



NATIONAL CERTIFICATE
IN
INFORMATION AND COMMUNICATION
TECHNOLOGY (NCICT)

TEACHING CURRICULUM

REPUBLIC OF UGANDA



MINISTRY OF EDUCATION AND SPORTS

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Foreword

Improvement of the curricula for Technical and Vocational Certificate courses is part of the Ministry of Education and Sports' (MoES) Strategy (2008) for the provision of Technical and Vocational Education. Technical, Vocational and Business institutes are charged with training Technicians in the country. The Government of Uganda aims at providing technical, scientific and vocational skills for a majority of Ugandans in line with its emphasis on the BTVET Strategic Plan of "Skilling Uganda".

The development of this curriculum started with a survey of the world of work, which included employers of certificate courses. This culminated into the development of a Professional Profile, which includes all jobs and tasks that the graduates of National Certificate in Information and Communication Technology (NCICT) perform. This finally led to the development of all modules in this curriculum.

This curriculum is updated based on the current labour market demands and it is learner-centered and competence-based. Each academic year involves execution of a real life project that makes the technician competent in the trade. It aims at making Technical, Vocational and Business Institutions the Centre of excellence for technical and vocational education and skills development in the region, which will result in greater development and industrialization of the country.

Hon. Janet Kataaha Museveni

Minister

Ministry of Education and Sports

Acknowledgement

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NCDC recognizes the Uganda Business and Technical Examinations Board (UBTEB) for their financial and technical contributions.

The Centre further acknowledged the different institutions that directly composed the panel members for developing this curriculum. These include; Uganda Colleges of Commerce and other Private BTVET institutions.

Finally we would like to appreciate the Ministry of Education and Sports, particularly the BTVET department for the continuous support and guidance given to the Centre in fulfilling our mandate.

Grace K. Baguma

Director

National Curriculum Development Centre

Acronyms

BTVET	Business, Technical and Vocational Education and Training
CBET	Competence Based Education and Training
CGPA	Cumulative Grade Point Average
CH	Contact Hours
CSS	Cascading Style Sheets
CU	Credit Units
GP	Grade Point
HTML	Hyper Text Markup Language
LAN	Local Area Network
LH	Lecture Hours
MoES	Ministry of Education and Sports
NCDC	National Curriculum Development Centre
NCICT	National Certificate in Information and Communication Technology
PH	Practical Hours
RJ45	Registered Jack 45
UBTEB	Uganda Business and Technical Examinations Board
UCE	Uganda Certificate of Education
URL	Uniform Resource Locator
WAN	Wide Area Network
WoW	World of Work
WWW	World Wide Web

Introduction

With jobs being so scarce, the information technology industry continues to show a promising demand trend. This program will enable learners to major in information technology and get exposed to a lot of opportunities and jobs that include; typesetting documents, managing computer repair workshops, support in setting up, configuring and troubleshooting a Local Area (LAN), Web design and lab technician, do computer Graphics for both salaried and self employment

This curriculum is in line with the BTVET Act of (2008), the BTVET Strategic Plan 2011 – 2020 of “Skilling Uganda” and the Uganda Vision 2040. The modules offered in this course are packaged in a manner that will enable the learner to attain particular skills required for performing tasks at any level of the respective year of study. The competences that the learner is expected to acquire are clearly spelt out in the modules covered in each of the two semesters of an academic year.

Modules such as Computer Applications; Basic Kiswahili; Sign language and Basic Communication Skills, are aimed at enhancing the learner’s communication, report writing, and presentation skills. While modules like Microsoft Office Applications, Computer Ethics, HTML Web programming, Computer Graphics and Photo Editing, Web site Development, Data Communication and Networks, Basic Computer Repairs, and Database management system will enable the learner to demonstrate core ICT skills

Industrial Training which is done at the end of each academic year, is aimed at bridging the gap between institutional-based training and the world of work.

A professional profile was developed which is an amalgamation of the various tasks from which modules were formed. This led to the development of an educational concept which included; focus of education, assessment criteria, roles of learners and academic staff. The skills to be acquired will enhance the learners’ confidence and ability to participate effectively in income generating activities, not only as members of the business world, but also as creative citizens dealing with issues emanating from the works that impact on other people’s lives.

When effectively implemented, this curriculum will produce graduates with skills in:

Typesetting documents, Graphic design, Basic computer repairs, Local Area (LAN) support, Website design

General Guidelines and Regulations

Course Title

The course shall be called National Certificate in Information and Communication Technology (NCIT)

Duration of the Course

The National Certificate Information and Communication Technology (NCICT) is a full time course taught in two academic years.

Each academic year will be divided into two semesters. Semester one and two will consist of seventeen (17) weeks, comprising of fifteen (15) weeks of teaching/learning and continuous assessment and two (2) weeks of practical and written examinations.

In case of any problem, the course should be completed within a time frame of five years from the time of enrolment and registration.

Admission/Entry Requirements

A candidate shall be eligible for admission to the National Certificate in National Certificate in Information and Communication Technology (NCICT) course on meeting any of the following minimum qualifications:

a) Ordinary Level Entry Scheme (Uganda Certificate of Education entry scheme)

The candidate should be a holder of Uganda Certificate of Education OR its equivalent without restrictions on the passes and year of sitting,

b) Certificate Entry Scheme

The candidate should hold a Junior Vocational Certificate (JVC), obtained from any recognised institution.

Curriculum Implementation

The curriculum for National Certificate in National Certificate in Information and Communication Technology (NCICT) is based on a modular system. During the training, continuous assignments shall be carried out as a CBET requirement. This shall start with preparatory assignments that prepare the learner for the course relating it to the core tasks. Each module contains sub-modules that will help the learner to understand how to perform the core tasks through:

Applied knowledge,

Practical involvement, and

Professional attitude.

The learner will also have to carry out a real life project to put into practice the knowledge and competences acquired in class.

Prospects for National Certificate in Information and Communication Technology

NCICT graduates may opt to further their education and improve on their skills by offering a diploma and or degree Information Technology or any other vocational program of one's choice.

Assessment Criteria

Each module shall be assessed out of 100 marks as follows:

Continuous assessments	40%
Final examinations	60%

Continuous assessments

These shall be either individual based or group assignments. They will consist of:

Practical work

Classroom exercises and presentations

Assignments

Tests

Industrial Training and projects execution.

There shall be final examinations within the last two weeks of every year set and conducted by UBTEB.

A candidate shall be considered to have acquired a competence on performing tasks required in the labour market. One must have attended at least 75% of the module and undergone both continuous assessment and end of year examinations.

Continuous assessment shall be handled by the training institutions and verified by UBTEB officials.

Project Work

This involves a combination of subjects' knowledge, process skills and transferable abilities. Learners have to apply classroom knowledge and skills proactively in a real-life context for an extended period of time. Each learner will be required to run a project outside classroom time. At the end of every academic year a learner should have a visible real life project on the ground to be authenticated by UBTEB. Project work shall be assessed continuously by the instructors and marked out of 100% just like other modules. This shall be based on both the final product and the process involved in making it. A team of examiners from UBTEB shall move around to assess the implementation, authenticity, and progression of the projects.

Project assessment shall be as follows:

Innovation and creativity	10 marks
Customer care	10 marks
Neatness	10 marks
Record keeping	05 marks
Health and safety observation	10 marks

Actual performance	30 marks
Final product	25marks
TOTAL	100 marks

Industrial Training

Every learner must get a placement for Industrial Training to be done at the end of each academic year. Industrial Training shall be assessed out of 100% as a full module considering the following areas:

Attendance	05 marks
Time management	05 marks
Teamwork	05marks
Creativity and innovativeness	15 marks
Customer care	10 marks
Health and safety	15 marks
Actual performance	25 marks
Written report	20 marks

TOTAL 100%

Samples of assessment forms for the academic and the work supervisors are provided in the appendices.

UBTEB shall verify the authenticity of the Industrial Training marks awarded by the two supervisors by sending their representatives to visit the trainees at the organisations where they will be placed and working.

Awards

A learner who completes the course with at least 2.0 Cumulative Grade Point Average (CGPA) in all the modules shall be awarded a classified **“National Certificate in Information and Communication Technology** by Uganda Business and Technical Examinations Board (UBTEB).

A learner who completes the course and does not attain at least 2.0 (GPA) in some modules shall be awarded a **“Competence Certificate” in Information and Communication Technology** by UBTEB. The competence class Certificate shall enable the learner to have a specialised upgrading and employment since he/she will have attained useful competences and skills in the specialised field.

On completion of year one, a learner will be entitled to a statement of results by the examining body indicating the grades obtained in each module.

Module credits and the weighing system

Each module will be weighted using the credit units (CU).

One credit unit is equivalent to 15 contact hours (CH) per semester.

A contact hour can either be a teaching/lecture hour (LH), tutorial hour (TH), field visit hour (FVH) or practical hour (PH).

One contact hour is equivalent to 1 classroom teaching hour, 2 tutorial hours or 2 practical /field visits hours.

Modules are weighed according to credit units (CU) ranging from a minimum of 2.0 to a maximum of 5.0 based on their core relevancy in the area of specialization.

Hence a module weighed 2 CU would take 30 contact hours, 3 CU would take 45 contact hours 4 CU, would have 60 contact hours, and 75 contact hours for a module with 5 CU. No credit unit shall be awarded to any module in which a learner obtains less than 2.0 grade points.

Grading of modules

Each module shall be graded out of 100 marks and assigned an appropriate letter grade and grade points as follows:

MARKS (%)	LETTER GRADE	GRADE POINTS
80-100	A	5.0
75-79.9	B+	4.5
70-74.9	B	4.0
65-69.9	B-	3.5
60-64.9	C+	3.0
55-59.9	C	2.5
50-54.9	C-	2.0
45-49.9	D+	1.5
40-44.9	D	1.0
35-39.9	D-	0.5
Below 35	E	0.0

The grading of NCICT awarded to a learner shall be according to the Cumulative Grade Point Average (CGPA) score. The minimum pass grade point for each module is 2.0. The final marks for a module shall be converted into Grade Points (GP).

Computation of the CGPA

The learner's CGPA at a given time shall be obtained by:

Multiplying the grade points obtained in each module by the corresponding credit units assigned to the module to arrive at the weighted score for that module.

Adding together the weighted scores for all modules up to that time

Dividing the total weighted scores by the total number of credit units taken up to that time.

Classification of the Certificates

The National Certificate in National Certificate in Information and Communication Technology (NCICT) shall be classified according to the CGPA obtained up to the end of the course. The certificates shall be classified as follows:

Class	CGPA
Distinction	4.40 – 5.00
Credit	3.60 – 3.59
Pass	2.00 – 2.79

Retaking a Module

Retaking will require a learner to redo the entire module by attending lectures, doing continuous assessments, and sitting the final examinations of that module. There shall be no supplementary examination or test set for any retake but a learner may re-do a paper when the module is next examined.

A learner may retake a module to improve the grades obtained at the first sitting. Should the learner get a lower grade for a retake, his/her original grade should prevail.

A learner should be allowed a maximum of three retakes for a module.

Whenever a module is retaken and passed, the academic transcript should **not** indicate so.

Dead Year

A learner shall be allowed to apply for a dead year of study due to financial constraints, sickness or other genuine problem and should be allowed to resume the course at the level he/she exited for the dead year. A learner who applies for a dead year shall also have to complete the course within duration of five (5) years from the time of enrolment and registration into the course.

Academic Year Load

A learner shall carry a maximum of 25 Credit Units per semester.

Each academic year shall contain a maximum of eight modules/assessment units including project work.

Methodology

The teaching/learning methods in this syllabus are just samples. It is at the teacher's discretion to apply any other methods deemed suitable to the classroom setting. The type of methods selected should be guided by the competences to be acquired by the learner. The teacher is encouraged to use a variety of methods in a lesson to make it more interesting and practical. Examples of some of the teaching/learning methods include:

Discussion

Group Discussions

Learners discuss issues in groups. This methodology enables knowledge/information to come from the learners rather than from the teacher. It promotes teamwork and allows all

learners to have an opportunity to give their opinions and ideas; and also stimulates their interest as they learn from each other.

Guidelines for using group discussion method:

Group learners

Give clear instructions to learners as to what each group should do.

Assign task(s) to each group.

Give instructions on the pattern to be followed by when discussing to ensure that each individual in the group contributes.

Monitor the group discussions to ensure that the social skills development takes place.

Assign responsibilities to learners for positions of Chairperson, Secretary, Timekeeper, etc. for effective group dynamics.

Learners discuss issues raised in the task with the guidance of the teacher

Learners agree on the issues to be presented.

Group presentations and general discussions.

Summary of agreed class points.

Guided discussions

Guidelines for using guided discussion method:

The teacher leads the discussion and acts as the chairperson/secretary.

Give clear instructions to learners as to what they should do.

Learners discuss issues raised in the task with the guidance of the teacher

Learners agree on the issues.

Summarize the session by drawing on the main points.

Case Study

This method is where learners are given information about a situation and they have to come up with decisions or solutions to a problem. The purpose of case study is to:-

Help learners to identify and solve problems in a typical situation

Provide learners with confidence in decision making.

Help learners develop analytical skills.

Brainstorming

This is a way of obtaining as many views as possible from the learners in a short time. The learners should be guided to give as many ideas as they can, on a particular issue. It is recommended that all ideas are accepted without questioning. The ideas should be ranked according to the relevancy to the issue being brainstormed.

Basic rules for brainstorming

Encourage as many ideas as possible.
Criticisms of ideas should not be allowed.

Buzz Method

This is a method of training that requires learners seated near each other to discuss an issue that could have a lot of points or controversy to be agreed upon. The noise is the murmur that the class makes like that of buzz. Therefore some manageable noise or murmur should not be mistaken for no learning. This method is good in situations where one cannot conduct effective training like when it's raining.

The teacher asks questions on what learners have discussed to find out if they have understood.

Guided Discovery

This method is based on the notion that the learners know more than they think they know. The assumption is that they only need to be prompted to discover this knowledge for themselves. The teacher's role is to organise the learning environment and present the content in such a way that the learners can discover more knowledge and ideas.

Demonstration

This is the act of exhibiting, describing, and explaining the operation or process by use of a device, machine, process, product to learners. A demonstration can be carried out by the teacher or learners.

Illustration

This is a depiction or representation of a subject matter, such as a drawing, sketch, painting, photograph, or other kind of image of things seen, remembered or imagined, using a graphical representation. This method is best used where words are not sufficient to clearly bring out a concept. It gives a visual impression to what is being taught.

Guest Speaker

Guest speakers could be local entrepreneurs, government officials, professional practitioners, or community leaders invited to make a presentation to learners. Guest speakers can provide a variety to the entrepreneurship education learning, share experience, add value by engaging learners in an educational or informative manner.

The method provides learners with an opportunity to physically interact with a practitioner and motivates them to develop an entrepreneurial attitude.

Role Play

This method is where learners are presented with a situation they are expected to explore by acting out the roles of those represented in this situation. The role-play learners should

be carefully selected and properly prepared for their roles. The remaining learners should be equally prepared for the role play by briefing them on how they are to act during the presentation. The players should try to behave naturally during the presentation.

The teacher:

Observes when the presentation is taking place.

Guides learners in the course of presentation to ensure that they focus on theme of the play.

Engages learners in a discussion or asks them questions about what they have learnt from the role play with a view of finding out if the role play has provided sufficient information.

Study Tour

This is when learners are taken out to perform particular tasks with the aim of carrying out an observation, practice or witness the flow of events. It enables the learners to link the school situation with the reality in the communities or world of work.

Field Attachment

This is when learners are attached to some entrepreneur(s) to practice during their study time. It does not only enable them to relate what they have learnt in classroom but also allows them to acquire more knowledge and skills beyond what was covered. It further motives learners to becoming practitioners or entrepreneurs.

Professional Profile for the NCICT graduate

PROFILE NAME: JUNIOR IT SUPPORT TECHNICIAN

The IT Support Technician will be responsible for general maintenance of defined computer equipment and for the resolution of identified technical problems for commercial and domestic customers.

Competency	Duty	Tasks
<ul style="list-style-type: none"> By the end of the course, the learner should be able to identify and use various types of computer software <p>Installs and configures a computer system</p>	<p>Duty 1:</p> <p>Software Management</p>	<p>Test new software</p> <p>Make software available to appropriate customers where requested</p> <p>Ensure the anti-virus software is installed, kept up to date and working properly on all customers stations, where appropriate</p> <p>Set up and maintain user e-mail accounts, when requested by customers</p> <p>Provide troubleshooting resolution and updating/upgrading of software to customers</p>
<ul style="list-style-type: none"> By the end of the course, the learner should be able to; identifies the various hardware components of computers and their uses <p>Installs and configures the entire computer system</p> <p>Setup and manage a Local Area Network</p> <p>Monitor and systematically support in troubleshooting computer</p>	<p>Duty 2:</p> <p>Hardware management</p>	<p>Maintain customers computer peripheral equipment, as requested</p> <p>Assist other technicians on in the office where required</p> <p>Keep a log of all technical faults (Support log)</p> <p>Liaise with external suppliers for the repair of equipment under warranty or maintenance contract</p> <p>Provide troubleshooting resolution and updating/upgrading of hardware to customers</p> <p>Assist with and provide support/troubleshooting for server hardware</p>
	<p>Duty 3:</p> <p>Network Management</p>	<p>Check the network back up daily for maintenance customers</p> <p>Set up, maintain and remove user</p>

related issues		network accounts where appropriate Carry out routine network maintenance tasks
	Duty 4: Office Administration	Maintain stock for office and website gingerfoxit.com Order office stationary where necessary Responsible for arranging couriers for any deliveries in the office Ordering of ink cartridges and toners for customers, as and when orders are placed Checking deliveries on arrival into the office

Personal Qualities – An Help Desk Technician will need to
Be able to work on his/her own initiative Demonstrate practical knowledge and problem-solving strategies Have high quality inter-personal skills Keep abreast of new developments in software and hardware

COURSE STRUCTURE

YEAR 1: SEMESTER 1

COURSECODE	COURSE NAME	LH	PH	CH	CU
NCIT111	Fundamentals of Information Technology	30	60	60	4
NCIT112	Microsoft Office Applications	15	120	75	5
NCIT113	Basic Mathematics	30	30	45	3
GMLS111	Basic Communication Skills	30	30	45	3
NCIT114	Real Life Project	15	120	75	5
TOTAL SEMESTER LOAD					20

YEAR 1: SEMESTER 2

COURSECODE	COURSE NAME	LH	PH	CH	CU
NCIT121	Basic HTML Web Programming	15	90	60	4
NCIT122	Computer Graphics and Photo Editing	15	120	75	5
NCBS120	Entrepreneurship Skills	30	30	45	3
NCIT123	Computational Mathematics	30	30	45	3

COURSECODE	COURSE NAME	LH	PH	CH	CU
NCIT124	Real Life Project	15	120	75	5
NCIT125	Industrial Training	00	180	75	5
					20
RECESS TERM					
YEAR 2: SEMESTER 1					
NCIT211	Static Website Development	15	120	75	5
NCIT212	Electronic Communication and Networks	15	120	75	5
NCIT213	Computer Ethics	15	60	45	3
NCIT214	Real Life Project	15	120	75	5
TOTAL SEMESTER LOAD					20
YEAR 2: SEMESTER 2					
NCIT221	Introduction to Visual Basic Programming	15	90	60	4
NCIT222	Basic Computer Maintenance	15	120	75	5
NCBS220	Basic Kiswahili	30	30	45	3
NCIT223	Real Life Project	15	120	75	5
NCIT224	Industrial Training	00	180	75	5
TOTAL SEMESTER LOAD					22

DETAILS OF MODULE DESCRIPTIONS

YEAR 1: SEMESTER 1

NCIT111 FUNDAMENTALS OF INFORMATION TECHNOLOGY

Duration: 60 Contact Hours.

Overview:

This module provides a basic grounding and fluency in the basic information technology (IT) skills necessary for information professionals.

Learning outcome:

By the end of this module, learners shall be able to;

have a basic understanding of basic concepts and terminology of information technology and be able to define them

have a basic understanding of personal computers and their operations

Sub-Module 1: Introduction to Data and Information

Duration: 12Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Distinguishes between data and information. • Makes use of different types of information. • Appreciates the benefits of computers • Prepares to counter challenges associated with computers • Observes the stages involved in processing information. • Applies different methods to process data. • Identifies the appropriate data processing method • Analyses the qualities of good information. 	<ul style="list-style-type: none"> • Distinction between data & information • Types of information (text, pictures, video, audio) • Benefits and challenges of using computers • Stages in the Information Processing cycle <ul style="list-style-type: none"> - Input - Data processing - Storage - Output • Data processing Methods • Qualities of good information 	<ul style="list-style-type: none"> • Lead a guided discussion on the differences between data and information. • Brainstorm about the benefits and challenges of using computers • Display for learners the different types of information to distinguish. • Take learners through the different stages involved in information processing cycle. • Let learners brainstorm on the qualities of good information.

Assessment Strategies

Task learners to::

- Distinguish between data and information
- Describe the stages of processing information.
- Describe the qualities of good information.

Sub – Module 2: Introduction to Computer Hardware

Duration: 18 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • identifies the various hardware components of computers and their uses • Installs and configures a computer system 	<p>Hardware components their use</p> <ul style="list-style-type: none"> • Input/output Devices <ul style="list-style-type: none"> – (Keyboard and role of different keys, Mouse, Printer, Scanner) • System unit <ul style="list-style-type: none"> – CPU (CU, ALU, Cache) – Memory and its Type (Primary & Secondary) • Motherboard <ul style="list-style-type: none"> – (Data Cables, Sockets, Ports) • Cards (NIC, VGA, Sound etc) • Storage components <ul style="list-style-type: none"> – Hard Drive, CD/DVD) – Portable Devices (Flash Drive, – Card Reader, External Drives • Output components <ul style="list-style-type: none"> – Printer – Speakers – Monitors – Projector • Other peripherals <ul style="list-style-type: none"> – UPS – Scanner • Factors to consider before buying a computer or printer 	<ul style="list-style-type: none"> • Demonstrate to learners how to assemble and configure the entire computer system • Lead a guided discussion of the role of each of the hardware component to a computer system

Assessment Strategies

- Task learners to assemble a computer
- Carryout a quiz about the uses of the different hardware components

Resources

- Presentation, Computers Demos / Simulation Hardware equipment Tool kits

Sub – Module 3: Introduction to Computer Software

Duration: 18 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • identifies and use various types of computer software • Installs and configures a computer system • Identifies the functions of the operating system • Manages files stored in the computer and storage media • Creates a Folder and a files on a computer desktop in Word processor 	<ul style="list-style-type: none"> • Types of computer software • System and application • Formatting, Disk Managing & Partitioning • Installing Operating System (Windows all versions) • Anti-Virus • Drivers • Functions of Operating system software to a computer • File management • Creating a folder on the desktop • Saving a file on the desktop or folder 	<ul style="list-style-type: none"> • Lead a guided discussion the software concepts and uses of; • Software and its Types • System Software and its uses • Application Software and its uses • Guide learners to Perform installation steps of: • Formatting, Disk Managing & Partitioning • Operating System (Windows 7) • Anti-Virus and drivers

Assessment Strategies

- Let learners format and partition a hard disk and later install Windows operating system and the missing drivers
- Task learner to boot and create a folder onto the desktop

Materials

Computers, Presentations, Videos / Demos

Sub-Module 4: Computer Acquisition and Safety

Duration: 12 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Analyses the key factors before purchasing a computer. • Starts a computer operations.. • Establishes the speed and storage capacity of a computer • Identifies computer risks factors. • Securing computers against virus attacks. 	<ul style="list-style-type: none"> • Factors to consider when buying a computer • Booting methods • Checking computer speed and storage capacity • Caring a Personal computer • Types of Computer Viruses • Causes of computer Virus attack • Managing computer Virus threats 	<ul style="list-style-type: none"> • Lead a guided discussion on the factors to consider when buying a computer. • Ask learners to identify the possible risks and threats to computers. • Let learners brainstorm on the strategies for keeping computers in good working conditions. • Demonstrate to how to protect a computer from risks and threats. • Brainstorm about computer viruses • Guide learners how to scan virus threats

Assessment Strategies

Assess learners on:

- The factors to consider when selecting a computer
- The threats to computers and how they can be mitigated
- How to cold boot a computer

Teaching materials

- Un-interrupted power supply (UPS)
- Ant virus
- Computer cover
- Dusting materials

NCIT112 MICROSOFT OFFICE APPLICATIONS

Duration: 75 Contact hours

Module Overview

This module will provide learners with basic knowledge and skills to familiarise with the use and working of computers using different modern information communication technologies. They will acquire hands-on experience in Microsoft office applications such as Word processing, Spreadsheet, Presentation and publication and the use of internet resources; that will enable them to digitally access, process, store, and disseminate information.

Learning Outcome

By the end of this module, the learner should be able to:
operate computer apparatus and elementary programs without any assistance.
model and design document software applications.

Preparatory Assignment

Ask learners to identify the importance of using computers in the hotel industry.

Result

Learners pay attention to the importance of computers and develop positive attitude to personal engagement in using computers for various activities.

Sub-Module 1: Microsoft Office Word

Duration: 30 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none">• Loads a Microsoft word processing application.• Records text in a new word document.• Uses inbuilt formatting tools to make the document appear professional.• Generates automated Table of contents• Sets page layout to the	<ul style="list-style-type: none">• Loading Microsoft Word• Entering text in a new word document• Formatting text (font: colour, bold, size, alignment, line spacing, drop caps, word art, text columns)• Inserting (pictures, tables, symbols, page	<ul style="list-style-type: none">• Demonstrate to learners how to get started with Microsoft Word.• Use simulations to let learners compose text and proof read.• Guide learners on how to set page layout and margins• Demonstrate to learners how to set automated table of contents

<p>appropriate measurements</p> <ul style="list-style-type: none"> • Saves the document into Folder/Fixed or Portable storage medium • Prints the processed document. 	<p>numbers, footers, headers, text columns, footnotes/end notes)</p> <ul style="list-style-type: none"> • Mail merge • Paper orientation (portrait and landscape), • Page background (text and picture watermark, page borders/textures) • Automatic Table of contents • Saving (on desktop, folder, a fixed and portable storage media e.g. flash or compact disk) • Printing 	<ul style="list-style-type: none"> • Guide learners to use toolbar buttons to format text to appear professional • Group learners and task them to typeset a document with multiple features (stated in the contents) • Guide learners on how to save on different media • Guide and Let learners print their own documents
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Assessment Strategies

Task each learner to typeset a document with multiple features using Microsoft Word

Use of inbuilt document formatting tools.

Production of hard copies of documents.

Teaching materials

- Computers
- Overhead projector
- Printer
- Compact discs
- Flash discs
- Printing paper

Sub-Module 2: Microsoft Office Excel

Duration:20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Loads Microsoft electronic spreadsheet application. 	<ul style="list-style-type: none"> • Loading Microsoft Excel • Entering text/numbers in a worksheet • Formatting Cells 	<ul style="list-style-type: none"> • Guide learners to get started with Ms Excel. • Demonstrate the recording of data in a

<ul style="list-style-type: none"> • Records data into a spreadsheet. • Uses inbuilt formatting tools to professionally enter data in the spreadsheet cells. • Computes data using Ms Excel inbuilt functions. • Presents data using auto generated charts, tables, or graphs. • Saves the document into Folder/Fixed or Portable storage medium. • Prints worksheet documents. 	<p>(Currency, borders, commas, decimal places, alignment, merging cells)</p> <ul style="list-style-type: none"> • Computing data with inbuilt functions (Sum, Average, Max, Min, IF and Count IF) • Formatting cells (currency, borders, commas, decimal places, alignment, merging cells, text direction) • Data management (sorting, filtering) • Inserting rows, columns, • Presenting data in charts, tables, and graphs • Page layout (margins and paper orientation) • Printing a spreadsheet 	<p>worksheet.</p> <ul style="list-style-type: none"> • Task learners to compute data using Ms Excel inbuilt functions. • Task learners to format cells, sort and filter data. • Demonstrate how to create graphs and charts in a spreadsheet. • Demonstrate the computation of data simulations.
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Assessment Strategies

Assign learners to:

- Type names of students in their class and sort them in alphabetical order.
- Filter names of girls from those of boys and use an excel function to establish the total number of girls in the class
- Compute data using an inbuilt function.

Sub-Module 3: PowerPoint Presentations

Duration: 12 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Identifies the features of a PowerPoint presentation. • Prepares PowerPoint slides using inbuilt formatting tools. • Presents slides with animations. 	<ul style="list-style-type: none"> • Features of PowerPoint • Creating new slide: <ul style="list-style-type: none"> - Title Slide - Tabular slide - Two column-Text slide • Formatting a slide: Background design 	<ul style="list-style-type: none"> • Let learners identify the features of a PowerPoint document. • Demonstrate the functions of design tools in Ms-publisher • Guide learners on how to create new slides • Demonstrate the artistic

<ul style="list-style-type: none"> Prints several slides on a page. 	<ul style="list-style-type: none"> Inserting images (clip art and picture) Customized animations and transitions Creating a Slide loop Running a slide show Printing slides 	<ul style="list-style-type: none"> formatting of a slide. Let learners simulate the customization of slide transitions.
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Assessment Strategies

Let learners:

- Use simulations to create slides
- Format slides to appear artistic
- Create a slide Loop and run the slides
- Make PowerPoint presentations

Teaching resource

- Overhead Projector
- External speakers
- Laser Printer
- Compact Disk

Sub-Module4:Microsoft Access

Duration: 13 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> Loads a Microsoft Access application. Applies database terminologies correctly. Organises attributes and relations to attain data integrity. Populates database using the Form object/tool. Arranges database using Structured Query Language 	<p>Sub-Module 1: Introduction</p> <ul style="list-style-type: none"> Loading Microsoft Access Object/Tools of a database <ul style="list-style-type: none"> Table, Form, Query Report Data Attributes Setting a Primary and Foreign Keys Creating a Relationship between 2 Tables Database Normalisation / Third Normal Form (2NF) Populating a database using electronic Forms Using Reports 	<ul style="list-style-type: none"> Guide learners to get started with Ms Access. Demonstrate to learners how to create and normalise a database from (1NF-3NF) Demonstrate how to populate a database using electronic forms. Guide learners on how to compute data and query a

<p>(SQL).</p> <ul style="list-style-type: none"> • Presents data using the report object/tool. 	<ul style="list-style-type: none"> • Querying a database using clauses (AND, OR, LIKE) • Computations on captured data (Add, Subtract, Multiply, Divide and percentages) 	<p>database.</p> <ul style="list-style-type: none"> • Demonstrate to learners how database reports are created and displayed. • Guide learners on how to save and print database details
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Assessment Strategies

Task learners to:

- Normalise a database to 2NF
- Populate a database using hypothetical data
- Compute and query database using AOL Clauses
- Display reports of specific columns (attributes)

NCIT113 BASIC MATHEMATICS

Duration: 45 Contact hours

MODULE OVERVIEW

This module introduces to a Learner the concepts of Algebraic Expressions, Equations and Inequalities, Discrete Structures, Polynomials and Rational Functions, Exponential and Logarithmic Functions

Learning Outcome: the learners should be able to solve mathematical problems.

Preparatory Assignment

Display different components of a computer, let the learners arrange them according to their functions, the groups made are the different sets, identify the components that have functions that cut across and indicate them as intersections.

Result: Learners make a report and presentation of the analysis

Sub - Module 1: Algebraic Expressions

Duration:8 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none">Recognize, classifies, and uses real numbers.Simplifies algebraic expressions and solve linear equations, communicate the process and apply it to real world situations.Explores and communicates the characteristics and operations of polynomials.	<ul style="list-style-type: none">Real NumbersRational NumbersIndices, standard form and notationComputer Numbering Systems (Binary, Decimal, Octal, Hexadecimal, their conversions and application in digital machines)	<ul style="list-style-type: none">Have students discuss solved problem structures and solutions to make connections among strategies and reasoning.Select solved problems that reflect the lesson's instructional aim, including problems that illustrate common errors.Use whole-class discussions, small-group work, and independent practice activities to introduce, elaborate on, and practice working with solved problems.Encourage students to use

		reflective questioning to notice structure as they solve problems.
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Assessment Strategies

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub - Module 2: Equations and Inequalities

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> Graph linear equations using a table of values, intercepts, slope-intercept form, and point-slope form. Finds and interprets the slope of the graph of a linear function. Writes and solves systems of equations using various methods. Constructs and apply inequalities to represent real world situations, develop 	<ul style="list-style-type: none"> Linear Equations, Application of Linear Equations Quadratic Equations, Applications of Quadratic Equations Variations Inequalities 	<ul style="list-style-type: none">

solutions, and interpret the solutions within the context of the problem. <ul style="list-style-type: none"> Expresses the solution of linear inequalities algebraically and graphically. 		
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Assessment Strategies

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 3: Discrete Structures

Duration: 8 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> Solves simultaneous and quadratic equations Determines the slopes of lines and equations 	<ul style="list-style-type: none"> Sets (Venn diagrams, complements, Cartesian products, power sets) Functions Domains and Ranges of Functions Equations of a Line Graphs of Functions and Relations 	<ul style="list-style-type: none"> Guide learners to compute simultaneous and quadratic roots Guide learners on how to determine a slope of line and equations

Assessment Strategies

Give an exercise on functions and revise with the learners about lesson learnt

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 4: Polynomials and Rational Functions

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner:	<ul style="list-style-type: none"> • Solving Exponential Equations • Graphing Exponential Functions • Simplifying Logarithmic Functions • Change of Base • Solving Logarithmic Equations • Graphing Logarithmic Functions • Exponential growth or Decay 	

Assessment Strategies

Give an exercise about the lessons learnt

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub - Module 5: Logarithms**Duration 5 Hours**

Competences	Content	Teaching/Learning Strategies
The learner: Use logarithm tables to solve equations involving log functions	Theory of logarithms, common logarithms. Equations involving logarithmic functions,	Lead a guided discussion on theory of logarithms.

Assessment Strategies

Give a take home about logarithms

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

NCBS110 BASIC COMMUNICATION SKILLS

Course Code

Basic Communication Skills

Duration

45 hours

Module overview

This course introduces learners to basic knowledge and skills to communicate professionally within their environment

Learning out come

By the end of this course, learners should be able to apply the basic concepts of communication, Demonstrate knowledge and skills of communication and utilize the various forms of communication.

Sub Module: 1. Introduction to Communication

Duration

08 Hours

Competence	Content	Teaching /Learning Strategy
The learner; <ul style="list-style-type: none">• Defines communication• Identifies the importance of communication• Identifies the types and forms of communication	<ul style="list-style-type: none">• Definition of communication• Importance of communication• Types of communication• Forms of communications	<ul style="list-style-type: none">• Lead learners to brainstorm on the definition of communication• Brainstorm on the importance of communication• Lead guided discussion on types and forms of communication• Demonstrate to learners the types of communications

Assessment strategy.

Task learners to identify te types and forms of communication

Sub module 2. Grammar

Duration 04 hours

Competence	Content	Teaching /Learning Strategy
<p>The learner;</p> <ul style="list-style-type: none"> • Identifies parts of speech • Correctly spell • Construct sentences with tenses • Correctly pronounce 	<ul style="list-style-type: none"> • Parts of speech(nouns, pronouns, verbs, adverbs, adjectives, conjunctions and interjections) • Spellings • Tenses • Pronunciation 	<ul style="list-style-type: none"> • Guided discussion on parts of speech • Brainstorm on spelling of words • Lead guided discussion on spellings and pronunciations

Assessment strategy,

Task learners to identify parts of the speech

Sub module 3. Communication Process

Duration 08 hours

Competence	Content	Teaching /Learning Strategy
<p>The learner;</p> <ul style="list-style-type: none"> • Describe the elements of communication • Identifies barriers to effective communication • Identifies solutions to the barriers to effective communication 	<ul style="list-style-type: none"> • Elements of communication process • Effective communication • Barriers to effective communication • Solution to the barriers of communication 	<ul style="list-style-type: none"> • Lead discussion in groups on elements of communication process • Role play on barriers to effective communication • Guided discussion on solutions to the barriers of effective communication

Assessment strategy

Task the learners to form groups to role play on the barriers of effective communication

Sub module 4. Business correspondence

Duration 10Hours

Competence	Content	Teaching /Learning Strategy
The learner; <ul style="list-style-type: none"> Identifies business letters 	<ul style="list-style-type: none"> Business letters (application, CV, sales, order, invitation, and complaint letters) Business reports Memoranda Notices 	<ul style="list-style-type: none"> Lead a guided demonstration on major elements of business letters

Assessment Strategy

Task learners to discuss on major elements of business letters

Sub module 5. Meetings

Duration 10 Hours

Competence	Content	Teaching /Learning Strategy
The learner; <ul style="list-style-type: none"> Defines meetings Identifies types of meetings Describes procedures of organizing and conducting meetings Identifies the terminologies used, roles and responsibilities of parties 	<ul style="list-style-type: none"> Meaning and purpose of meetings Types of meetings (interviews, statutory, Annual general meeting, extra ordinary or/emergency meeting) Procedure of organizing and conducting meeting Notice of a meeting Terminologies used in meetings Roles and responsibilities of parties in meetings. (Chairperson, Secretary, Members) 	<ul style="list-style-type: none"> Brainstorm on meaning and purpose of meeting Lead guided discussions on the types of meetings Role play on organizing and conducting meetings Brainstorm on the roles and responsibilities of parties in the meetings

Assessment Strategy

Task learners to describe procedures of organising and conducting meetings

Sub module 6. Effective Public Speaking

Duration 05 Hours

Competence	Content	Teaching /Learning Strategy
The learner; <ul style="list-style-type: none">• Prepares and presents a public presentation• Identifies causes and overcomes stage freights	<ul style="list-style-type: none">• Prepare and execute public presentation• Listening skills• Stage freights• Causes of stage freights• Overcoming stage freights	<ul style="list-style-type: none">• Lead learners to demonstrate on public presentation• Role play on listening skills• Brainstorm on causes of stage freight and ways on how to overcome stage freight

Assessment Strategy

Task learners to prepare and present public presentation

NCIT114: REAL LIFE PROJECT

Duration: 75 contact Hours

The module will develop the learner's ability to be more creative and innovative in the field of production and service delivery. A learner will endeavour to make unique his/her products/services so as to attract more customers and make retention of the existing ones.

Learning Outcome

By the end of this module the learner should be able to produce products with unique features.

Preparatory Assignment

Let learners suggest ways of improving their products/service delivery.

Result

Learners come up with ideals that will enable them to improve on the quality of their products/services.

Competences	Content	Teaching/Learning Strategies
The learner: Typesets documents Sets up and manages a software or stationary kiosk Installs software Prints and photocopies documents Mobilises more funds for the business.	<ul style="list-style-type: none"> • Identification of new customers to the business • Utilisation of the available to add value to products. • Mobilisation of funds for the business 	<ul style="list-style-type: none"> • Lead a guided discussion on how to identify potential customers • Guide learners on how to utilize the available resources to add value to their products. • Guide a discussion on how to mobilise more funds for the business Guide the learner on various ways of evaluating a business
Sample Projects Typesetting business documents Printing documents Software kiosk Stationery shop Telephone services Posters Post cards Corporate Identity Cards Brochures Report cards		

YEAR 1: SEMESTER 2

NCIT121: BASIC HTML WEB PROGRAMMING

Duration: 60 hours

Module Overview

This module is designed to equip learners with basic skills of coding a webpage using Hyper Text Markup Language (HTML)

Learning Outcomes

Upon completion of this program the learner will be able to;

- Follow the workflow of programming and how to read and modify existing HTML code.
- Apply the syntax of opening, closing, and self-closing tags. Students will review many of the common HTML tags used in modern web development.
- use tags to create different elements including the fundamental elements that structure a web page
- Appreciate the importance of HTML to internet

Preparatory Assignment

Task learners to distinguish between a website and a Web page

Result

A Website is a collection of webpages

Sub – Module 1: Introduction to HTML

Duration: 12 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none">• Applies the syntax of opening, closing, and self-closing tags• uses tags to create different elements including the fundamental elements that structure a web page• Comprehends the workflow of programming and how to read and modify existing code.	<ul style="list-style-type: none">• What is HTML• Simple HTML Documents• HTML Tags• Web Browsers• HTML Page Structure	<ul style="list-style-type: none">• Lead a guided discussion about HTML• Load note pad and create a simple HTML file• Guide learners how to to identify basic parts of an HTML web page layout; <!DOCTYPE html> <html> <head> <title> <body> <h1> <p>

Assessment Strategies

Conduct a quiz by providing a list of HTML tags and task learners to identify the use of each tag

Task learners to write HTML statements using Notepad or Text editor and view it in web browser

Sub – Module 2: HTML tags

Duration: 12 Hours

Competences	Content	Teaching/Learning Strategies
The learner; Reviews many of the common HTML tags used in modern web development.	<ul style="list-style-type: none">• HTML document• HTML headings• HTML paragraphs• HTML links• HTML images• HTML buttons• HTML lists	<ul style="list-style-type: none">• Guide learners on how to add/code; headings, paragraphs, links, images, buttons and lists into their HTML file• Emphasise how the Start and End tags are coded• Give examples of tags that are self closing

Assessment Strategies

Task learners to add into their respective HTML files the additional functionalities learnt in the lesson on their own

Sub – Module 3: HTML Attributes

Duration: 16 Hours

Competences	Content	Teaching/Learning Strategies
The learner; <ul style="list-style-type: none">• Adds more information to their tags to give them control over function and appearance.• Utilizes attributes to create webpage links.	<ul style="list-style-type: none">• The Title Attribute• The href attribute• The width and height attributes• The alt attribute• Style attribute	<ul style="list-style-type: none">• Use the tag to Guide learners on how to provide additional information to an element.• Demonstrate how to adjust height and width of the image• Guide learners on the tag od alternate text for images• Guide learners how to adjust the paragraph color

Assessment Strategies

Task learners to add an image stored in their folder and adjust the image to appropriate size

Sub – Module 4: Working with HTML Paragraphs

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • Defines an HTML paragraph • Inserts a single line break • Defines pre-formatted text 	<ul style="list-style-type: none"> • Paragraph tags • The use of line breaks in HTML • How to control the line breaks in HTML • Background color 	Use an example to guide learners on how to define HTML paragraphs <p> Guide learners on how to create line breaks Guide learners how to define preformatted text <pre> Guide learners on how to change the background color

Assessment Strategies

Give an exercise and task learners to create paragraphs, line breaks and set pre-formatted

Sub – Module 5 :Working with Images

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • . alters width, height, and metadata for their images 	<ul style="list-style-type: none"> • Adding images • Adding inline images • Title and Alt attribute 	<ul style="list-style-type: none"> • demonstrate how to alter the width, height and meta data of images

Assessment Strategies

Task learners to take photos using their phones and place them into the web page

Let them download images/photos from the internet

Sub – Module 6: HTML Styles

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • styles HTML elements by enhancing their appearance 	<ul style="list-style-type: none"> • Background color • Text Color • Text font • Text size • Text alignment 	Guide learners on how apply elements styles like; <ul style="list-style-type: none"> • Background-color for background color • Color for text colors • Font-family for text fonts • Font-size for text sizes

		<ul style="list-style-type: none"> • Text-align for text alignment
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Assessment Strategies

Task learners to;

- change the background color
- change the size, color, font type, alignment of the text elements

Sub – Module 7: HTML Text Formatting

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • formats text elements using HTML tags 	<ul style="list-style-type: none"> • Bold formatting • Italic formatting • Emphasised formatting • Subscript formatting • Superscript formatting • Marked formatting • Marked inserted • Marked deleted • Formatting abbreviations and acronyms 	Guide learners on how to apply tags such as; <ul style="list-style-type: none"> • element • <i> element • element • <sub> element • <sup> element • <mark> element • <ins> element • element • <abbr>

Assessment Strategies

Give an exercise and task learners to apply the above formatting tags;

Sub – Module 8: HTML Forms

Duration: 4 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • codes actions that can be executed by the user through a button 	Form with text input Form with radio button input Form with text fields and a submit button	Guide learners on how to tag the; The <form> Element The <input> Element one-line input field for text input: radio button button for submitting the form data

Assessment Strategies

Task learners to include into their HTML file a Form with text input, radio button and a submit button

Resources

Computers with a web browser and text editor
Projector

NCIT 122 COMPUTER GRAPHICS AND PHOTO EDITING

Duration : 75 Hours

Credit Unit: 5

Module Overview

This module equips learners with skills of taking an abstract internal representation of objects and the relationship between them and turning it into an image including turning images (photos) of real-world objects into simplified representations which can be reasoned about

Learning Outcomes

Upon completion of this module, learners will demonstrate ability to;

- install Adobe Photoshop on a personal computer
- Identify and select appropriate tools from the toolbox
- repair faint or damaged photos/mages
- paint pictures with appropriate colors
- enlarge or reduce photos/images and pictures
- retouch and correct photos/images
- design business documents like; Posters, banners, Logos, Badges, stamps and book covers
- save and print designed graphics.

Preparatory assignment

Let learners Start a Photo Repair Project

Result

Learners perfect their skills of creating, editing and manipulating images to enhance their appearance.

Designed projects are saved and emailed to a receiver

A hardcopy/printout of the design is generated

Sub-Module 1: Getting Started

Duration: 12 hrs

Competences	Content	Teaching/learning strategies
<p>The Learner;</p> <ul style="list-style-type: none"> • installs and loads Adobe Photoshop • navigates the interface • setup the document size • selects appropriate tools from the toolbox • customises/sets the workspace • sets required general preferences • uses keyboard commands 	<ul style="list-style-type: none"> • Installing and loading Adobe Photoshop • Navigating the Adobe Photoshop interface • Menu bar, Workspace, panels and context menus • Setting-up the document • Creating a New file • Opening an existing file from a disk (Fixed or portable media) • View open documents or files • importance of the Toolbox • Selection Tools (Move, Marquee, Crop, Magic wand, Lasso, Brush, eye dropper) • Paint Tools (Healing brush, Clone stamp, Eraser, paint bucket, blur and Color) • Drawing tools (Path, pen, Shape and Text) • View Tools (Free hand, Magnify and background/foreground colour) • Customising the Workspace • Paper orientation, size, and colour mode • Setting general preferences • Using Keyboard Shortcuts 	<p>Guide learners how to;</p> <p>Install Adobe Photoshop on the computer</p> <ul style="list-style-type: none"> • Demonstrate to learners how to set; Page Size and Orientation, Resolution, Color Mode and Background Contents • Take learners through the layout of Adobe Photoshop interface (Menu bar, Toolbar, The image, Image name, Palettes) • Guide learners how to open an image from a disk

Assessment strategy

Task learners to;

- install adobe Photoshop onto the personal computers
- create a new file and customise the workspace
- use selection and paint tools to design basic shapes/pictures

Sub-Module 2: Working with Layers and Panels

Duration: 20 hours

Competences	Content	Teaching/learning strategies
<p>The Learner;</p> <ul style="list-style-type: none"> • uses design layers and panels to improve images • moves, delete and merges layers • enhances layers using blending mode • opens images from storage locations • places an image into a workspace • zooms images to appropriate levels • applies style effects to improve appearance of images • improves brightness and contrast 	<ul style="list-style-type: none"> • Creating new layer, Duplicate layer and Turning a selection into a layer • Moving, aligning, applying style or transform layers • Deleting, Locking/unlocking • Merging layers • Applying preset styles to a layer • Copying layer styles • Filling and grouping layers (Opacity, Tolerance, Foreground/background color and gradient overlay styles) • Using blending modes • Applying design and style effects • Adjusting color brightness/contrast (using levels and curves) 	<ul style="list-style-type: none"> • Guide learners on how to; • Create new layers • Use sliders to change the foreground and background color modes • Select Image Areas • Save a Selection • Modify a Selection • choose color from the spectrum of colors displayed • Use swatches to add a customised color to the library • Use style palette to View, select and apply preset layer styles • Access any recent stage of the image alteration • Apply and edit effects to a group of layers in Photoshop (delete, create new fill or adjustments, delete or organise images with multiple layers) • Guide learners to identify hidden tools using small black triangles in the right-hand corner.

Assessment strategy

Task learners to;

- install Photoshop on computers,

- Work with basic Selection and Paint tools to design pictures/shapes

Sub-Module 3: Working with Images

Duration: 24 hours

Competences	Content	Teaching/learning strategies
<p>The Learner;</p> <p>Customises image/picture colours</p> <p>Removes hot spot from faces already created photos</p> <p>removes an image/object from the project</p> <p>repairs faint or damaged images/photos</p> <p>paints images/shapes</p>	<ul style="list-style-type: none"> • Zooming and Panning images Resizing digital photos <ul style="list-style-type: none"> – Rotating and aligning images – Moving images – Merging images • Image Correction using; <ul style="list-style-type: none"> – Removing an object from an image – Adjusting contrast and brightness using curves – changing background and foreground colors – Changing image color (colorvs black and white) – Improving faint images (Adding flash and removing red eye) – using swatches to customize colors • Retouching photos: <ul style="list-style-type: none"> – Smoothing photos – removing the Red eye – Removing Hot spots 	<p>Guide learners on how to;</p> <ul style="list-style-type: none"> • Move object on the page using the move tool button • Use marquee tool to drag the marquee over the area of the image • Use Lasso tool to draw a freehand border around the area of the image to be selected • select all object in a document with the same or similar fill color, stroke weight, stroke color, opacity or blending mode • control what the Magic Wand tool selects • drag the crop tool over the part of the image that you want to keep/resize • use eye dropper to take color samples from colors on the page and display them in the color boxes

	– Adding flash light	
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Assessment strategy

Task learners to;

- open a faint or damaged digital photo from a camera, scanner, phone or internet
- retouch and correct the photo colour

Sub-Module 4: Working with Text and shapes

Duration: 14 hours

Competences	Content	Teaching/learning strategies
<p>The Learner;</p> <ul style="list-style-type: none"> • draws relevant shapes and text path • adds text to an image • types text along a circular text path • designs a stamp and a badge • formats text to improve the appearance 	<ul style="list-style-type: none"> • Typing in a design area • Creating a text path • Drawing shapes (circle, rectangle, square) • Typing text along a circular text path • Formatting text (Font style, size and colour) • Applying design effects to text • Designing business documents (Logos, badges, stamps, certificates, invitation cards, receipts, bankslips, book covers) • Painting images/shapes 	<ul style="list-style-type: none"> • guide learners on how to use selection tools to draw shapes • Demonstrate how to type along a drawn path • Brainstorm with learners on the various business designs that can be generated using the drawing and painting tools • Provide learners with samples of business documents and guide them to imitate the designs

Assessment strategy

Task learners to;

- Draw and paint a picture of their choice
- design a circular stamp for the office of the Guild President
- design a certificate, invitation card and book cover with artistic features

Sub-Module 5 – Using Auto Commands, Saving and Printing

Duration: 4 hours

Competences	Content	Teaching/learning strategies
<p>The learner;</p> <ul style="list-style-type: none"> • uses auto commands • designs posters, stamps, banners, receipts, receipts and book covers • saves files/projects in a desired format (PDF and JPEG) • creates an email account • sends an email of the designed project • Prints projects/files 	<ul style="list-style-type: none"> • Auto Tone, Color and Contrast • Color swatches • Creating and using gradients • Saving into different file formats (JPEG, PDF, print applications) • Printing • Creating email account • emailing a designed project 	<ul style="list-style-type: none"> • Guide learners on how auto commands can quicken photo editing. • Demonstrate to learners how to convert files to various formats • Guide learners to create an email using their phones or a computer. • Task them to send an email of their designs to your email, evaluate their designs and reply pointing at areas they can improve

Assessment strategy

Task learners to;

- Correct images/photos using auto commands
- Save work onto a desktop, compact disk or flash disk
- convert file formats e.g .PSD and .PDF
- Printout 1 copy of their project

Materials /Resources

Computer with a hard disk space 500GB with Adobe Photoshop installed

VGA Monitor/Screen with minimum resolution (1280 x 768)

Overhead Projector

White board / markers

Printer laser (color)

Internet connectivity

NCIT 123 COMPUTATIONAL MATHEMATICS

Course Description

The course gives the students a strong mathematical base to be able to tackle other computer problems. The course brings together mathematical topics which are commonly used in the general area of computer science. It builds a foundation for other courses that need special mathematical backgrounds.

Course Objectives

The aims of the course are:

- To provide students with a mathematical base that is to be used to solve computer science problems
- To improve the problem solving skills of students

Learning Outcome

Upon successful completion of this course, the student will:

- Demonstrate the basic concepts of computer logic, logic gates , their properties and applications
- Demonstrate and apply the referential methods of integration and differentiation
- Apply the different statistical and probabilistic methods of solving problems
- Apply the different numerical techniques to solve mathematical problems
- Be able to perform operations on matrices

Sub - Module 1: Boolean Algebra

Duration:8 Hours

Competences	Content	Teaching/Learning Strategies
The learner:	<ul style="list-style-type: none">• Boolean variable,<ul style="list-style-type: none">– addition,– subtraction,– multiplication,Boolean algebra,<ul style="list-style-type: none">– laws of Boolean algebra,– logic statements,– compound statements,– truth tables	<ul style="list-style-type: none">• Lead a guided•

Assessment Strategies

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 2: Linear Algebra

Duration:8 Hours

Competences	Content	Teaching/Learning Strategies
The learner:	<ul style="list-style-type: none">• Linear equations:<ul style="list-style-type: none">– systems of linear equations, homogeneous equations– non homogeneous equations• Matrices:<ul style="list-style-type: none">– matrix algebra,– identity matrix,– transpose of a matrix,– matrices and systems of linear equations,– elementary row operations and echelon matrices• Types of matrices, determinants: the determinant,• properties of determinants,• minors and cofactors,• classical ad joint, Cramer's rule	<ul style="list-style-type: none">• Lead a guided•

Assessment Strategies.

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 3: Introduction to differential and integral calculus

Duration:8 Hours

Competences	Content	Teaching/Learning Strategies
The learner:	<ul style="list-style-type: none">• Differential and Integral calculus fundamentals (single integral only)	<ul style="list-style-type: none">• Lead a guided•

Assessment Strategies

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 4: Probability Theory

Duration: 8 Hours

Competences	Content	Teaching/Learning Strategies
The learner:	<ul style="list-style-type: none">• Concept of probability:<ul style="list-style-type: none">– axiomatic approach,– relative frequency approach,– probability as a function of the sample space,– probability of an event,– properties of probabilities of events, addition and multiplication laws • Concept of sample space:<ul style="list-style-type: none">– sample space,– sample point,– tossing a coin,– rolling a die,– independent events– exclusive events– mutually exclusive events • Discrete random variables	<ul style="list-style-type: none">• Lead a guided•

Assessment Strategies

Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

Sub – Module 5: Numerical Methods

Duration: 8 Hours

Competences	Content	Teaching/Learning Strategies
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The learner:	<ul style="list-style-type: none"> • Concept of probability: <ul style="list-style-type: none"> – Introduction to flow charts and dry runs – Concept of loops from decision boxes 	<ul style="list-style-type: none"> • Lead a guided •
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Assessment Strategies

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Resources

Mathematical Text Books, Calculators. Chalk, Black/White boards

GMBS120 ENTREPRENEURSHIP SKILLS

Duration: 30 Hours

Module Overview

The content for term one introduces the learner to fundamentals of entrepreneurship that enable one to scan the environment for viable business opportunities. The learner will acquire entrepreneurial skills to turn challenges into opportunities by taking risks through planning, creativity and innovation.

Learning Outcomes

By the end of this term, the learner should be able to:

Appreciate and confidently practice entrepreneurship.

Conduct a feasibility study.

Mobilize resources and start up an enterprise.

Preparatory Assignment

Obtain a story from the newspaper, Internet, or a profile of a prominent personality who started business from scratch. In groups allow learners to read through the story and identify key issues that led to the success of the entrepreneur. The groups should also come up with similar stories from their localities.

Result

Learners get an insight into entrepreneurial activities and develop the urge to engage in business.

Sub-module 1: Introduction to Entrepreneurship

Duration: 03 Hours

Competences	Content	Teaching/learning strategies
The learner: differentiates entrepreneurship from ordinary business ventures. exhibits qualities of a good entrepreneur. practices entrepreneurial ethics.	Meaning of entrepreneurship Qualities of an entrepreneur Entrepreneurial ethics	Guide learners' discussion in reference to their group reports, presentations, and experiences from the success story on the preparatory assignment; to develop their understanding of entrepreneurship, qualities of a successful entrepreneur and ethical business behaviour. Assign learners tasks to identify

		entrepreneurial gaps in their communities by observing the major business practices and making comparative analysis. Allow learners to participate in community business activities that will help them build and nurture their entrepreneurial skills.
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Assessment Strategy

Assign the learner to identify factors affecting the development of entrepreneurs in communities, at home or place of work.

Teaching/Learning Resources

The Internet

Newspapers, business journals, magazines

Biographies

Television set, videos

Billboards

Sub-module 2: Environmental Analysis

Duration: 10 Hours

Competences	Content	Teaching/learning strategies
<p>The learner:</p> <p>scans the environment for business opportunities.</p> <p>generates ideas for the business.</p> <p>selects a viable business idea.</p> <p>obtains business rights.</p>	<p>Meaning of environment</p> <p>Scanning the environment for Business opportunities</p> <p>Generating business ideas</p> <p>Evaluation and selection of business ideas</p> <p>Protection of business (Trademark and patent rights)</p>	<p>Guide learners to brainstorm the meaning of environment and the business opportunities available in their localities.</p> <p>Display photographs or screen a video showing different environments and task learners in groups to identify the possible business opportunities available. Let them list their findings and make presentations from which real opportunities can be developed.</p> <p>Using field work, divide learners in groups and take them to the</p>

		nearby community. Task them to discuss the identified business opportunities and evaluate them and come up with the most viable. Invite a guest speaker to guide learners on protecting business ideas and products.
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Assessment Strategy

Assign the learner to:
 identify a business opportunity in the environment.
 generate business ideas and select the most viable.

Teaching/Learning Resources

- The Internet
- Newspapers, business journals, magazines
- Biographies
- Television, videos
- Billboards
- Statutes/Laws
- Guest speaker
- Computers and projectors

Sub-module 3: Innovation and Creativity

Duration: 04 Hours

Competences	Content	Teaching/learning strategies
The learner: identifies the characteristics of innovativeness and creativity.	Meaning of innovation and creativity	Guide learners through a discussion on innovation and creativity in business.
identifies forces of innovation.	Characteristics of innovative and creative persons	Lead learners to brainstorm on the characteristics of creative and innovative entrepreneurs. Task learners to discuss forces that hinder innovativeness and

devises means of overcoming barriers to creative thinking.	Forces of innovation Barriers to creativity and innovation	creativity. Invite a successful entrepreneur to motivate learners to develop a culture of innovativeness and creativity in their daily encounters.
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Assessment Strategy

Assign the learner to:

identify innovations in a trade and give the possible forces that could have led to the innovation.

suggest ways of overcoming barriers to creativity and innovation.

Teaching/Learning Resources

The Internet

Newspapers, business journals, magazines

Biographies

Television set, videos

Billboards

Statutes/Laws

Guest speaker

Computers and projectors

Sub-module 4: Business Planning

Duration: 09 Hours

Competences	Content	Teaching/learning strategies
The learner: selects the most appropriate form of small business enterprise to operate. prepares a simple business plan. prepares a simple budget for the business.	Forms of small business ownership (Sole proprietorship and Partnership) Uses of a business plan Parts of a business plan Writing a simple business plan Developing a simple budget	Guide learners to discuss the forms of small business ownership. Lead learners to brainstorm the importance of planning and budgeting before one embarks on any activity. Using a sample business plan, guide learners to discuss the various parts of a business plan and its importance. Group learners according to their trades and guide them to write a business plan for the identified opportunities and make presentations.

		Illustrate the making of a simple budget using the business opportunities identified in the business plan.
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Assessment Strategy

Assign the learner to:
 identify the benefits and challenges of small business enterprises.
 make a simple business plan.
 make a simple budget for the projected business.

Teaching/Learning Resources

The Internet
 Newspapers, business journals, magazines
 Television set, videos
 Computers and projectors
 Simple business plan and budget templates

Sub-module 5: Implementing a Business Plan

Duration: 04 Hours

Competences	Content	Teaching/learning strategies
The learner: registers a business. mobilizes resources for starting a business. locates a business in a suitable environment.	Registering a Sole proprietorship and Partnership Mobilizing business resources Financial resources Human resources Plant, machinery and equipment Locating a business	Prepare a role play on the registration process of a sole-proprietorship and partnership by the “registrar of companies” bringing out the meaning and the requirements for registration. Illustrate the process of registering a business locally and nationally Group learners into their trades to identify the following tasks: available sources of finance to raise the capital for the business. required personnel as per the business plan. required assets for the business. Take learners for a field visit to identify factors that led to location

		of different business enterprises.
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Assessment Strategy

Assign the learner to:

describe the process of registering a small business enterprise.

describe the factors that influence the location of small business enterprises.

Teaching/Learning Resources

The Internet

Newspapers, business journals, magazines

Computers and projectors

Simple business plan and budget templates

Sample Town plan

Environmental statutes

NCIT 124: REAL LIFE PROJECT

Duration: 75 Hours

Module Overview:

This module presents an opportunity for the learner to demonstrate skills obtained especially in using a computer to generate graphics and edit photos

Duration: 50 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none">• Typesets documents• Sets up and manages a software or stationary kiosk• Installs software and operate a computer system• Prints and photocopies documents	Sample Projects <ul style="list-style-type: none">• Designing certificates• Badges• Logos• Stamps• Photo retouching• Typesetting a Research booklet	<ul style="list-style-type: none">• Guide learners through the sample projects and encourage them to raise funds and start up the projects.

Assessment strategy:

- Task learners to perform atleast three projects
- Let learners place retouched images in the created web page

Teaching/ learning resources

- Sample project
- Computer
- laser Printers
- web browser / Text editor

NCIT125INDUSTRIAL TRAINING

Duration: 180 hours (6 weeks)

Competences	Content	Teaching/learning strategies
The learner: Demonstrates ability to use a computer to solve general user needs	<ul style="list-style-type: none">• Using MS office Applications to input and printout information• Retouch photos using graphic application• Applying safety measures when handling ICT equipment• Demonstrating effective communication skills	. Use the Industrial Training Guidelines

Assessment Strategy

- Field supervisors scores the candidate according to the attached Industrial Training Guidelines
- Academic supervisor visits the Trainee in the Field to observe the Trainee performance, also interviews the Field supervisor about the Trainees performance

Resources

- Telephone contact/address of the Trainees and Place of industrial training
- Assessment Forms
- Transport facilitation to the field

YEAR 2 SEMESTER 1

NCIT211 STATIC WEBSITE DEVELOPMENT

Duration : 75 Contact Hours

MODULE OVERVIEW

The module introduces Learners to local and wide area network components, structures, functions and uses; principles of web design and development; World Wide Web Consortium (W3C) standard mark up language and services of the Internet.

Learning Outcome:

By the end of this module, the Learner should be able to use WYSIWYG web page authoring tools and graphic software to create simple, usable web sites.

Preparatory Assignment:

Learners are given a task to extract information from the internet.

Result: The learners submit the information using the lecturer's email address.

Sub – Module 1: Introduction to Cascading Style Sheets (CSS)

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none">• . changes the styles of the elements using various ways of inserting CSS HTML files• Reduces file size• Easily maintains webpages• Improves flexibility	<ul style="list-style-type: none">• What is CSS• Internal CSS• External CSS• Inline Styles• The Div Tag	<ul style="list-style-type: none">• Lead a guided discussion about the difference between HTML and CSS• Guide learners on how placing the CSS code within the tags of each (X)HTML file you want to style with the CSS.• Guide learners on how to use text editor and place a link in the head section of every (X)HTML file you want to style with the CSS file

Assessment Strategies

Task learners to use the Internal, External and inline styles in the created HTML file
Give an assignment

Sub – Module 2: CSS Syntax

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none">• .applies the correct systax to when dealing with multiple properties of each selector• Applies a single expression to change the	<ul style="list-style-type: none">• The 3parts of CSS syntax• Inheritance• Different States of anchor tag• Sibling and child selector of CSS	<ul style="list-style-type: none">• Lead a guided discussion about; Selector (Property: Value).• Guide learners on how to nest• Guide learner on how commas, bracket and quotations are used to separate multiple properties e,g

appearance of all text in an (X)HTML file		<pre>body { background: #eeeeee; font-family: "Trebuchet MS", Verdana, Arial, serif; }</pre> <p>Guide learner on how to nest one element inside another e.g</p> <pre>body {font-family: Verdana, serif;}</pre>
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Assessment Strategies

task learners to change the font style of the entire file to Tahoma

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub - Module 3: CSS Classes

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> .changes the appearance of a selected word leaving other text untouched 	<ul style="list-style-type: none"> Changing the color of a selected word while leaving the rest untouched 	<ul style="list-style-type: none"> .guide learners on how to use the <Span Class- "element "

Assessment Strategies

Task learners to add their names into the HTML file and let them change the color of their first name only

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub - Module 4: CSS IDS

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> .Uses CSS IDs to declare to style the layout elements of a page that will only be needed once and uses classes to style text that has to be 	<ul style="list-style-type: none"> Difference between CSS Classes and CSS IDs 	<ul style="list-style-type: none"> Using an example .guide learners when to use either the Classes of IDs e,g #container{ width: 80%; margin: auto; padding: 20px; border: 1px solid #666; background: #ffffff; }

declared multiple times		
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Assessment Strategies

Give a task related to CSS IDs

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 5: CSS Margins

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • .declare the margin between an (X)HTML element and the elements around it 	<ul style="list-style-type: none"> • Top, • Bottom, • Right, • Left 	<ul style="list-style-type: none"> • .use an example to guide learners on how to set the margin property for Top, Left, Right and bottom of an element

Assessment Strategies

Give an assignment requiring learners to declare all the margins of an element in a single property

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 6: CSS Padding

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none"> • .Applied the appropriate padding style • 	<ul style="list-style-type: none"> • Meaning of Padding • Single Vs all the 4 values of an element 	<ul style="list-style-type: none"> • .Using an example guide learners on how to declare all 4values of an element • Also guide learners to visualize the effect of the undeclared values

Assessment Strategies

Give an assignment about declaring a portion of the values

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 7: CSS Text Properties

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • .sets the text color • Applies appropriate line space between letters • Aligns text • Decorates text • Formats text to either lowercase, Capitalize • Control the white space in an (X)HTML file • Adjusts the spaces between words 	<ul style="list-style-type: none"> • Color • Line spacing (Normal and Length) • Text Align (Left, Right, Center, Justify) • Text Decoration (Underline, line through, blink) • Text Transform • White space • Word spacing 	<ul style="list-style-type: none"> • .Guide learners on how to set the color of text using possible values • Demonstrate to learners how the adjust space between letters using pxs • Guide learners on how to align text • Guide learners on how to decorate text • Guide learner on how to changes text to lowercase or Capitalize or none in a file • Guide learners on how to control the White space in an (X)HTML file • Guide learners on how to adjust the spaces between words e.g at 5pxs

Assessment Strategies

Give an exercise about CSS Text properties and revise with the learners

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 8: CSS Font Properties

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
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<p>The learner:</p> <ul style="list-style-type: none"> • Sets font style Weight, and Size • 	<ul style="list-style-type: none"> • Font • Font-Family • Font Size • Font Weight 	<ul style="list-style-type: none"> • Guide learners how to set font to italic, bold, normal <p>Guide learner on hot to set font size using the choices for values</p> <p>Guide learners on how to control the weight of text in an element with font-weight property</p>
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Assessment Strategies

Give tasks in the learnt lesson

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 9: CSS Anchors and Links

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <p>Changes the color of the link when;</p> <ul style="list-style-type: none"> • No event is occurring • When the user has already visted the url • As the user places their mouse pointer over the link 	<pre>a:link {color: #009900;} a:visited {color: #999999;} a:hover {color: #333333;} a:focus {color: #333333;} some link text</pre>	<p>Guide learners on how to change link color when;</p> <ul style="list-style-type: none"> • no event taking place, • The user has already visited the url • As the user places their mouse pointer over the link

Assessment Strategies

Give tasks in the learnt lesson

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 10: CSS Background

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner is able to</p> <ul style="list-style-type: none"> • style the background of an element in one declaration with the background property e.g.background: #ffffffurl(path_to_image) top left no-repeat fixed; • make a choice of letting the background image scrolls with the page or is fixed when the user scrolls down the page with background-attachment property • declare a color for the background of an element using the background-color property • position an image used for the background of an element using the background-position property 	<p>Background Background Attachment Background Color Background Image Background Position</p>	<p>Guide learners on how to;</p> <ul style="list-style-type: none"> • style the background of an element in one declaration with the background property e.g.background: #ffffffurl(path_to_image) top left no-repeat fixed; • make a choice of letting the background image scrolls with the page or is fixed when the user scrolls down the page with background-attachment property • declare a color for the background of an element using the background-color property • position an image used for the background of an element using the background-position property

Assessment Strategies

Give tasks in the learnt lesson

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub – Module 11: CSS Borders

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner is able to</p> <ul style="list-style-type: none"> • set the color of a border independently with 	<ul style="list-style-type: none"> • Border Color (Transparent RGB color mode) • Border Style (dashed, dotted, groove etc) 	<p>Guide learners on how to;</p> <ul style="list-style-type: none"> • set the color of a border independently with the border-color

<p>the border-color property</p> <ul style="list-style-type: none"> • set the style of the border independently with the border-style property • 	<ul style="list-style-type: none"> • Border Width (Length, Thin, Medium, Thick) 	<p>property</p> <ul style="list-style-type: none"> • set the style of the border independently with the border-style property
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Assessment Strategies

Give an assignment about setting the border Color, border Style and Border Width

Teaching Resources/Materials

A browser, Text Editore.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

Sub - Module 12: Creating a Complete Website project

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Codes the webpage • Adds a header and the navigation area • Applies iframes • Creates a footer • Includes the Contact Us page 	<ul style="list-style-type: none"> • Creating the coding of webpage • Creating a basic designing layout for webpage • The header and the navigation Area • The right side Area • Making the main Post • Applying Iframes • Creating Footer • Creating Contact Us page 	<ul style="list-style-type: none"> • Guide learners on how to create a complete website project by adding more features like footer and relevant web pages

Assessment Strategies

Task learners to complete their webpage projects having all the basic features

Teaching Resources/Materials

A browser, Text Editor e.g Chrome or Mozilla and internet Connectivity, computers and an overhead projector

NCIT212 NETWORKING AND DATA COMMUNICATION

Duration: 60 hours

MODULE OVERVIEW

This module, introduces the Learners to the basics of data communications and networks. It also gives the theoretical and practical skills of linking up computers and sharing computer resources.

Learning Outcome: the Learner demonstrates data flow in a simple network, design a network, terminate cables and configure a network connection.

Preparatory Assignment

Learners are given a simple design of Local Area Network (LAN), to terminate the cables required to connect the network.

Result: Learners terminate cables on design of a network and hand in for marking.

Sub – Module 1 :Network Basics

Duration: 20 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner: Identifies and uses network component Classifies various network connections Assigns IP addresses to network components</p> <ul style="list-style-type: none"> punches various type of cable connectors Identifies different LAN topologies. Evaluates the relevancy of networks Classifies Networks 	<ul style="list-style-type: none"> Meaning of networks Advantages of networking to an organisation Challenges faced when using computer network Strategies to overcome the challenges <ul style="list-style-type: none"> Components of a LAN <ul style="list-style-type: none"> Node, NIC and Modem Access point Hub (active & Passive) Repeaters & Bridge Switch & Routers Network cable connectors <ul style="list-style-type: none"> RJ-45 BNC 	<ul style="list-style-type: none"> Lead a guided discussion and identify the components of a computer network while classifying. Lead a guided discussion on the importance components of a LAN Guide learners on how to examine the use of the different connectivity devices Demonstrate the punching of various types of cable

<ul style="list-style-type: none"> Plans for a LAN and assigns IP addresses 	<ul style="list-style-type: none"> – db9 serial pinout – DB-25(Parallel) • Classification of networks. <ul style="list-style-type: none"> – LAN – Topologies (Ring, Star, Bus and hybrid) – WLAN (Wi-Fi and Bluetooth) – WAN • IP Addressing and Sub-netting. 	<p>connectors</p> <ul style="list-style-type: none"> • Demonstrate to the learners how to subnet and configure IP addresses <p>Lead a guided discussion on the different network cable connectors</p> <ul style="list-style-type: none"> • Guide learners on how to classify network • Lead a guided discussion on how to subnet a Local Area Network
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Assessment Strategies

Learners do assignment on classification of networks

- Task learner to punch a cat 6 or cat 5 cable and test it
- let learner Connect the punched cables to an Ethernet card
- Task learners to assign IP addresses to the network printer and workstations
- Task learners to evaluate computer networks

Teaching Resources/Materials

Networking software; packet tracer, working computers, Network cards, Cables, Switch device and crimping tool

Sub - Module 2: Transmission Media and components

Duration: 8 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> Distinguishes digital from analog signals 	<ul style="list-style-type: none"> • Difference between Analog and Digital signals • Forms of data transmission <ul style="list-style-type: none"> – Simplex 	<p>Lead a guided discussion on;</p> <ul style="list-style-type: none"> • Distinguishes Digital from Analog signals

<ul style="list-style-type: none"> • Identifies Transmission media • uses the appropriate network cables • Setup a Peer-to-Peer and server based network • Setup a hotspot for unguided data transmission 	<ul style="list-style-type: none"> – Half duplex – Full duplex • Layout of various cables and their usage: <ul style="list-style-type: none"> – Coaxial cable – Twisted Pair Cable (Cat 5, Cat 6) – Fibre Optic Cable – Peer-to-Peer LAN – Server Based/StarLAN – Hybrid Network • Wireless Media Systems <ul style="list-style-type: none"> – Terrestrial Microwaves – Radio Waves – Satellite – Wireless Communication – Transmission Impairments and errors • IP Address classes, ranges and their default subnet masks 	<ul style="list-style-type: none"> • Uses of the different forms of data transmission • Use samples to discuss to the learners the role of the different network cables • Lead a guided discussion on the unguided media and their uses • Guide learners how to setup a Peer-to-Peer and server based network • Take learners through transmission impairments occurrence, how to overcome such errors in Analog & Digital Transmission.
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Assessment Strategies

Task learners to identify the different network cables and their uses

Task learners to suggest application areas of unguided media system

Teaching Resources

Presentations, Videos / Demos Simulations Manuals

Computers, Demonstration software, Projector, Reading Texts, network cables, networking tool box with crimping tool

Internet connectivity

Sub-Module 3: Internet Connectivity

Duration: 8 Hours

Competence(s)	Content	Teaching Strategy
<p>The Learner;</p> <ul style="list-style-type: none"> • Connects to the internet • Identifies services offered by the internet 	<ul style="list-style-type: none"> • Components needed to connect to the internet • Services offered by internet • Disadvantages of the internet to an 	<ul style="list-style-type: none"> • Brainstorm on the components needed to connect to the internet

<ul style="list-style-type: none"> • Connects to the internet • Creates an email account • Sends and receives electronic messages • Searches for information using search engines • Applies the internet terminologies 	<p>organisation</p> <ul style="list-style-type: none"> • Creating an email account • Sending and receiving an Email • Searching for information on the internet • Network terminologies <ul style="list-style-type: none"> – Data – Bandwidth – Up loading – Down loading 	<ul style="list-style-type: none"> • Guide learners on how to connect to the internet and create an email account • Discuss to the learners on how to send and receive messages • Guide learners on how to apply cyber ethics
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Assessment Strategies

Task learner to create an email account

Let them search for information on the internet and send to the facilitators email

Teaching Resources/Materials

Computers with internet connectivity, overhead projector

Sub – Module 4: : Basics of Operating System software

Duration: 12 Hours

Competence(s)	Content	Teaching Strategy
<p>The learner:</p> <ul style="list-style-type: none"> • installs/upgrade and troubleshoots windows operating system 	<p>Client End/Window</p> <ul style="list-style-type: none"> – 32 bits and 64 bits OS – FAT-16/32, NTFS, – Configuration of Disks – Preparing Partitions and Volumes – Configurations of Device Drivers – Install / Upgrade / Troubleshoot Operating System 	<p>Guide learners on how to install/upgrade and troubleshoot windows operating system software</p>

Assessment Strategies

Task learners to install and upgrade Windows 7 on the end user computer

Resources

Windows 7 with SP3, Computers, Presentations, Demos / Videos Manuals

Sub – Module 5: Troubleshooting a Local Area Network

Duration:12 Hours

Competences	Content	Teaching/Learning Strategies
<p>The learner:</p> <ul style="list-style-type: none"> • Identifies common Network problems • Examines the causes of network failures • Applies preventive measures to prevent network failures • Assigns static IP address • Connects to a WiFi Connection • Fixes authentication problem on a WiFi • Re-sets a WiFi Router 	<ul style="list-style-type: none"> • Steps to diagnose a network problem • Causes of network failures • How to prevents causes of network failures • Troubleshooting basic tools for Windows connection • Guided network <ul style="list-style-type: none"> – How to connect to a guided network – How to use a static IP instead of the DHCP address • Unguided/Wireless <ul style="list-style-type: none"> – How to connect to a WiFinetwork – How to solve authentication problems on a WiFi – How to re-set a WiFi Router 	<ul style="list-style-type: none"> • Lead a guided discussion about the common network problems <p>Guide learners on how to;</p> <ul style="list-style-type: none"> • assign Static IP address on the LAN • get a WiFiconnect to a WiFi • solve authentication problems • Re-set a WiFi Router

Assessment Strategies

Task learners to;

- a) Let learner select network cables and create a peer-peer
- b) Create a server based network and create 5user accounts with limited access right
- c) Create static IP address for a wireless connection
- d) Change the default password of the Wi-Fi Router to; NCICT@12
- e) Explain the role of PING as a troubleshooting tool

Resources

Windows 7/Windows 8, Driver Pack 15, Computers, Presentations, Demos / Videos Manuals

NCIT 213 COMPUTER ETHICS

Contact 45 hours:

Module overview

This module is a new branch of ethics that will enable the learners to demonstrate ethical behaviours in the field of Information and Communication technology that is growing and developing rapidly

Preparatory Assignment

Let learners brainstorm on the examples of current misuse of computers and the effects to society

Result

They state both the moral and immoral behaviours computer users

Sub-module 1: Introduction to IT ethics

Duration: 12 Hours

Competences	Content	Teaching/ Learning Strategies
The learner: <ul style="list-style-type: none"> Applies ethical behaviours when using the internet 	<ul style="list-style-type: none"> Meaning of ethics Forms of ICT Ethics The ethics of using computers between the person and the same. The ethics of using computers between the persons. Ethics between the user and device. Importance of Ethical behavior to a user 	<ul style="list-style-type: none"> Brainstorm on the unethical behaviours of computer users in society Lead a guided discussion on the forms of ICT Ethics Lead a guided discussion on the importance of Ethical behaviours

Assessment Strategy

Task learners to explain the importance of ICT ethical behaviours to the organization

Sub-module 2: Scenarios of computer misuse and effects to society

Duration: 8 Hours

Competences	Content	Teaching/ Learning Strategies
The learner: <ul style="list-style-type: none"> Analyses the effects of a computer misuse 	<ul style="list-style-type: none"> Media/software Piracy Intellectual Property theft 	<ul style="list-style-type: none"> Lead a guided discussion on situations involving computer misuse

<ul style="list-style-type: none"> Identifies the effects of computer misuse 	<ul style="list-style-type: none"> Ransomware attacks Identity Theft Financial Theft Pornography 	<ul style="list-style-type: none"> Brainstorm with the learners about the effects of computer misuse
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Assessment Strategy

Give an assignment for learners to present about scenarios of computer misuse and the effects

Sub-module 3: Forms of computer software Attacks

Duration: 8 Hours

Competences	Content	Teaching/ Learning Strategies
The learner: <ul style="list-style-type: none"> Identifies threats to computer software Documents the software attacks for mitigation Mitigates cyber threats systematically 	<ul style="list-style-type: none"> Attack form Viruses Worms Trojan horses Denial Of Service Brute force Steps to mitigate cyber risks 	<ul style="list-style-type: none"> Lead a guided discussion on the various software attacks Brainstorm on the methods of mitigating the threats caused by the software attacks Lead a guided discussion on the 5steps to mitigate cyber threats

Assessment Strategy

Task learners to discuss the impact of the software attacks learnt in the lesson

Give an assignment of a cyber risk and task learners to state the steps they would follow to mitigate the risk

Sub-module 4: Ethical Challenges in Information Technology

Duration: 8 Hours

Competences	Content	Teaching/ Learning Strategies
The learner: Identifies the ethical challenges encountered in IT	Security Privacy issues Copyright infringement Increased pressure on IT Experts Digital divide	Lead a guided discussion on each challenge giving examples Lead a guided research in establishing the examples

Assessment Strategy

Task learners to explain the different ethical challenges faced by IT managers

Sub-module 5: Ethical Code of conduct in ICT

Duration: 9 Hours

Competences	Content	Teaching/ Learning Strategies
The learner: Applies the 10 commands of computer ethics	The 10 commandments of computer ethics Importance of a cyber law	Lead a guided discussion on the 10 commandments of computer use Brainstorm on the importance cyber laws in Uganda

Assessment Strategy

Task learners to recite the 10 commandments of Computer ethics

Let learners write the importance of a cyber law in Uganda

NCIT 214: REAL LIFE PROJECT

Duration: 75 Contact Hours

Module Overview

The module is intended to enable learners to improve the customer care and expand on their projects. It will involve application of social skills to make customers keep coming back for more products/services.

Learning Outcome

By the end of this module, the learner should be able to present a variety of real-life products as well as the procedures followed to make them.

Preparatory Assignment

Let learners make and present items of their projects

Results: Learners presents products of what they have been doing for the first two terms for the class to critique.

Competences	Content	Teaching/Learning Strategies
The learner: Improves on the quality of products/services. Makes more products to expand on the project. Presents the project products/services.	Product/service modification Project expansion Project presentation	Guide lines on how to improve on the project outputs. Demonstrate to learners the need to diversify the project services. Let learners present the outcomes of their projects.
Sample Projects Start developing a Static Website Setting and maintaining and Local Area Network (LAN)		

Assessment strategy

Let the learners chose a project and deliver it

YEAR 2 SEMESTER 2

NCIT221 VISUAL BASIC PROGRAMMING

Duration: 60 hours

MODULE OVERVIEW

Computers have become an integral part of modern civilization. In our today life, millions of computers are running endless applications to meet our personal, social and professional needs. These computer applications are created by using different programming languages.. Visual Basic is based on the BASIC language and provides a variety of tools to create user-friendly applications with Graphic User Interface.Its easy and powerful.

Learning Outcome:

- Identify the Elements of a Visual Basic Application
- Create simple event driven applications which encourage higher user interaction through icons, menus, pointer, buttons, dialog boxes etc

Preparatory Assignment

Learners are given a task to mention the different programming languages they have heard and seen before

Result:

Learners provide answers that include C#, C++, JavaScript, Python and VB NET.

Sub-Module 1: Elements of a Visual Basic Application

Duration: 8 Hours

Competence(s)	Content	Teaching Strategy
<p>The Learner;</p> <ul style="list-style-type: none"> • downloads and installs Visual Studio onto their Personal Computers • Lists the two elements of a Visual Basic Application. • States the purpose of a GUI and what elements does a user 	<p>Creating the Graphical User Interface</p> <ul style="list-style-type: none"> • Downloading and installing Visual S • Object types and their use <ul style="list-style-type: none"> – Label 	<ul style="list-style-type: none"> • Discuss to learners on the history of VB and how to download Visual studio onto their computers • Guide learners about the role of the different

<p>see in a GUI</p> <ul style="list-style-type: none"> • Explains what does a Visual Basic toolbox provide • Names and describe the four most commonly used Toolbox objects. • States when an application is run, what does a design form become? • Codes and Identifies what is executed when an event occurs 	<ul style="list-style-type: none"> – TextBox – Button – CheckBox – RadioButton, – List Box – ComboBox – Time and – PictureBox • Coding an Event (stop watch timer) 	<p>elements in Visual Basic Application.</p> <ul style="list-style-type: none"> • Discuss the different objects in the VB Toolbox • Guide learners how to create a stop watch timer as their first application in VB.Net
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Assessment Strategy

Task learners to;

- List the two elements of a Visual Basic Application.
- State the purpose of a GUI and what elements does a user see in a GUI
- Explain what does a Visual Basic toolbox provide
- Name and describe the four most commonly used Toolbox objects.
- State when an application is run, what does a design form become?
- Identify what is executed when an event occurs

Resources

Software resources like VB v6, VB .Net or VB .Net 2003

Sub-Module 2: Getting Started in Visual Basic

Duration: 4 Hours

Competence(s)	Content	Teaching Strategy
<p>The learner;</p> <ul style="list-style-type: none"> • Starts Visual Basic .NET • Uses the Toolbox • Sets the object's properties • Runs an application • Saves and recalls a 	<ul style="list-style-type: none"> • Starting Visual Basic <ul style="list-style-type: none"> – Visual Basic .NET Start page – Recent – Open project – New Project dialog • Using the Toolbox • Initial form Window 	<ul style="list-style-type: none"> • Guide learners on how to; start Visual Basic .NET • Utilize the objects in the toolbox to create an application • Run an application • Save and recall a project

project	<ul style="list-style-type: none"> • Setting an Object’s Properties • Running an Application • Saving and Recalling a Project 	
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Assessment Strategy

Assign learners to give answers to the following questions;

- Describe the difference between design time and run time.
- Name the three windows that should be visible during an application’s design.
- What are the steps for opening each of the windows listed in your answer to Exercise 2a?
- What two Form properties should be changed for every application?
- List the steps for creating a Visual Basic application.

Resources

Software resources like VB v6, VB .Net or VB .Net 2003

Sub-Module 3: Visual Basic Data

Duration: 4 Hours

Competence(s)	Content	Teaching Strategy
<ul style="list-style-type: none"> • Identifies the types of Visual Basic data • Uses the Dim statements to declare variables 	Types of Visual Basic Data <ul style="list-style-type: none"> • Numeric Data • Non Numeric Data • Suffixes and Literals • Declaration various variables using the dim statements 	Lead a guided discussion about the types of Visual Basic Data Guide learners on how to use the Dim Statements

Assessment Strategy

Task learners to;

List out all numeric and non –numeric data types

Use the Dim statements to declare two Numeric Variables and two non-numeric Variables

Resources

Software resources like VB v6, VB .Net or VB .Net 2003

Sub-Module 4: Managing Visual Basic Data

Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
<ul style="list-style-type: none"> • Assigns values to the 	<ul style="list-style-type: none"> • Assigning Values to the Variables 	Using examples Guide

<p>variables</p> <ul style="list-style-type: none"> Identifies and uses appropriate arithmetic operators 	<ul style="list-style-type: none"> Mathematical Expression A number A string A Boolean value (True or False) <ul style="list-style-type: none"> Arithmetic Operators in Visual Basic <ul style="list-style-type: none"> ^ Exponential Multiplication / Division + or & String concatenation 	<p>Learners on how to; Assign values to the variable Apply the appropriate arithmetic operators</p>
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Assessment Strategy

Task learners to code as follows;

```
Dim firstName As String
Dim secondName As String
Dim yourNames As String
```

```
Private sub Command1_click()
firstName=Text1.Text
secondName.Text2.Text
yourName=secondName+**+firstName
Label1.Caption=yourName
End Sub
```

Sub-Module 5: Controlling Program Flow

Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
<ul style="list-style-type: none"> Applies the conditional operators Identifies and uses appropriate arithmetic operators 	<ul style="list-style-type: none"> Getting to know the conditional Operators <ul style="list-style-type: none"> = Equal to > More Than < Less Than >= More Than and Equal <= Less than and equal <> Not Equal to 	<p>Using examples Guide Learners on how to; Apply the conditional operators</p>

	<ul style="list-style-type: none"> Logical Operators And Or Xor Not Using if..... Then....ElseifElse Statements with operators 	
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Assessment Strategy

Give an example that will require learners to Code a program that will check whether the password entered by the user matches the password assigned by the Form_Load procedure

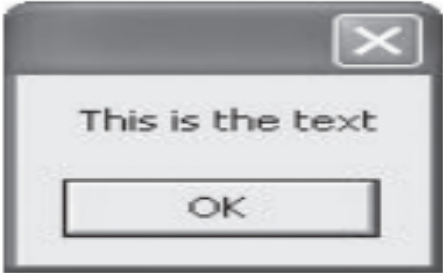

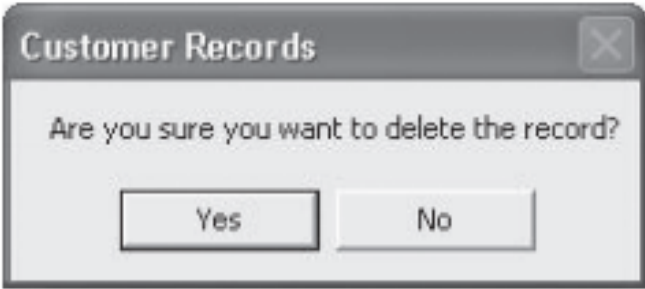

Resources


Software resources like VB v6, VB .Net or VB .Net 2003

Sub-Module 6: Adding an Event Procedure Code

Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
The learner, Codes structure of an event procedure in Visual Basic	<ul style="list-style-type: none"> structure of an event procedure 	Discuss to the learner the structure of an event procedure
<pre>Private Sub Form1_Click(ByVal sender As Object, ByVal e As _ System.EventArgs) Handles MyBase.Click</pre>		
The Learners Codes simple message box	A Simple Message Box	Guide learners on how to code a simple message box

		
<p>Codes a message box with Title</p>	<ul style="list-style-type: none"> • A Message Box with Title 	<p>Guide learners on how to code a message box with Title</p>
<ul style="list-style-type: none"> • Learner codes A Message Box with Title and Yes/No Buttons 	<ul style="list-style-type: none"> • A Message Box with Title and Yes/No Buttons 	<ul style="list-style-type: none"> • Guide learners on how to code A Message Box with Title and Yes/No Buttons
<ul style="list-style-type: none"> • Learner, codes Message Boxes with Title and OK Button and Information Icon 	<p>Message Boxes with Title, OK Button, and Information Icon</p> 	<ul style="list-style-type: none"> • Guide learners on how to code Message Boxes with Title and OK Button and Information Icon

		
The learner Debugs a code	<ul style="list-style-type: none"> • Correcting Errors 	Guide learner on how to identify and debug an error in the code

Assessment Strategy

. Task learners to

- Define the following terms
 - event-procedure
 - dialog box
 - method
 - header line
 - argument
- Design and run the application presented in this section using the `MessageBox.Show` method in the form's click event procedure.

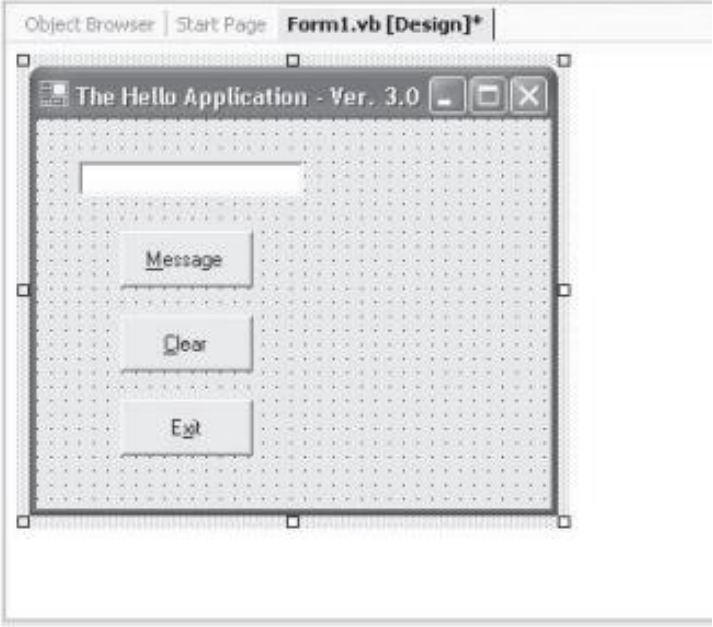
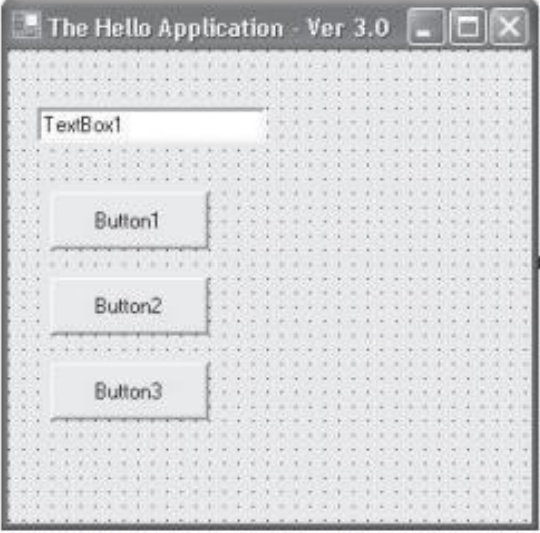
Resources

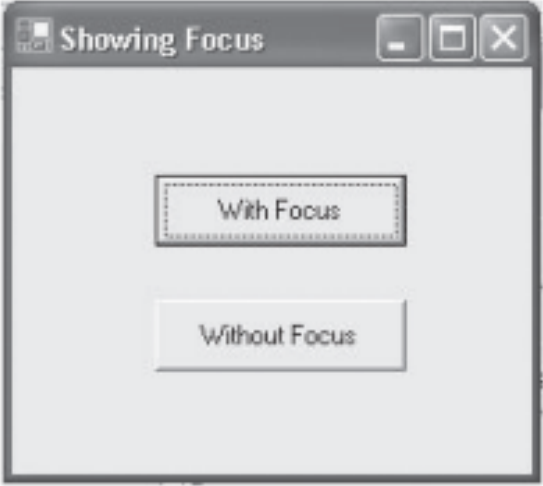
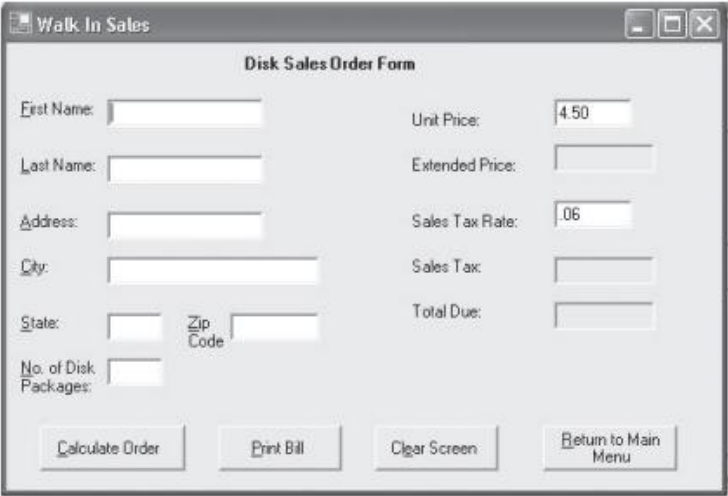
Software resources like VB v6, VB .Net or VB .Net 2003

Sub-Module 7: Adding Controls

Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
The learner; •	Simple program interface	•

		
<p>learners adds buttons and Textbox controls</p>	<ul style="list-style-type: none"> • Adding Buttons • Adding TextBox Control 	<p>Guide learners on how to add in a form buttons and Textbox controls</p>
	<ul style="list-style-type: none"> • Setting Initial Properties 	
<p>The learner, creates on the interface a button with and without Focus whereby a user;</p>	<ul style="list-style-type: none"> • Looking at the Focus and Tab Sequence 	<p>Guide learner on how to create a button with and without Focus.e</p>

<ul style="list-style-type: none"> • Clicks the object. • Presses the tab key until the object receives the focus. • The code activates the focus 		
<p>Designs a form with labels</p>	<ul style="list-style-type: none"> • Label Control (Form With Labels) 	<p>Guide learners on how to create a form with labels</p>
		
<ul style="list-style-type: none"> • Changes ForeColor and Back Color 	<ul style="list-style-type: none"> • Changing ForeColor and BackColor 	<ul style="list-style-type: none"> • Guide learner on how to change ForeColor and BackColor

Assessment Strategy

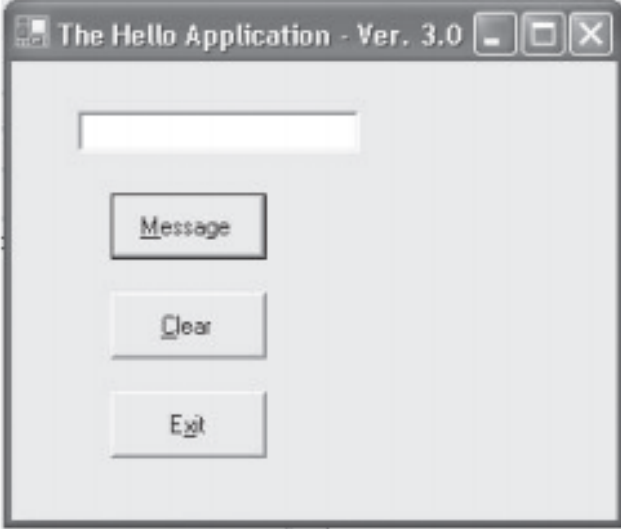
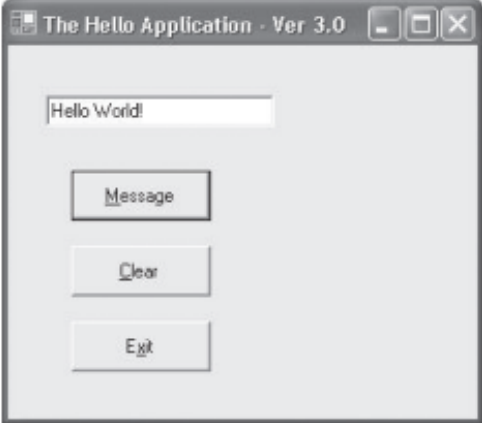
Give an exercise for the learner to;

- Determine how many event procedures are available for a Button control. (Hint: Activate the Code window for a form that has a Button control and count the available procedures.)

- b) Determine how many properties can be set for a text box control
- c) Create a text box named txtOne that has a red foreground color and a blue background color. The initial text displayed in the box should be Welcome to Visual Basic. (Hint: Use the ForeColor and BackColor properties—click on the ellipsis (...) to bring up the available colors.)

Sub-Module 8: Adding Additional Event Procedures

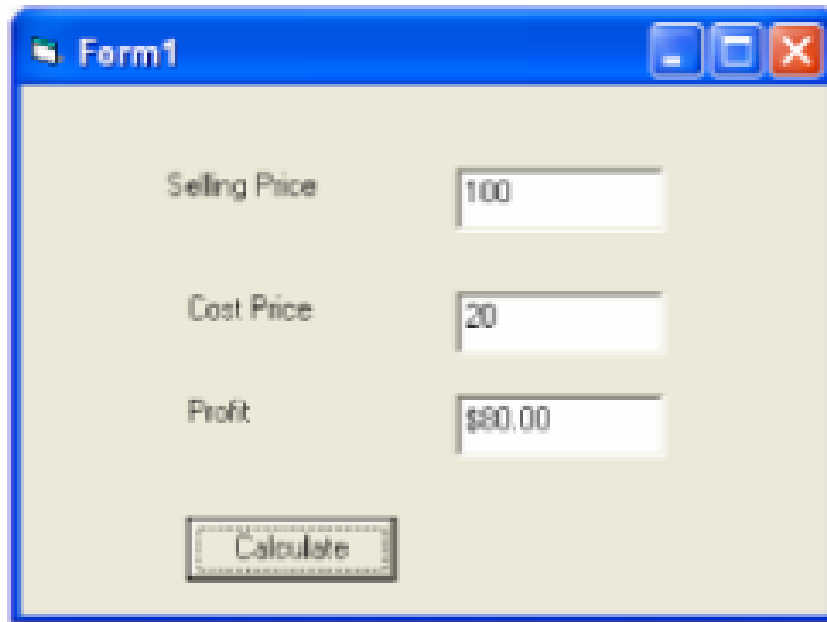
Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
<p>Adds a control that activates the message button upon clicking to display the word "Hello world"</p> <p>Clears the Text by clicking the Clear Button</p>	<p>Initial Run Time Window</p>  <p>The Run Time Window after the Message Button is Clicked</p> 	<p>Guide Learners on how to add the "Hello World" and activate the Clear Button to invoke the <code>btnClear_Click()</code> procedure</p>

Assessment Strategy

Task learners to;

Write a Program that Calculates the Profit



Resources

Software resources like VB v6, VB .Net or VB .Net 2003

References

- LiewVoonKiong 2006: Visual Basic 6 Made Easy: (A Complete Tutorial for Beginners)
Published by Booksurge, LLC, ISBN 1-4196-2895-X
- http://www.jblearning.com/samples/0763724785/CH02_BRONSON.pdf

NCIT222BASIC COMPUTER MAINTENANCE

Duration: 60 hours

MODULE OVERVIEW

This module introduces the Learner to the practical knowledge of Maintaining, troubleshooting, Repairing and Assembling computers.

Learning Outcome: the Learner should be able to Maintain the computer system, troubleshoot computer related errors and problems and to carryout computer repair.

Preparatory Assignment

Learners are given a task to disassemble a computer system and re-assemble it to its original state.

Result: Learners write the report on the process of disassembling and re-assembling a computer.

Sub-Module 1: Computer Maintenance

Duration: 6 Hours

Competence(s)	Content	Teaching Strategy
<ul style="list-style-type: none">• Carryout computer maintenance effectively• Use maintenance tools effectively.	<ul style="list-style-type: none">• Maintenance overview• Types; Safety, Preventive.• Hardware and Software maintenance• Safety and Preventive maintenance procedures• CRTs and LCD Monitor maintenance	<ul style="list-style-type: none">• Demonstrate to the learners how system maintenance is done.• Lead a guided discussion on types of system maintenance.

Assessment Strategy

Learners do assignment on how to carryout maintenance of different devices of a computer system.

Resources

Maintenance toolkit, Cleaning liquids, Dust blower.

Sub-Module 2: System Troubleshooting –

Duration 8 Hours

Competence(s)	Content	Teaching Strategy
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Identifies computer related errors	Errors and Problem detection techniques Computer Error codes and sounds	Illustrate to the learners the techniques of identifying computer errors using codes.
<ul style="list-style-type: none"> • Troubleshoot various computer errors and problems • Fix computer problems 	Troubleshooting; <ul style="list-style-type: none"> • Boot/startup errors. • Device errors. • Hardware and Software (Operating System) errors. • Connection and Display errors. • Power related problems. 	<ul style="list-style-type: none"> • Demonstrate to the learners troubleshooting techniques. • Illustrate to the learners on how to fix computer problems.
Fix boot/startup problems of a computer	Power On Self Test (POST)	Demonstrate to the learners on how to configure POST messages.

Assessment Strategy

Learners do assignment on error code identification. Learners should tell the error types. Assemble some faulty computers and give home work and task learners to carryout computer troubleshooting. Let them identify the POST errors and problems computers given.

Resources

Repair Toolkit, Working computers, Faulty computers

Sub-Module 3: System Repair –

Time: 20 Hours

Competence(s)	Content	Teaching Strategy
Repair and upgrade computers.	Tools and Requirements.	Display to the learners tools required to perform repairs.
Identify tools required for system repair.	Computer System Parts/Devices.	Perform Operating system installations and illustrate the steps involved.
Handle tools well	Operating System; Installations, Repair and Upgrade.	

Carryout both hardware and software installations	Hardware; Installation and Replacement. Software; Installation, Repair and Upgrade	Perform Software and Hardware installation while the learners are taking notes on the procedures.
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Assessment Strategy

Learners install operating system on a computer.

Learners to install software and hardware in a lab activity.

Resources

Toolkit, Operating System CDs/DVDs, Computers, CD/DVD drivers, Hard disk drives

Sub-Module 4: System Assembly –

Duration: 12 Hours

Competence(s)	Content	Teaching Strategy
Assemble a computer	System casing; Form factor, Dimensions, Desktop layout, Tower layout.	Show the learners different layouts of the system casing and demonstrate how to set screw holes.
Identify/Install motherboard	Motherboard; Types and Components, Form factors and Dimensions, Installation and Upgrade. Motherboard interface connectors Expansion slots	Display different types of motherboards and demonstrate how to install. Lead a guided discussion on form factors and motherboard components.
Install power supply	Power Supply Installation	Take learners through a step by step guide of installing a power supply.

Assessment Strategy

- Learners assemble a computer
- Learners practice to install and configure a motherboard.

Resources

Repair Toolkit, Motherboards, system casings, Power supplies.

Sub-Module 5: Secondary Storage Media

Duration : 6 Hours

Competence(s)	Content	Teaching Strategy
Use various storage media devices.	External Storage; installation, configuration, troubleshooting.	Show learners different external devices and demonstrate how to install any external storage device.
	Hard Disk Storage Flash Storage/Removable Storage; Formatting; Memory cards. Obsolete storage media.	Show learners Hard disk drives, flash discs and demonstrate how to format them. Lead a guided discussion on obsolete storage devices.
Writes data to CDs and DVDs	Optical Storage; Writing data to CDs/DVDs.	Demonstrate how to write CDs/DVDs. Lead a guided discussion on various Optical Storage devices.
Performs data backup	External storage data backup; methods, types.	Illustrate to the learners how to carryout data backup.

Assessment Strategy

- Task learners to configure an external storage media/device in a lab activity.
- Learners format a hard disk drive and explain how each step is performed.
- Task learners to write data in CDs/DVDs. They should explain the procedure followed.
- Task learners to carryout data backup to an external media.

Resources

- Hard Disks, Flash Disc, and Memory cards.
- CDs/DVDs, CD/DVD writer, Burning Software such as Nero etc.

- Back up drives.
- Overhead Projector

NCBS 220 **BASIC KISWAHILI**

Duration: 45 hours

Module Overview

This module introduces a learner to the basic Kiswahili used in the industry and by the general public to carry out daily business. It also enables a learner to carry out his/her profession in any part of East Africa where Kiswahili is the major language of communication.

Learning Outcome

By the end of the module the learner should be able to seek help in Kiswahili.

Sub-module 1: Introduction to Kiswahili

Duration: 2 Hours

Competences	Content	Teaching / Learning Strategies
The learner: Acknowledges the importance of learning and using Kiswahili language.	Origin and spread of Kiswahili Importance of Kiswahili to Ugandans and other East African countries	Take learners through the origin of Kiswahili in East Africa. Lead a discussion on the importance of Kiswahili to a learner of records management.

Assessment Strategy

Assess learners on the importance of learning Kiswahili in the context of a records and information officer.

Sub-module 2: Polite Language

Duration: 08 Hours

Competences	Content	Teaching/Learning Strategies
<p>A learner:</p> <ul style="list-style-type: none"> • Greets peers, and elders in Kiswahili language. • Names places and people in their capacities. • Appreciates others by saying 'thank you' and 'well-done' in Kiswahili. • Gives direction properly using compass direction. • Names people and their professions, titles in Kiswahili language. 	<ul style="list-style-type: none"> • Greetings to peers, age mates, parents, elderly and supervisors • Salutations at different times of the day • Appreciation and saying 'thank you' for work done, gifts, food and so on • Asking for directions, (compass direction) assistance and food and so on. • Names of places, like hotels, schools, hospitals, markets, garages, roads, airports, water wells, forests, villages, towns, sites, hills. • Names of people, professions and titles like technicians, nurses, messengers, watchmen, drivers, doctors, teachers, learners, chef, manager, foreman, pilot, journalist, counsellor, social worker, Accountant, ICT Technician 	<ul style="list-style-type: none"> • Lead a guided discussion on the correct use of Kiswahili in greeting peers, elders and supervisors. • Together with learners discuss on the use of 'thank you', 'welcome' and 'sorry' in Kiswahili and task learners to practice using Kiswahili in and outside the class. • Using illustrations, lead a guided discussion on giving directions such as move forward, north, left, east, south, west and right hand side in Kiswahili. • Guide learners on names of people, professions and titles Kiswahili language.

Assessment Strategy

Ask learners to:

- Greet peers, elders and supervisors.
- Direct people using compass direction.
- Name places and people in their capacities.

Teaching /Learning Resources

- The Internet
- Documentaries
- Charts
- Photographs/pictures

Sub-module 3: Comprehension

Duration: 06 Hours

Competences	Content	Teaching/ Learning Strategies
<p>A learner :</p> <p>Counts numbers 0 - 1000000 in Kiswahili.</p> <p>Sounds/pronounces Kiswahili vowels and consonants correctly.</p> <p>Identifies and names the external parts of a human body in Kiswahili language.</p> <p>Uses Kiswahili social habits well.</p> <p>Tells the external parts of a human body in Kiswahili correctly.</p>	<p>Kiswahili sounds and syllables.</p> <p>_vowels: a, e, i, o, u.</p> <p>_Consonants b, ch, d, dh, f, g, gh, h, j, k, l, m, n, ng, ny, p, r, s, sh, t, th, v, w, y, z.</p> <p>Formation of Kiswahili words by use of syllables eg ma-me-mi-mo-mu.</p> <p>Counting and numbers 0-9, 10- 1000000</p> <p>Kiswahili social habits like welcome, have a seat, thank you, wish you well, sorry</p> <p>External Parts of the human body like head, legs etc.</p>	<p>Illustrate on the vowels used in Kiswahili and lead a guided discussion on their application.</p> <p>Use illustrate to lead a guided discussion on the application of the consonants used in Kiswahili</p> <p>Guide learners to form Kiswahili words.</p> <p>Guide learners to count numbers in Kiswahili 0-1000000.</p> <p>Using role-play, let learners practice social habits.</p> <p>Illustrate the human body and lead a guided discussion on naming it.</p>

Assessment Strategy

- Task learners to write numbers in Kiswahili.
- Task learners to draw and name the external parts of a human body.

Teaching/Learning Resources

The internet
Kiswahili dictionary

Sub-module 4: General Vocabulary

Duration: 06 Hours

Competences	Content	Teaching/ Learning Strategies
<p>The learner:</p> <p>Names domestic animals, birds and insects in Kiswahili.</p> <p>Mentions days of the week, names the months of the year and tells correct dates.</p> <p>Identifies home and garden tools.</p>	<p>Names of domestic animals like goats, sheep, cows, pigs, rabbits, dogs, cats etc.</p> <p>Names of domestic birds like ducks, turkeys, hens, etc.</p> <p>Names of insects like mosquitoes, flies cockroaches</p> <p>Month in a year, days of the week, dates and telling time</p>	<p>Guide learners to discuss on the names of domestic animals, birds and insects in the environment.</p> <p>With the help of the calendar guide to name on the days of the week, months of the year and the dates of the months.</p> <p>Lead a guided discussion on</p>

	Names of objects like doors, window. Common usage of Kiswahili, home and garden tools	the common mistakes to be avoided in Kiswahili. Guide learners to identify and name the objects and tools in the environment.
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Assessment Strategy

- Ask learners to name domestic animals and birds in Kiswahili.
- Task learners to write days and months of the year systematically.
- Task learners to name home and garden tools in Kiswahili.

Teaching/Learning Resource

Kiswahili dictionary.
Internet.

Sub-module 5: Professional related Vocabulary

Duration: 06 Hours

Competences	Content	Teaching/ Learning Strategies
A learner : Identifies and names the tools, materials, and equipment used in different professions. Refers to officers in different professions by their titles. Describes the tasks performed by different officials.	Names of tools, materials, and equipment used in different professions . Titles of officers in different professions. Tasks performed by different officers.	Guide learners to identify and name the tools, materials, and equipment used in different professions. Ask learners to find out the Kiswahili titles of people who work in different professions. Discuss with learners the tasks performed by different officers.

Assessment Strategy

Assign a learner to write the titles and tasks performed by various officers.

Teaching/Learning Resource

The internet
Kiswahili dictionary

Sub-module 6: Spoken Fluency.

Duration : 10 Hours

Competences	Contents	Teaching/learning strategies
<p>The learner:</p> <p>Applies the right tenses in communication.</p> <p>Identifies the Kiswahili possessives and applies them correctly.</p> <p>Applies Kiswahili verbs and adverbs correctly.</p> <p>Uses interrogatives appropriately.</p> <p>Applies Kiswahili conjunctions correctly.</p> <p>Combines words to form good sentence patterns.</p> <p>Asks questions and respond to inquiries.</p>	<ul style="list-style-type: none"> • Kiswahili tenseseg na-ta-li-me-hu-ku. • Possessives (-angu, -ake, etu, -ao, -enu and -ako) • Pronouns egmimi, wewe, yeye, etc. in both singular and plural. • Verbs (African, foreign, monosyllabic, passive etc) • Adverbs. (how, when and where). • Interrogatives (nani, gani, lini, kwanini, ngapi, wapi, niniyupi Tangulini, Kwasababugani etc.) • Conjunctionseg, Kwahiyo/hivyo, Na, Kama, Lakini, Ingawa, Au/Ama, Kwasababu, Kwamba. • Sentence pattern • Negative and Positive sentences. • Plural and singular sentences. • Questions and responses • Making requests • Expressing likes and dislikes 	<ul style="list-style-type: none"> • Let learners brainstorm on the use of nouns in different noun classes. • Guide the learners on how to use different tenses. • Guide learners on the application of Kiswahili verbs. • Group learners to role-play the questions and answer, requests and response tasks. • Guide learners to construct simple Kiswahili sentences. • Let learners express their likes and dislikes in Kiswahili.

Assessment strategies

- Assess learners on the construction of sentences.
- Let learners ask each other questions and provide responses.
- Task learners to make speeches involving expression of likes/appreciation and dislikes / rejection.

Teaching/Learning Resources.

Kiswahili dictionary,/Internet.

Sub-module 7: Customer Care and Language

Duration: 07 Hours

Competences	Content	Teaching/ Strategies	Learning
<p>A learner :</p> <p>Expresses yourself confidently in public.</p> <p>Welcomes, offers to assist, and appreciates the assistance provided by others.</p> <p>Advertises the products in Kiswahili.</p> <p>Negotiates for better business terms.</p> <p>Fills forms in Kiswahili.</p>	<p>Public expression (welcoming, asking, requesting thanking ,apologising.)</p> <p>Persuasive language</p> <p>Advertising of products</p> <p>Negotiating for better terms.</p> <p>Filling forms (birth certificate forms, school admission forms, Hospital forms, employment application forms, career forms,questionnaire/assessment.)</p>	<p>Set up a conversation requiring learners to welcome, ask, and appreciate people in Kiswahili language.</p> <p>Let learners design adverts in a persuasive language.</p> <p>Guide learners how to negotiate politely in Kiswahili language.</p> <p>Guide learners how to fill different forms in Kiswahili language.</p>	

Assessment Strategy

Task learners to write and format a Kiswahili advert for any business.

Teaching/Learning Resources

The internet.

Kiswahili dictionary.

NCIT223REAL LIFE PROJECT

Duration: 75 contact Hours

Module Overview

This module enables the learner to demonstrate a summation of all the skills learn in the entire time of study. The learner manages a computer workshop and improves on the website that was started in the previous semester.

Learning Outcome

By the end of this module the learner should be have demonstrated ability to troubleshoot computer hardware issues

Presents a polished static website for assessment

Preparatory Assignment

Ask learners to choose a task to act as their project

Result

Learners come up with their respective choices of projects

Competences	Content	Teaching/Learning Strategies
The learner: <ul style="list-style-type: none">• Repairs and maintains computers• Typesets documents• Sets up and manages a software or stationary kiosk• Installs software• Prints and photocopies documents• Mobilises more funds for the business.	<ul style="list-style-type: none">• Identification of new customers to the business• Utilisation of the available to add value to products.• Mobilisation of funds for the business	<ul style="list-style-type: none">• Lead a guided discussion on how to identify potential customers• Guide learners on how to utilize the available resources to add value to their products.• Guide a discussion on how to mobilise more funds for the business• Guide the learner on various ways of evaluating a business
Sample Projects <ul style="list-style-type: none">• Creating three small programs using Visual Basic Application• Starts and Manages a small scale computer repair workshop• The learner improves and Completes website development by adding web pages such as (Home page, Programs/services offered, Contact Us, About Us and Gallery)• Develop a New Website for an institution of Training or a hotel showing (Home page, Programs/services offered, Contact Us, About Us and Gallery)		

NCIT224 INDUSTRIAL TRAINING

Duration: 180 hours (6 weeks)

Module Overview

This module provides an opportunity to the learner in matching the knowledge and skills acquired in at the institution of training and place of employment

Learning Outcome

Ability to apply ICT solutions when solving end-user need

Competences	Content	Teaching/learning strategies
The learner: Demonstrates ability to use a computer to solve general user needs	<ul style="list-style-type: none">• Using MS office Applications to input and printout information• Retouch photos using graphic application• Applying safety measures when handling ICT equipment• Demonstrating effective communication skills• Designing Website• Coding simple programs	. Use the Industrial Training Guidelines

Assessment Strategy

- Field supervisors scores the candidate according to the attached Industrial Training Guidelines
- Academic supervisor visits the Trainee in the Field to observe the Trainee performance, also interviews the Field supervisor about the Trainees performance

Resources

- Telephone contact/address of the Trainees and Place of industrial training
- Assessment Forms/log books
- Transport facilitation to the field

APPENDIX I: Industrial Training Guidelines

The guidelines below should be followed during Industrial Training:

- 1) It starts at the end of the academic year.
- 2) It takes a minimum period of 6 weeks.
- 3) It is carried out at the world of work located in any part of Uganda including the training Institutions.
- 4) The training Institution has the duty of:
 - 5) Budgeting for Industrial Training.
 - 6) Obtaining money from government for government sponsored learners.
 - 7) Explaining to the learners what they are expected to do.
 - 8) Finding placements for Industrial Training.
 - 9) Posting learners to Industrial Training.
 - 10) Supervising and assessing learners during Industrial Training.

Supervision

There should be a world of work or field or industry supervisor and an academic supervisor from the training institution.

The academic supervisor visits the attachment site or industry at least once, and interacts with both the learner and field supervisor.

Assessment

Assessment marks should be categorised as follows:

Assessment by field supervisor	50%
Assessment by academic supervisor	30%
Field attachment report	20%

All the above assessment categories must be carried out for one to complete Industrial Training. The marks awarded by each category must be verified by UBTEB.

APPENDIX II: Industrial Training Assessment Form for Field or Onsite Supervisor

Name of Institution
Name of Industry.....
Name of student
Signature Date.....

Registration Number

Name of supervisor

Signature Date.....

	Area of Assessment	Marks	Score	Area of Improvement
1	Attendance (% age of days and times within the days present)	5		
2	Work Performance Involvement	30		
	Co-operation with other staff	5		
	General ability to use various equipment, machines or plant in the industry	10		
	Flexibility-willingness to learn from various sections in industry	7		
	Job planning	8		
3	Initiative and Innovations	15		
	Problem-solving	8		
	New ideas on improvement for efficiency of performance or operations	7		
4	Time Management	5		
	Reporting on time	1		
	Leaving at specified break-off or stoppage time	1		
	Meeting deadlines on assignments given by supervisors or instructors	3		
5	Discipline and Safety Observation	15		
	Use of right equipment for right job	4		
	Obeying instructions	4		
	Proper handling of equipment and or materials	2		

	Ability to practice safety measures in the workplace	3		
	Knowledge of first aid procedures in case of accident	2		
6	Practical Skills	20		
	Ability to put into practice training instructions from instructors or supervisors	4		
	Ability to relate theoretical knowledge with practical applications	4		
	Proper use of manuals and interpretation of drawings	4		
	Ability to carry out troubleshooting on equipment, (put right mistake in work or finishing)	4		
	Ability to service and repair equipment (clean and maintain tools and workplace)	4		
G	General Remarks (other assessment at discretion of assessor)	5		

The assessment shall be carried out as indicated in each area and then the total mark obtained is computed to 50%.

Signature

Field Supervisor

APPENDIX III: Industrial Training Assessment Form for Academic Supervisor

Name of Institution				
Name of Industry.....				
Name of student				
Signature				
Registration Number				
Name of supervisor				
Signature				
	Area of Assessment	Marks	Score	Area of Improvement
1	Attendance (Was the learner at his work place?)	5		
2	Understanding of tasks	21		
	Did the learner provide weekly summary of work performed?	2		
	How did the learner describe the tasks performed?	4		
	How was the learner able to explain why tasks were being done in a particular way?	3		
	How did the learner explain problems experienced when carrying out the work and how they were solved?	3		
	How did the learner explain the knowledge and skills acquired at the institute that	2		

	enabled him to perform?			
	How did the learner describe the new knowledge and skills gained?	3		
	How did the learner explain his relationship with his co-workers and supervisors and how he plans to improve or maintain it?	2		
	How did the learner relate the Industrial Training tasks to his training as a technician?	2		
3	General Remarks (Other assessment at discretion of examiner)	4		
Total mark		30		

The assessment shall be carried out as indicated in each area and then the total mark obtained is computed to 30%.

APPENDIX IV: Field Attachment Report and Guide for Industrial Training

The report should be written in English and contain the following to be assessed as shown:

No	Contents	Maximum Score
1	Cover page: Name of Institution Name of Department Name of learner and year of study Place of Industrial Training Period of Industrial Training e.g. July- September 1510 Academic and Field Supervisor's signatures	1 mark
2	Acknowledgements Acknowledge all assistance during field training Acknowledge assistance during report writing	0.5 marks
3	Executive summary or abstract To include statement of the most practical work carried out	2 marks

	Challenges Conclusions	
4	Table of contents To show the content of the report and page numbers where they first occur	0.5 marks
5	List of figures All figures in the report must have a number and a caption Figures must be numbered according to the chapters where they occur for example; Figure 4.1, to refer to first Figure in chapter 4 The pages where the figures occur must be shown in the list of figures	0.5 marks
6	List of tables All tables in the report must have a number and a header Tables must be numbered according to the chapters where they occur for example; Table 2.1, to refer to first table in Chapter 2 The pages where the tables occur must be shown in the list of tables	0.5 marks
7	List of acronyms or abbreviations Acronyms used should be given in alphabetical order with their full meaning shown	0.5 marks
8	Introduction Location and description of place of field attachment Objectives of field attachment Structure, organisation Tasks carried out by the place attached to e.g. if District Local Government describe its role in society	2 Marks
9	Main body of the report Description of work carried out Duties and responsibilities assigned and how they were carried out New knowledge and skills gained Relationship with other staff and supervisor Problems experienced and how they were handled	8 marks
10	Conclusions A brief summary of knowledge gained as outlined in the objectives	1mark
11	Recommendations For improving Industrial Training, usually derived from problems experienced	1.5 marks

	For improvement of work output at the place of work (this is included if allowed by the field supervisor)	
12	References Design standards and guidelines used during training Books and internet material Harvard style of referencing must be used for example Kyalikisa R (1510), "Effect of window net on the reduction of Malaria," Journal Health Construction, Vol 17, Pg 123-127	1 mark
13	Appendices Drawings Photographs, etc	1 mark
Total mark		20 marks