factors to consider as you choose an institution**

- i) Time taken in the course.
- ii) Amount of fees.
- iii) Accreditation and recognisability of the institution.
- iv) Marketability of the course.
- v) Facilities available in the institution.
- vi) Qualifications required for entry.

### **Sample KCSE Questions**

1.State two roles of a programmer in a system development life cycle. (2 marks)

**KCSE 2012 Paper 1**

2.Distinguish between a system administrator and a database administrator as used in computers. (2 marks) **KCSE 2015 Paper 1**

3.Arrange the following jobs in the order of their seniority.

Databaseadministrator,ICTManager,System analyst. (1 mark) **KCSE 2015 Paper 1**

4.List two career opportunities associated with databases. (2 marks)

**KCSE 2007 Paper 1**