

NATIONAL OPEN UNIVERSITY OF NIGERIA

CIT 701



**Foundation of Information
& Communication
Technology
Course Guide**

CIT 70I Foundation of Information and Communication Technology Course Guide

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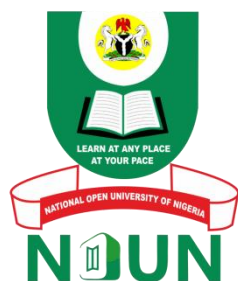
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Introduction

Information is the live wire of today's business organisations, institutions and industries. Information and communication technologies (ICT) cover all advanced technologies in manipulating and communicating information. Understanding the ICT three main components: information; the use of computers to transform data into information, communications; transmission of information through networks, technology; the expertise used for the transmission, will ease your understanding of this course.

This course, Foundation in Information and Communication Technology (ICT) focuses on the way ICT is transforming the way people do business and how ICT affects their personal lives. The emphasis is on the way ICT is used and applied for problem solving; the new and emerging technologies as they are implemented in real organisations, applications to personal and professional practice, and the challenges and opportunities of IT in local and international business solutions.

What You Will Learn In This Course

The course material has two components: the course guide and the study units. The course guide tells you briefly, what the course is about, what course materials you will be using and how you can use the materials. In addition, it advocates some general guidelines for the time you are likely to spend on each unit of the course in order to complete it successfully.

It gives you guidance in respect of your tutor-marked assignment which will be made available in the assignment folder. There will be regular tutorial classes that are related to the course. It is advisable for you to attend these tutorial sessions. The course will prepare you for the challenges you will meet in trying to build a foundation in Information and Communication Technology, by describing the combination of traditional computer and communication technologies and how they interrelate within the Enterprise.

Course Aim

The aim of this course is simply to teach you the basics in ICT and help you develop the capacity to be abreast with current technology trends, which is a key to your success with information and communication technology.

Course Objectives

In order to achieve this aim, the course has a set of objectives. Each unit has specific objectives, which are included at the beginning of the unit. You are expected to read these objectives before you study the unit. You may wish to refer to them during your study to check on your progress. You should always look at the unit objectives after completion of each unit. By doing so, you would have followed the instructions in the unit.

Below are the comprehensive objectives of the course as a whole. By meeting these objectives, you should have achieved the aim of the course. Therefore, after going through this course you should be able to:

- explain the principles and practices in information and communication technology

- identify uses, types and advantages of databases and computer networks
- discuss the importance and infrastructural use of distributed networks, the Internet and the World Wide Web
- describe how information and communication technology applications are managed by personal, enterprise and businesses, and the strategies they use to survive
- assess the challenges posed by information and communication technology and the provided solutions.

Working through This Course

To complete this course, you are required to read each study unit, read the textbooks and read other materials which may be provided by the National Open University of Nigeria.

Each unit contains self-assessment exercise and at certain points in the course you would be required to submit assignment for assessment purposes. At the end of the course there is a final examination. The course should take you about a total of 17 weeks to complete. Below you will find listed all the components of the course, what you have to do and how you should allocate your time to each unit in order to complete the course on time and successfully.

This course entails that you spend a lot of time to read and practice. For easy understanding of this course, I will advise that you avail yourself the opportunity of attending the tutorials sessions where you would have the opportunity to compare your knowledge with that of other people, and also have your questions answered.

Course Materials

The main components of this course are:

1. The Course Guide
2. Study Units
3. References /Further Reading
4. Assignments
5. Presentation Schedule

Study Units

The study units in this course are as follows:

Module 1 Introduction to Information Communication Technology

Unit 1 Information Communication Technology: Principles, Practices and Opportunities

Unit 2 Essentials of Computing

Unit 3 the System Unit and the Central Processing Unit

Unit 4 Input Devices

Unit 5 Output Devices

Unit 6 Storage Devices and Memory

Module 2 Databases and Computer Networks

Unit 1 Databases

Unit 2 Database Management System (DBMS)

Unit 3 Database Queries

Unit 4 Enterprise Databases and Data Warehouses

Unit 5 Computer Networks

Unit 6 Networking Technologies

Module 3 Distributed Networks and the Internet

Unit 1 Communication Networks

Unit 2 Enterprise and Wireless Communication Networks

Unit 3 Essentials of the Internet

Unit 4 World Wide Web

Unit 5 Electronic Commerce and Electronic Business

Unit 6 Launching Information Technology Applications Projects

Module 4 Managing Information and Communication Technology Applications in the Enterprise

Unit 1 Creating Enterprise Applications

Unit 2 Project Management

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Unit 3 Web Based Application

Unit 4 Information Systems in the Enterprise

Unit 5 Issues in Information Technology

Unit 6 Careers in ICT

For easy presentation of the course to you, we have divided the course into four modules of six units each, with each module covering an important aspect of the course; Module 1 focuses on the information dissemination and the computer system, Module 2 databases and networking technologies, Module 3 distributed networks and the Internet and Module 4 how to manage information and communication technology applications in the enterprise and the corresponding challenges.

In Module 1, the first unit focuses on the basic principles, practices and opportunities in ICT. The second unit deals with the essence of computing. The third unit discusses about the system unit (SU) and the central processing unit (CPU) acting as the brain of the computer. The fourth unit deals with the Input devices acting as the ear and eye that feed the brain with data to process. The fifth unit explores the output devices; used by the computer to transmit information to the outside world. The sixth unit discusses the storage devices and memory; that keeps information permanently and temporary, respectively.

Module 2 is made up of 6 units, and it is mainly concerned with how data and information are kept and shared among users. In unit 1, the components, types, uses and development of database applications are dealt with. Unit 2 deals with the software used in manipulating the database known as the database management system (DBMS). Unit 3 deals with the language used for easy manipulation of data in a database known as the query language. Unit 4 deals with why and how data is shared within the organisation. Unit 5 discusses the infrastructures used in sharing the data. Unit 6 being the last in this module introduces you to the concept of computer networks; the inter-connection of computers, using wires or wireless links, confined in a location or scattered around distant places for the purpose of sharing information with ease.

Module 3 comprises 6 units also, which focuses on how computers and communication devices are inter-connected to form extranets, intranets and the Internet. In unit 1, the principles of communication networks, types of network service applications, network channels and data transport technologies were discussed. In unit 2, wireless communications, the role of network operating system and network administration in an enterprise were discussed. Unit 3 introduces the concept of internet, its uses, capabilities, communication, information retrieval and differences with other networks such as extranets and intranets. Unit 4 explores the World Wide Web used to connect to the Internet and to access available resource using browser software. The Web has an e-mail facility used to transmit electronic messages over the Internet. In unit 5, the concept, advantages and disadvantages, types and ways of buying and selling over the Internet through electronic commerce were discussed. Unit 6, the last unit in module three, discusses about the ICT department, the key players and how an information system is analysed and designed objectively.

Module 4 is made up of unit 6, unit 1 focuses on how to develop and launch an ICT application in an enterprise successfully. Unit 2 deals with how to manage a project by

setting a goal, sharing responsibilities, designing a work plan and working as a team. Unit 3 deals with Web based applications; how they work, the types and advantages of technologies involved. Unit 4 described the types of information system and their characteristics, the competitive strategies used by business and enterprise resource planning. Unit 5 “Issues in Information Technology,” explores important challenges surrounding the use of ICT, including issues of IT security, digital piracy, ethics, personal privacy and ICT reliability. Finally, unit 6 “Careers in ICT,” explores the professions in the world of IT, their required qualifications and responsibilities to enable you build a career by adding value to you resume and know who to handle your job.

Each unit consists of one or two weeks’ work and include an introduction, objectives, main content (reading material), conclusion, summary, tutor-marked assignment, references and other resources. The unit directs you to work on exercises related to the required reading. In general these exercises test you on the materials you have just covered or require you to apply it in some way, hence assist you to evaluate your progress and to reinforce your comprehension of the material. The TMAs will help you in achieving the stated learning objectives of the individual units and of the course as a whole.

Presentation of Schedule

Your course materials have important dates for early and timely completion and submission of you TMAs and attending tutorials. You should remember that you are to submit all your assignments by the stipulated time and date. You should guard against falling behind in your work.

Assessment

There are three aspects to the assessment of the course. The first is made up of self-assessment exercise, second consist of the tutor marked assignments and third is written examinations/end of the course examination.

You are advised to do the exercise. In tackling the assignment, you are expected to apply information, knowledge and techniques you gathered during the course. The assignment must be submitted to your facilitator for formal assessment according to the deadline stated in the presentation schedule and the assignment file. The work you submit to you tutor for assessment will count for 30% of you total course work. At the end of the course you will need to sit for a final or end of course examination of about three hours duration. This examination will count for 70% of your total course mark.

Self-Assessment Exercise

The TMA is a continuous assessment component of your course. It accounts for 30% of the total score. You will be given four (4) TMAs to answer. Three of these must be answered before you are allowed to sit for the end of course examination. The TMAs would be given to you by your facilitator and returned after you have done the assignment. Assignment questions for the units in this course are contained in the assignment file. You will be able to complete your assignment from the information and material contained in your reading, references and study units. However, it is desirable in all degree level of education to

demonstrate that you have read and researched more into your references, which will give you a wider view point and may provide you with a deeper understanding of the subject.

Make sure that each assignment reaches your facilitator on or before the deadline given in the presentation schedule and assignment file. If for any reason you cannot complete your work on time, contact your facilitator before the assignment is due to discuss the possibility of an extension. Extension will not be granted after the due date unless there are exceptional circumstances.

Final Examination and Grading

The end of course examination for this course will be for about two and a half hours and it has a value of 70% of the total course work. The examination will consist of questions, which will reflect the type of self-testing, practice exercise and tutor-marked assignment problems you have previously encountered. All areas of the course will be assessed.

You are to use the time between finishing the last unit and sitting for the examination to revise the whole course. You might find it useful to review your self-test, TMAs and comments on them before the examination. The end of the course examination covers information from all parts of the course.

Course Marking Scheme

Assignment	Marks
Assignment 1 – 4	Four assignments, best three marks of the four counts at 10% each -30% of course marks.
End of Course Examination	70% of the overall course marks.
Total	100% of course materials.

Facilitators/Tutors and Tutorials

There are 16 hours of tutorials provided in support of this course. You will be notified of the dates, times and location of these tutorials as well as the name and phone number of your facilitator, as soon as you are allocated a tutorial group.

Your facilitator will mark and comment on your assignments, keep a close watch on your progress and any difficulties you might face and provide assistance to you during the course. You are expected to mail your Tutor- Marked Assignments (TMAs) to your facilitator before the schedule date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not delay to contact your facilitator by telephone or e-mail if you need assistance.

The following might be circumstances in which you would find assistance necessary, hence you would have to contact your facilitator if you:

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- do not understand any part of the study or the assigned readings
- have difficulty with the self-tests
- have a question or problem with an assignment or the grading of an assignment.

You should endeavour to attend the tutorials. This is the only chance to have face to face contact with your course facilitator and to ask questions which are answered instantly. You can raise any problem encountered in the course of your study.

To gain much benefit from the course tutorials prepare a question list before attempting them. You will learn a lot from participating actively in discussions.

Summary

Information is an organised, meaningful and useful interpretation of data. The foundation of information and communication technology course attempts to provide you with the basic tools, a wide variety of items and abilities used in the creation, storage and dispersal of data and information as well as the creation of knowledge. This course explores the role of ICT in today's world. Today whether you start, sell, buy, invent, build, manage, or finance companies, products, or services, you will find that a working knowledge of ICT is essential with no exceptions. Using ICT capabilities effectively and creatively can be a key to your success, whether you are focusing on a professional, healthcare, entrepreneurial, manufacturing, or service career.

This course will answer basic questions such as:

- What is information and communication technology?
- What are the functions and uses of ICT components?
- How are ICT applications and infrastructure managed in the enterprise?
- What are the importance of ICT in business and other fields?
- Who are the professionals and managers of ICT?
- What are the challenges of ICT and how can they be addressed?

Apart from the academic benefit of studying this course, you will find the principles taught in this course quite helpful in your everyday life. It is also hoped that this course will improve your quality of decision; enable you acquire ICT skills and know how to apply it to your environment.

Finally, I wish you success in the course and I hope that as you give your best to this course, you will find it both interesting and useful.