NATIONAL BOARD FOR TECHNICAL EDUCATION

NATIONAL INNOVATION DIPLOMA (NID)

IN

COMPUTER SOFTWARE ENGINEERING

CURRICULUM AND COURSE SPECIFICATIONS

2007

Produced by the National Board for Technical Education (NBTE)
Plot B, Bida Road, P.M.B. 2239, Kaduna Nigeria.

FORWARD

INTRODUCTION

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GENERAL INFORMATION

1.0 PROGRAMME GOAL

The National Innovation Diploma programme is designed to produce skilled software technicians who should be able to solve a wide range of problems by the systematic development and evaluation of large, high quality software systems.

1.1 OBJECTIVE OF THE PROGRAMME

A product of NID in Computer Software Engineering should be able to:

i. Develop and maintain software
ii. Detect technical faults in a Computer installation
iii. Design and test software to optimise its production and support
iv. Design and run efficient programmes in a wide spectrum of fields, and in various languages
v. Install a computer system
vi. Produce large, high quality software systems
vii. Advise on the installation of Computer facilities
viii. Carry out routine (preventive) maintenance of Computer facilities
ix. Work with a team on a project
x. Become an employer of labour in a self-owned enterprise.

2.0 ENTRY REQUIREMENTS

2.1 NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING

The entry requirements into National Innovation Diploma in Computer Software Engineering programme include any of the following:-

a) Five (5) credit level passes in GCE "O" level or Senior Secondary School Certificate (SSCE) at not more than two sittings. The five subjects must include Mathematics, Physics, Chemistry, English language and any other subject.

b) National Vocational Certificate (NVC, Final) in Computer Studies from an approved Vocational Enterprise Institution (VEI).

3.0 CURRICULUM

3.1 The curriculum of NID in Computer Software Engineering programme consists of four main components. These are:-

I. General courses
II. Foundation courses
III. Professional/Core courses
IV. **Supervised Industrial Attachment**.

3.2 **The General Studies** component shall include courses in
English Language and Communication

Entrepreneurship

3.3 **Foundation Courses** include courses in
Mathematics and Statistics

3.4 **Professional Courses** are courses, which give the student the theory and practical skills he needs to practice his field of calling at the technical/technologists level.

3.5 **Student Industrial Attachment** shall be taken during the long vacation following the end of the second semester of the first year.

4.0 CURRICULUM STRUCTURE

4.1 NID in Computer Software Engineering programme

The structure of the programme is made up of four semesters of classroom, laboratory, workshop and practical activities in the institution – and a period at least 3 months of supervised industrial attachment. Each semester shall have 17 weeks duration made up as follows:-
15 contact weeks of learning and practical applications
2 weeks for examinations and registration.

NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING

CURRICULUM TABLE

YEAR I SEMESTER I

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	Prerequisite
CSE 101	Computers Systems	1	0	2	3	3	
CSE 111	Introduction to Programming	2	0	2	4	4	
CSE 121	Basic Digital Systems	1	0	3	4	4	
CSE 131	Internet and World Wide Web	1	0	3	4	4	
CSE 141	Computer Application Packages 1	1	0	4	5	5	
CSE 151	File Organization and Management	1	0	2	3	3	
MTH 101	Logic and Linear Algebra	2	1	0	3	3	
STT 101	Introduction to Statistics	2	0	0	2	2	
GNS 101	English Language and Communication I	2	0	0	2	2	
TOTAL		**13**	**1**	**16**	**30**	**30**	

YEAR I SEMESTER II

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	Prerequisite
CSE 102	Data Structures and Algorithm	1	0	1	2	2	
CSE 112	PC Upgrade and Maintenance	1	0	3	4	4	
CSE 122	Computer System Troubleshooting	1	0	3	4	4	
CSE 132	Computer and Society	2	0	1	3	3	
CSE 142	Basic Hardware Maintenance	1	0	3	4	4	
CSE 152	System Analysis and Design	1	0	2	3	3	
CSE 162	Students Industrial Attachment	0	0	4	4	4	
MTH 102	Calculus	2	1	0	3	3	
GNS 111	English Language and Communication II	1	1	0	2	2	GNS 101
TOTAL		**9**	**2**	**17**	**29**	**29**	

KEY

L: **Lecture**
T: **Tutorial**
P: **Practical**
CU: **Credit Unit**
CH: **Contact Hour (per week)**

NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING

CURRICULUM TABLE

YEAR II SEMESTER I

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	Prerequisite
CSE 201	Programming Concepts	1	0	3	4	4	
CSE 211	Computer Programming using VB.NET	1	0	3	4	4	
CSE 221	System Programming Concept (C, C++)	1	0	4	5	5	
CSE 231	Computer Application Packages II	1	0	4	5	5	
CSE 241	Structured Query Language I	1	0	4	5	5	
CSE 251	Relational Data Base Management Systems (RDBMS) I	1	0	4	5	5	
ENT 201	Entrepreneurship Development	1	0	1	2	2	
TOTAL		**7**	**0**	**23**	**30**	**30**	

YEAR II SEMESTER II

COURSE CODE	COURSE TITLE	L	T	P	CU	CH	Prerequisite
CSE 202	Scientific Programming Language using Object Oriented JAVA	1	0	4	5	5	
CSE 212	Management Information System	1	0	3	4	4	
CSE 222	Structured Query Language II	1	0	3	4	4	SEN 241
CSE 232	Relational Data Base Management Systems (RDBMS) II	1	0	3	4	4	SEN 251
CSE 242	Software Project Management	1	0	3	4	4	
CSE 252	Project	0	0	4	4	4	
TOTAL		**5**	**0**	**20**	**25**	**25**	

KEY

L: **Lecture**
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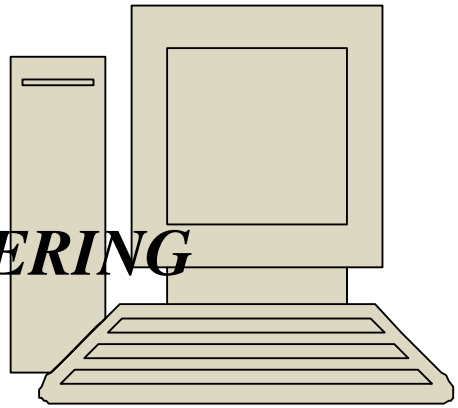
NATIONAL INNOVATION DIPLOMA (NID)

IN

COMPUTER SOFTWARE ENGINEERING



FIRST YEAR COURSES, FIRST SEMESTER

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
***COURSE*: COMPUTERS SYSTEMS**				***COURSE CODE*: CSE 101**	***CONTACT HOURS*: 1 – 0 – 2**	
***GOAL*: TO INTRODUCE THE COMPUTER TO THE STUDENT**						
COURSE SPECIFICATION: THEORETICAL CONTENT				***PRACTICAL CONTENT***		
GENERAL OBJECTIVE 1: **UNDERSTAND THE HISTORY, CLASSIFICATION AND IMPACT OF COMPUTERS.**						
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Learning Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Learning Resources**
1	1.1 Define the computer 1.2 Describe the development of computers, in particular abacus, Pascal, Babbage, Hollerith and ENIAC. 1.3 Classify computers according to generations from 1st – 5th generation (any subsequent generation)	Define computer Trace the history of computer. Classify the computer according to generations	White Board. PC loaded with Power point and connected to Over Head Projector (OHP)	• Classify computer systems.	Guide students to classify computer systems	Networked PCs loaded with software packages.
2	1.4 Distinguish between analogue, digital, and hybrid computers 1.5 Explain the social implication of computers on society in particular privacies and quality of life. 1.6 List the benefits of computers to the society.	Distinguish between types and classes of computers. Highlight the implications of computers to the society. Outline the benefit of computer to the society.	White Board. PC loaded with Power point and connected to OHP	• Differentiate between different types of computers	Guide students to classify computer systems	Networked PCs loaded with software packages.
Week	***GENERAL OBJECTIVE 2*: KNOW THE CONCEPT OF COMPUTER HARDWARE**					
3	2.1 Describe computer hardware configuration. 2.2 List some input and output devices 2.3 Describe the function of the input and out-put devices.	Discuss the meaning of hardware. Discuss the various components and functions of various hardware units. Discuss computer	White Board. PC loaded with Power point and connected to OHP	• Identify the various components of a computer system	Guide the students on how to identify the various components of a computer system	A DEMO PC showing its components

		software programming languages and differentiate between the levels.				
4	2.4 Describe the function of Central Processing Unit (CPU) 2.5 List some auxiliary Units. 2.6 Describe the function of the auxiliary memory 2.7 Define bits, byte, nibble, and word and storage size.	Discuss the various components and functions of various hardware units. Discuss computer software programming languages and differentiate between the levels.	White Board. PC loaded with Power point and connected to OHP	• Identify the various components of a computer system	Guide the students on how to identify the various components of a computer system	A DEMO PC showing its components
Week	***GENERAL OBJECTIVE 3:*** **KNOW THE CONCEPT OF COMPUTER SOFTWARE.**					
5	3.1 Explain software and its various types 3.2 Distinguish between the low-level and high–level languages. 3.3 Explain source and object programmes.	Discuss software and its various types. Explain computer packages and its various types.	White Board. PC loaded with Power point and connected to OHP	• Load computer packages on computer system	Demonstrate how to load various computer packages on computer systems	Networked PCs loaded with different computer packages
6	3.4 Define a translator. 3.5 Explain types of translators: assembler, compiler, and interpreter. 3.6 Explain the use of package programs.	Discuss software and its various types. Explain computer packages and its various types.	White Board. PC loaded with Power point and connected to OHP	• Load computer packages on computer system	Demonstrate how to load various computer packages on computer systems	Networked PCs loaded with different computer packages
Week	***GENERAL OBJECTIVE 4*****: UNDERSTAND COMPUTER DATA PROCESSING SYSTEMS.**					
7	4.1 Explain different processing modes.	Explain offline and online concepts Define batch processing,	White Board. PC loaded with Power point and	• Recognize life problems requiring the application of the various modes	Guide the students on how to identify real life problems requiring the various	Networked PCs loaded with different computer packages

		real time, time sharing and distributed processing Differentiate between batch processing, real time processing, time-sharing and distributed processing system.	connected to OHP		data processing techniques	
Week	***GENERAL OBJECTIVE 5:*** **KNOW THE PROCEDURES FOR COMPUTER AND DATA PREPARATION METHOD.**					
8	5.1 Explain how to operate a computer system	Discuss the principles and procedures of operating the computer system, booting and shut down systems	White Board. PC loaded with Power point and connected to OHP Diskettes	• Boot and shut down computer system • Format diskettes	Guide the students on how to operate the computer. Show different storage media to students	Networked PCs and storage media such as diskette.
9	5.2 Explain the initialization and formatting of storage media.	Discuss initialization and formatting of storage devices such as disks and diskettes	White Board. PC loaded with Power point and connected to OHP Diskettes	• Boot and shut down computer system • Format diskettes, flash disks and other temporal storage devices	Guide the students on how to operate the computer. Show different storage media to students	Networked PCs and storage media such as diskette.
Week	***GENERAL OBJECTIVE 6*****: UNDERSTAND SECURITY AND SAFETY PROCEDURES WITHIN A COMPUTER ENVIRONMENT.**					
10	6.1 Describe data control techniques, and operating procedure of a computer installation. 6.2 Explain safety regulations in computer installations. 6.3 State methods of preventing hazards such as fire, flooding and sabotage	Explain data control techniques. Describe standard operating procedures of a computer installation. Explain the need for computer room security. Explain computer system auditing	White Board PC loaded with relevant software packages and connected to OHP	• Formulate passwords.	Guide students on how to formulate simple password that they could easily remember	Networked PCs and storage media such as diskette.

		Explain methods of preventing hazards fire, flooding sabotage etc.				
11	6.2 Explain security methods in computer installation and the need for users passwords	Describe file security methods in computer installations. Explain the need for file security in computer installation. Explain the user passwords and user name.	White Board PC loaded with relevant software packages and connected to OHP	• Formulate and apply passwords.	Guide students on how to formulate simple password that they could easily remember	Networked PCs and storage media such as diskette.
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND THE CONCEPT OF A COMPUTER NETWORK**					
12	7.1 Explain network concept. 7.2 Describe different types of network organization such as star, ring and bus.	Define computer network. Explain different types of network organization such as star, ring, bus etc.	White Board PC loaded with power point and connected to OHP	• Identify various computer topologies • Identify different organizations using the different topologies.	Guide the students on how to identify various network topologies.	Networked PCs and storage media such as diskette.
13	7.3 Explain LAN and WAN.	Describe different types of network: LAN, WAN	White Board PC loaded with power point and connected to OHP	• Identify various computer topologies • Identify different organizations using the different topologies.	Guide the students on how to identify various network topologies.	Networked PCs and storage media such as diskette.
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND THE USE OF THE INTERNET**					
14	8.1 Explain internet resources 8.2 Explain the processes involved in searching the internet for materials.	Define internet Describe resources of internet Explain the processes involved in browsing and searching the internet.	White Board. PC loaded with power point and internet browser and connected to OHP	• Surf the Internet • Search for materials on the internet.	Guide students on how to search for materials on the internet.	Networked PCs connected to the internet.

		Explain the meaning of Internet Service Provider (ISP).				
15	8.3 Explain the concept of E-mail	Explain the concept of e-mail address. Describe the processes of acquiring an e-mail address. Describe the process of sending and receiving an e-mail.	White Board. PC loaded with power point and internet browser and connected to OHP	• Compose and send E-mail messages .	Demonstrate how to compose and send E-mail.	Networked PCs connected to the internet.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 101)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	20
Practical	At least 5 home works to be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR: WILLIAMS, SAWYER, HUTCHINSON
PUBLISHER: IRWIN MCGRAW-HILL

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **INTRODUCTION TO PROGRAMMING**				***COURSE CODE:*** **CSE 111**	***CONTACT HOURS:*** **2 – 0 – 2**	
GOAL: **TO ACQUAINT STUDENTS WITH THE BASIC PRINCIPLES OF PROGRAMMING**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	***GENERAL OBJECTIVE 1*: UNDERSTAND THE HISTORY, CLASSIFICATION AND IMPACT OF COMPUTERS.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define a program 1.2 Explain features of good program (Accuracy, maintenance, efficiency, reliability, etc).	Define and explain program with concrete illustration. Explain in details the various feature of a good program.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• View some programming languages in computer	To assist student view some programming languages in computer	. PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL OO-Pascal in a networke laboratory
Week	***GENERAL OBJECTIVE 2*: UNDERSTAND THE CONCEPT OF ALGORITHMS AND FLOWCHARTING**					
2 – 4	2.1 Define algorithm on a general basic. 2.2 Explain features of an algorithms (e.g. please, effective, finite) 2.3 Describe the methods of algorithm representation of English language, flowchart, pseudo code, decision table, data flow diagram (DFO) etc. 2.4 Describe main ANSI flowcharts as describe algorithms. 2.5 Draw flowcharts to implement some simple programming tasks	Describe the concept of algorithm with its features. Give concrete examples algorithms. Teach the various methods of oppressing algorithm with examples.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Draw flowcharts for simple programming problems.	To assist students in drawing flowcharts for simple programming problems.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 3*: UNDERSTAND THE PRINCIPLES OF DESIGNING ALGORITHMS FOR COMMON PROGRAMMING PROBLEM**					
5 – 6	3.1 Design algorithm for problems involving. 3.2 Explain strict sequence control structure	Show the Structure and how to develop simple programming problem involving each of basic control structure.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-	• Write simple programs using different control structure	To assist student in writing simple programs using different control structure	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-

	3.3 Explain selection control structure 3.4 Explain Iteration control structure	Give class Exercise, assignments to strict to practice on. Correct the algorithm developed by the students.	COBOL, OO-Pascal and connected to OHP.			COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND GENERAL MODULAR PROGRAM DESIGN PRINCIPLES.**					
7 – 8	4.1 Explain modular programming concept. 4.2 Explain top-down design technique. 4.3 Illustrate program design with program structure charts, hierarchical Network, Hierarchical. 4.4 Demonstrate each of the 4.1 – 4.3 above.	Discuss the concept and advantage of modular programming Discuss and illustrate with like programs e.g. payroll, student records, etc. Top-down design principles.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Design a program using top-down technique	To assist student to design a program using top-down technique	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE PROCEDURE IN SOLVING A PROGRAMMING PROBLEMS**					
9	5.1 Identify the problem and confirm it solvable. 5.2 Design algorithm for the chosen method of solution with flowcharts or pseudo codes. 5.3 Code the algorithm by using a suitable programming language. 5.4 Test-run the program on the computer.	Discuss the stages involved in developing program. Demonstrate the stages above with real life program possible.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Code a simple algorithm using any suitable language.	To assist student in coding a simple algorithm using any suitable language.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 6:*** **UNDERSTAND THE VARIOUS LEVELS OF PROGRAMMING LANGUAGES**					
10 – 11	6.1 Explain machine language, low-level language and High level languages	Discuss the feature of machine language, low level language, and high level language.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO	• Code a very simple high level language and translate it to assembly language.	To assist student code a very simple high level language and translate it to	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO

	6.2 State examples of the languages stated above. 6.3 Explain the distinguishing features of languages in 6.1 above. 6.4 Distinguish between system comments and program statements.	High light the advantages and disadvantage of level of programming layout	languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.		assembly language.	languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND THE CONCEPT OF DEBUGGING AND MAINTAINING PROGRAM:**					
12	7.1 Define debugging. 7.2 Identify sources of bugs in a program 7.3 Explain syntax, run-time and logical errors. 7.4 Identify techniques of locating bugs in a program 7.5 Explain program maintenance. 7.6 Distinguish between debugging and maintaining a program	Discuss various methods of debugging, aids. High light classes Differentiate between debugging and maintenance. Discuss sources of bugs in program	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Create a simple bug in a simple program and correct it	Assist student create a simple bug in a simple program and correct it	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages such as VB, OO-COBOL, OO-Pascal in a networked laboratory
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND GOOD PROGRAMMING PRACTICES**					
13 – 14	8.1 Employ structured approach to both flowcharting and program development. 8.2 Employ program documents technique HIPS, data flow diagram, pseudo-cal. 8.3 Explain graphic user interface, GUI. 8.4 Define interactive processing.	Discuss structured approach to flowcharting and programming.	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Write simple structured program	To assist student write simple structured program	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory

Week	*GENERAL OBJECTIVE 9:* **UNDERSTAND THE CONCEPT OF OBJECT ORIENTED PROGRAMMING.**					
15	9.1 Explain the concept of OO programming. 9.2 Describe the features of OO programming. 9.3 Describe the concept of properties, events, objects and classes.	Explain object oriented (00) program. State the features of OOP Explain the concept of properties Know the obstacles to internet growth in Nigeria. Discuss writes, methods, events, objects and classes. List various objects oriented programming languages State The advantages of OOP	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal and connected to OHP.	• Identify properties, events, objects and class in a running OOP	To assist students identify properties, events, objects and class in a running OOP	PC loaded with traditional languages such as Basic, Cobol, Fortran etc and OO languages Such as VB, OO-COBOL, OO-Pascal in a networked laboratory

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 111)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	20
Practical / Projects	To be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: INTRODUCTION TO JAVA PROGRAMMING: FUNDAMENTALS FIRST, 6TH EDITION.
AUTHOR: DANIEL ARMSTRONG
PUBLISHER: PRENTICE HALL

TITLE: SYSTEM SOFTWARE: AN INTRODUCTION TO SYSTEMS PROGRAMMING
AUTHOR/PUBLISHER: EJAME STROUSTRUP/ADDISON WESLEY.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **BASIC DIGITAL SYSTEMS**				***COURSE CODE:*** **CSE 121**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO ENABLE STUDENTS ACQUIRE A BASIC KNOWLEDGE OF COMPUTERS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND NUMBER SYSTEMS AND CODING**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 3	1.1 Describe the binary, octal, decimal and hexadecimal number system. 1.2 Convert from one number system to another e.g. decimal to binary. 1.3 Define a code. 1.4 Explain the conversion from one code to another. 1.5 Describe the BCD code, excess-three code and 2+421 codes. 1.6 Describe the conversion from one code to another e.g. from BCD to excess-three code. 1.7 Describe the seven-segment display code.	Explain flowcharts and show how flowchart can help in solving problems. Describe the code, BCD was excess three code and 2x421 codes. Describe conversion from one code to another. Describe the seven-segment. Display code.	PC connected to an OHP projector. Power point presentation of lecture notes. Online lecture notes. White board.	• Develop formulas using Excel spread sheet to convert Binary numbers, into other number systems. • Convert from one code to another.	Assist student in their practical work.	Networked PC lab, with MS office professional .
Week	***GENERAL OBJECTIVE 2:*** **KNOW THE FUNDAMENTAL OF BOOLEAN ALGEBRA**					
4 – 7	2.1 Sate the Boolean postulates • The commutative law • Associative law • Distributive law • Identify law 2.2 State the following • Negation Law • Redundancy law	State, explain and relate the Boolean postulate request the student to list examples of Boolean postulates application. Design a truth table for up to 4 variables. Design logic expression	PC connected to an OHP projector. Power point presentation of lecture notes. Online lecture notes.	• Design and implement Boolean logical equations.	Assist student in their practical work	Networked PC lab, with MS office professional Logic Simulator packages such as Electronic work Bench, or Digital work.

	2.3 State De Morgan's theorem. 2.4 Construct a truth table for up to 4 variables. 2.5 Form logic expression from statements of conditions. 2.6 Minimize a logic expression algebraically. 2.7 Explain a karnaugh map (K.Map) 2.8 Construct a .K –Map for 2, 3, 4 variable. 2.9 Minimize a logic expression using a k-map	from statements of condition. Using the stated Boolean postulate explain the steps in minimizing a logic expression algebraically, there after, demonstrate the action. Define and discuss the karnaugh map. Progressively design a karnaugh map for 2 variable, 3 and 4 variables and explain each step. Use the principles in K-Map and minimize logic expression.	White board.			
Week	***GENERAL OBJECTIVE 3:*** **KNOW THE IMPLEMENTATION OF THE ADDITION OPERATION IN THE COMPUTER.**					
8	3.1 Design of an adder hardware.	To explain: The design of Half Adder. The design of Full Adder. The serial adder The parallel adder	PC connected to an OHP projector. Power point presentation of lecture notes. Online lecture notes. White board.	• Implement various adders, hardware. (Half and Full adder)	Assist student in their practical work	Networked PC lab, with MS office professional Logic Simulator packages such as Electronic work Bench, or Digital work.
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND SMALL–SCALE INTEGRATED CIRCUIT**					
9 – 11	4.1 List the various terminologies used to characterise integrated circuits e.g. fan-out, fan –in threshold, heat dissipation, noise margin etc.	The teacher should: Explain the various terminologies used to characterize integrated circuits.	PC connected to an OHP projector. Power point presentation of lecture notes.	• Note the characteristics of various logical gates. • Identify technological advances in	Assist student in their practical work	Networked PC lab, with MS office professional Logic Simulator packages such as

	4.2 Explain pin connections/arrangement of ICS. 4.3 Explain the technology of TTC. 4.4 Explain all the characteristics of DTL, ECL technologies. 4.5 Explain pulse and pulse shaping.	Describe some pin arrangement of ICS (Dual in-line, straight-line and circular) and apply same to solve given problem. Draw, explain and construct electronic circuits using DTL. Explain the Limitation of DTL gates. Explain and demonstrate the applications of the up and down-followers. Draw and construct the electronic circuits of logic expressions using DTL. Draw and explain the structure of TTL, ECL, EEL and then construct the electronic circuit.	Online lecture notes. White board.	manufacturing gates.		Electronic work Bench, or Digital work.
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE CONCEPT AND METHODOLOGY OF SEQUENTIAL CIRCUIT DESIGN.**					
12	5.1 Describe the design and operations of various bi-stables. 5.2 Explain digital pulse and methods of pulse shaping	The teacher to: Explain the design of operations of R.S., D-Type, J-K. Explain the digital pulse and shaping.	PC connected to an OHP projector. Power point presentation of lecture notes. Online lecture notes. White board.	• Implement Bi-stable circuits	Assist student in their practical work	Networked PC lab, with MS office professional Logic Simulator packages such as Electronic work Bench, or Digital work.

Week	*GENERAL OBJECTIVE 6:* **UNDERSTAND COUNTER AND DATA TRANSFER.**					
13 – 15	6.1 Describe the operations of the basic binary ripple counter. 6.2 Describe the operation of the modules counter. 6.3 Describe a shift and transfer of data through registers.	The teacher should: Describe the operation of the basic binary ripple counter. Describe the operation of the count down counter. Describe and explain the operation of the modules counter using as example Mod-6 counters. Define and explain a shift, a shift-right and a shift-round register. Describe the parallel transfer of data through registers. Describe the parallel transfer of data through registers. Describe a serial transfer of data through registers. Describe the serial-parallel transfer operations.	PC connected to an OHP projector. Power point presentation of lecture notes. Online lecture notes. White board.	• Design Counter circuits. • Register circuits	Assist student in their practical work	Networked PC lab, with MS office professional Logic Simulator packages such as Electronic work Bench, or Digital work.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 121)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	50
Test	At least 1 progress test for feed back.	10
Practical / Projects	To be assessed by the teacher	30
Course work/ assignment	To be assessed by the teacher	10
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: DIGITAL SYSTEMS (PRINCIPLES & APPLICATIONS (6TH EDITION
AUTHOR/PUBLISHER: RONALD J. TOCCI/PRENTICE HALL OF EINDIA

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **INTERNET AND WORLD WIDE WEB**				***COURSE CODE:*** **CSE 131**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO ENABLE STUDENTS ACQUIRE BASIC SKILLS OF THE INTERNET**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE.1: **EXPLAIN THE CONCEPT OF INTERNET**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define Internet 1.2 Narrate History of Internet 1.3 Distinguish between internet and intranet 1.4 Define Data transmission	Explain Internet concept Explain historical background of the Internet. Discuss Intranet and Extranet Distinguish between Internet, Intranet and Extranet. Discuss data transmission. Discuss the various transmission media	White Board PC loaded with Power point and connected OHP	• Identify organizations using Intranet and Extranet and state the advantages/disadvantages.	Assist students to find organizations having Intranet and Extranet.	Networked PC's connected to the Internet
Week	***GENERAL OBJECTIVE 2:*** **KNOW THE CONCEPT OF INTERNET.**					
2	2.1 Describe simple computer Network techniques 2.2 Classify computer network by geographical coverage. 2.3 List some major networks. 2.4 State the benefits of Internet	Discuss computer networks such as APPANET, NUFNET AND MILNET Classifications of computer network. Distinguish between APPANET, NUFNET and MILNET The economics, social, political, educational and cultural benefits of the Internet.	White Board PC loaded with Power point and connected OHP	• Download documentations of APPANET, NUFNET and MILNET from the Internet.	Guide the students on how to obtain materials from the Internet about the structure of the APPANET, NUFNET and MILNET	Networked PC's connected to the Internet

Week	***GENERAL OBJECTIVE 3:*** **KNOW VARIOUS SERVICES ON THE INTERNET**					
3	3.1 Describe Internet Services 3.2 Explain the meaning of cyber-café 3.3 State general procedures in a Cybercafé	Discuss: Various Internet services like E-commerce, E-mail, file transfer protocol (FTP), Bulletin Board Service, Audio-Video Communication, Digital Library, world wide web, Telnet and other services. The concept of cyber-café The steps involved in cybercafé operations. Personnel requirements of a cybercafé e g. server/network administrator. Security devices in a cybercafé	White Board PC loaded with Power point and connected to OHP	• Use the various services available on the Internet.	Demonstrate how to use the various Internet services. Take the students to a cyber café	Networked PC's connected to the Internet
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND INTERNET CONNECTIVITY**					
4	4.1 State Basic Hardware requirements for Internet connectivity 4.2 Define a MODEM and state its functions 4.3 Explain the basic concept of wireless transmission. 4.4 State the steps required to connect to the Internet. 4.5 Describe various network protocol	List and explain the basic hardware required for Internet connectivity. Discuss MODEM and its functions Explain the data transfer rate of various modems. Explain the concept of wireless transmission and bandwidth. Discuss various wireless transmission media: VSAT, Radio etc	White Board. PC loaded with PowerPoint and connected to the Internet OHP Different types of MODEM	Be able to • Identify different types of Modem's • Connect to the Internet • Identify VSAT, Radio and Dial-up links.	Show different types of Modem's to students Demonstrate how to connect to the Internet Take students to different cyber café that use VSAT, Radio and Dial-up to connect to the Internet.	Networked PC's connected to the Internet.

		Discuss obstacles to effective transmission. Discuss the steps required to connect a PC to the internet. Explain network protocol. Give examples of network protocol State advantages of TCP/IP for Internet connectivity.				
Week	***GENERAL OBJECTIVE 5:*** **KNOW OBSTACLES TO INTERNET GROWTH IN NIGERIA**					
5	5.1 Identify obstacles to Internet growth in Nigeria. 5.2 Describe Internet Service Provider (ISP) concepts. 5.3 Explain the concept of Domain Name System	Discuss Problems of telecommunication infrastructure in Nigeria. Technical know-how Economic factors in Nigeria-poverty level of the people. Level of awareness. The government policies on internet access. Explain the concept of ISP and the need for it. Explain the economic effect of using local or foreign ISP.	White Board PC loaded with PowerPoint and connected to Internet OHP A popular ISP	Be able to • Enumerate possible solutions to the problems of Internet connectivity in Nigeria	Guide students on how to name servers in Domain Name System Take students to a popular ISP	Networked PC's connected to the Internet.

		Describe domain name system (DNS) and its space Explain how to name servers in the DNS.				
Week	**GENERAL OBJECTIVE 6: KNOW THE FUNDAMENTAL CONCEPT OF WWW**					
6	6.1 Define World Wide Web (WWW) 6.2 State the history of WWW 6.3 Explain the Anatomy of WWW connection 6.4 Describe how a WWW page works 6.5 Describe how mark-up languages work 6.6 Describe how hypertext works 6.7 Describe how Universal Resource Location (URL) works	Explain world wide web (WWW) Outline the history of WWW. Explain the Anatomy of a Web connection. Explain how a web page works. Explain how mark-up languages work. Explain how hypertext works. Explain how URL works.	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Demonstrate ability to browse the internet. Apply different URL and to examine a very basic HTML file written which when manifested give rise to a web page.	To help student to: Brose the net Apply different URLs Examine simple web page written in HTML	Networked PC Lab connected to the internet.. Web application packages such as Dream weaver, MS front page
Week	**GENERAL OBJECTIVE 7: UNDERSTAND CREATION, CUSTOMIZING AND SCRIPTING IN HYPERTEXT MARK UP LANGUAGE (HTML)**					
7 – 8	7.1 State the functions of Hyper Text Mark-up Language (HTML).	Explain the functions of HTML, text formatting, hyperlinks, tables and lists, graphics, sound and video support.	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Plan and write a simple HTML based document • Preview and edit a web page • Create a simple web page. • Create links to other web page	Assists students in performing their Lab work	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page

				• Print HTML document • Create ordered list in HTML document • Create unordered list in HTML document • Control font selection in HTML document • Customize fonts in HTLM document • Align text in HTML document • Use various HTML tags to enhance quality and appearance of a web page.		
				• Add graphics and multimedia to HTML documents • Insert graphic insertion and specify graphic size. • Link graphics in HTML document. • Insert on image map in HTML document. • Add background image in HTML document.	Assists students in performing their Lab work	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page

				• Explore multimedia options.		
				• Plan a form and use it to control input. • Use forms to control input • Create a text entry field • Add check boxes • Create a pull down menu • Add a push button • Connect forms back end	Assists students in performing their Lab work	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page
				• Plan a table out illustrate table concepts. • Work with tables; create a simple table span rows. • Format borders modify table backgrounds, change table dimensions; align table counters; portion page elements. • Control pay layout. • Create a navigational bar. • Create a tram rat • Create target links		Networked PC Lab connected to the internet Web application packages such as Dream weaver, MS front page

				• Format frame boarders • Create a structuring table • Add a two toned background • Create a template. • Illustrate web principles.		
9	7.2 Describe how to perform scripting in an HTML documents.	Explain the advantages of using scripting with HTML (Flexibility, Simplification immediate response, improved interactivity, reduced server loads)	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Create & design scripts using objects • Design & implement scripts, using Java scripts event handlers. • Create functions, • assign variables, • Create conditional scripts.	Assist students in their practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page
Week	**GENERAL OBJECTIVE 8: UNDERSTAND DYNAMIC HYPERTEXT MARK UP LANGUAGE (DHTML)**					
10	8.1 State the function of Dynamic Hypertext Mark-up Language (DHTML). 8.2 Describe the building blocks and object model designs.	Define dynamic HTML Explain the building blocks of DHTML Tour DHTML pages Describes DHTML object model Describe Browser variability Design D HTML pages Research into code architecture Keep up with DHTML charges.	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Design and implement web page using DHTML.	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page

Week	GENERAL OBJECTIVE 9: UNDERSTAND CASCADING STYLE SHEET					
11	9.1 Describe the creation of embedded style sheet 9.2 Describe class criterion, and Browser detect.	Show and hide page elements Change font size dynamically Control font colour dynamically Use external style sheet for above.	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Create an embedded style sheet, and class. • Implement browsers detection. • Show and hide page elements • Change font size, font colour dynamically • Use external style sheet in a document.	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page
Week	**GENERAL OBJECTIVE 10: UNDERSTAND DYNAMIC CONTENT**					
12	10.1 Explain dynamic content by • Inserting content dynamically • Deleting content dynamically • Modifying, Content Dynamically • Incorporating assent advanced content function. • Replacing graphics dynamically. • Bind data	Explain dynamic content	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Insert, delete, and modify content dynamically. • Incorporate assent advanced content function. • Replace graphics, bind data dynamically. • Manipulate bound data dynamically.	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page
Week	**GENERAL OBJECTIVE 11: KNOW WEB DEVELOPMENT TOOLS**					
13	11.1 Explain the various tools for Web development.	Explain how to • Position an element absolutely. • Position an element relatively • Size an element manually • Stack screen	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Position an element absolutely, relatively. • Size an element manually. • Stack screen elements • Add a scroll bar, and	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page

		elements • Add a scroll bar • Create a side bar • Incorporate an advanced positioning function.		create side bar. • Incorporate an advanced positioning function.		
Week	**GENERAL OBJECTIVE 12: UNDERSTAND MULTIMEDIA CONCEPT**					
14	12.1 Explain the operation of Web application development Packages	Explain: The operation of Graphic packages such as: Photoshop, Animation Packages, Dreamweaver, Flash,	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Use web application software to develop a simple web application.	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. Web application packages such as Dream weaver, MS front page, Flash, Photoshop
Week	**GENERAL OBJECTIVE 13: UNDERSTAND THE OPERATION AND USAGE OF EXTENSIBLE MARK-UP LANGUAGE (XML)**					
15	13.1 Explain the operation and application of XML	Explain the meaning of XML Explain how XML is used Explain the advantages of using XML	P.C connected to OHP Power point presentation of Lecture notes. On line lecture notes	• Use XML package and apply to a given case.	Provide guidance and assistance in student practical work.	Networked PC Lab connected to the internet. XML and Cascading Style Sheets (CSS)packages

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 131)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher q	60
Assignment	To be assessed by the teacher	10
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR: WILLIAMS, SAWYER, HUTCHINSON
PUBLISHER: IRWIN MCGRAW-HILL

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **COMPUTER APPLICATION PACKAGES 1**				***COURSE CODE:*** **CSE 141**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: **TO FAMILIARISE STUDENTS WITH COMPUTER APPLICATION PACKAGES**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **KNOW THE EXISTING APPLICATION PACKAGES**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Explain the difference between systems software, program generators and application packages	Explain the difference between systems software, program generators and application packages	White board PC Loaded with different packages and connected to an OHP	• View different software packages and know their features	T o assist student view different software packages and know their features	White board PC in a networked laboratory loaded with different packages and connected to the internet.
2	1.2 Identify the modes of package acquisition 1.3 State the criteria for package acceptability	Identify the modes of package acquisition State the criteria for package acceptability	White board PC Loaded with different packages and connected to an OHP	• View different software packages and know their features	To assist student view different software packages and know their features	White board PC in a networked laboratory loaded with different packages and connected to the internet.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND WORD PROCESSING PACKAGES.**					
3 – 4	2.1 Identify word processing packages	Explain meaning of a word processor State the advantages and use of word processors. Explain the features of the main, help and other menus. Identify functions of word processors in other professional packages like in desk top publishing (Core/draw, PageMaker, etc) Explain use of	White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in word processing as may be determined by the lecturer.	Assist student carry out different assignments in word processing	White board PC in a networked laboratory loaded with different packages and connected to internet.
			White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in word processing as may be determined by the lecturer.	Assist student carry out different assignments in word processing	White board PC in a networked laboratory loaded with different packages and connected to the internet.

		document and non-document text processing including mail merging.				
5	2.2 Describe word processing packages	Explain the import of graphics and the creation of drawing objects, Explain sharing of data with other users	White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in word processing as may be determined by the lecturer.	Assist student carry out different assignments in word processing	White board PC in a networked laboratory loaded with different packages and connected to the internet.
Week	***GENERAL OBJECTIVE 3:*** **KNOW ELECTRONIC SPREAD SHEETS.**					
6	3.1 Explain the concept of a spread sheet. 3.2 Explain the use of spread sheet in a forecasting project, financial analysis, production scheduling and control and other forms of modelling.	List the types of existing spread sheets. Introduce spread sheet concepts. Explain the use of spread sheet in a forecasting project, financial analysis, production scheduling and control and other forms of modelling.	White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in spreadsheets as may be determined by the lecturer.	Assist student carry out different assignments in spreadsheets	White board PC in a networked laboratory loaded with different packages and connected to the internet.
7	3.3 Explain the use of spread sheet to carry out general statistical functions using cell references in a spreadsheet.	Explain carrying out general statistical functions using cell references in a spreadsheet.	White board PC Loaded with different packages and connected to an OHP	• Manipulate different assignments in spreadsheets as may be determined by the lecturer.	Assist student carry out different assignments in spreadsheets	White board PC in a networked laboratory loaded with different packages and connected to the internet.
8	3.4 Explain the use of a spread sheet to perform specific accounting functions and highlight data security requirements on spread sheet data.	Explain performing specific accounting functions using spread sheets and highlight data security requirements on spread sheet data.	White board PC Loaded with different packages and connected to an OHP	• Manipulate complex assignments in spreadsheets as may be determined by the lecturer.	Assist student carry out different assignments in spreadsheets	White board PC in a networked laboratory loaded with different packages and connected to the internet.

	3.5 Transfer information and graphics between applications.	Explain formatting worksheets and working with formulas. Explain transfer of information and graphics between applications.				
Week	***GENERAL OBJECTIVE 4:*** **KNOW THE FUNDAMENTALS OF ACCOUNTING PACKAGES.**					
9	4.1 Identify areas in accounting and financial management prone to using accounting packages. 4.2 Identify existing accounting packages highlighting facilities that make each package unique (Peach tree, DacEasy, Sage, Quick books.	Explain accounting and financial management Identify areas in accounting to use accounting packages. Describe an overview of the various types of available existing accounting packages highlighting facilities that make each package Explain payroll, job costing, invoicing and order processing.	White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in accounting and payroll as may be determined by the lecturer.	Assist student carry out different assignments in accounting and payroll	White board PC in a networked laboratory loaded with different packages and connected to the internet.
10	4.3 Explain the following accounting system: general ledger system, accounts receivable, accounts payable, 4.4 Explain payroll, job costing, invoicing and order processing.	Explain accounting and financial management Identify areas in accounting to use accounting packages. Describe an overview of the various types of available existing accounting packages	White board PC Loaded with different packages and connected to an OHP	• Carry out different assignments in accounting and payroll as may be determined by the lecturer.	Assist student carry out different assignments in accounting and payroll	White board PC in a networked laboratory loaded with different packages and connected to the internet.

		highlighting facilities that make each package Explain payroll, job costing, invoicing and order processing.				
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND PRESENTATION PACKAGES.**					
11	5.1 List the functions of a presentation package using power point to illustrate.	Explain the functions of a presentation package using power point. Explain types of presentation	White board PC Loaded with different packages and connected to an OHP	• Carry out different presentation assignments as may be determined by the lecturer.	Assist student carry out different presentation assignments	White board PC in a networked laboratory loaded with different packages and connected to the internet.
12	5.2 Explain types of presentation on strategies, sales promotion, training, marketing plan, company meetings using the auto content wizard and templates.	Create presentations on strategies, sales promotion, training, marketing plan, company meetings using the auto content wizard and templates.	White board PC Loaded with different packages and connected to an OHP	• Carry out different presentation assignments as may be determined by the lecturer.	Assist student carry out different presentation assignments	White board PC in a networked laboratory loaded with different packages and connected to the internet.
13	5.3 Explain the use of slides to illustrate different views presentations.	Use slides to illustrate different views presentations**.**	White board PC Loaded with different packages and connected to an OHP	• Carry out different presentation assignments as may be determined by the lecturer.	Assist student carry out different presentation assignments	White board PC in a networked laboratory loaded with different packages and connected to the internet.

Week	*GENERAL OBJECTIVE 6:* **KNOW HOW TO USE EDUCATION, MEDICAL AND OTHER PACKAGES.**					
14	6.1 Illustrate a general overview of educational, medical and other packages	Explain an overview of educational, medical and other packages	White board PC Loaded with different packages and connected to an OHP	• Carry out an assignment using a medical package	Assist student to carry out an assignment using a medical package	White board PC in a networked laboratory loaded with different packages and connected to the internet.
15	6.1 Illustrate a general overview of educational, medical and other packages (continued)	Explain an overview of educational, medical and other packages	White board PC Loaded with different packages and connected to an OHP	• Carry out an assignment using a medical package	Assist student to carry out an assignment using a medical package	White board PC in a networked laboratory loaded with different packages and connected to the internet.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 141)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	30
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher	50
Assignment	To be assessed by the teacher	10
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR/PUBLISHER: WILLIAMS, SAWYER, HUTCHINSON/IRWIN MCGRAW-HILL

TITLE: MASTERING MICROSOFT OFFICE 2000 PROFESSIONAL EDITION.
AUTHOR/PUBLISHER: GINI COURTER, ANNETTE MARQUIS/SYBEX

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **FILE ORGANIZATION AND MANAGEMENT**				***COURSE CODE:*** **CSE 151**	***CONTACT HOURS:*** **1 – 0 – 2**	
GOAL: **TO FAMILIARISE STUDENTS WITH BASIC KNOWLEDGE AND SKILLS OF FILE ORGANISATION AND MANAGEMENT**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **KNOW SIMPLE FILE ORGANISATION CONCEPT**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	Resources	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 3	1.1 Explain the concept of filing in computing 1.2 Explain the concept of record, field, character, byte and bits in relation to a file 1.3 Explain the seek, read, write, fetch, insert, delete and update operations 1.4 Describe qualitatively file system performance in terms of fetch, insert, update and reorganization.	To : Identify a file in computing Relate record, field, character, byte and bits to a file Explain blocks of data Describe seek, read, write, fetch, insert, delete and update operations Explain qualitatively file system performance in terms of fetch, insert, update and re-organization	A flip chart, A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that can be opened for demonstration.	• Write a simple program that creates and updates records of a file.	To assist students write a simple program that create and updates records of a file	OHP connected to PC loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE CONCEPT OF FILE OPERATIONS**					
4 – 6	2.1 State different methods of file organisation in computer system (heap……) 2.2 Describe file design alternatives 2.3 Identify the different file operations; storage, retrieval, add, delete, update and maintenance.	To: Describe different methods of file organisation in computer system (heap……) Evaluate the file design alternatives State illustrative examples of the application of the	A flip chart, A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that can be opened for demonstration.	• Write a simple program for creating and maintaining different file organisation.	To assist student to write a simple program for creating and maintaining different file organisation.	OHP connected to PC loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.

	2.4 Define activity ratio and hit rate. 2.5 Identify different types of files: Master file, Transaction file, Reference file, etc. 2.6 Explain the concept of master file, transaction file and activity file.	different design alternatives. Explain the different file operations; storage, retrieval, add, delete, update and maintenance. Define posting. Define activity ratio and hit rate. Explain different types of files: Master file, Transaction file, Reference file, etc. Differentiate among old master file, new master file, transaction file and activity file. Explain the use grand father, father and son analogy.				
Week	***GENERAL OBJECTIVE 3*: UNDERSTAND THE BASIC STORAGE DEVICES AND MEDIA.**					
7 – 8	3.1 Identify types of storage devices and media 3.2 List the characteristics of magnetic storage media, tape, disk, cartridge, bubble, hard disk, CD-ROM, floppy disks, zip disk, tape streamer, flash memory, optical disk.	TO; Identify types of storage devices and media Describe the characteristics of magnetic storage media, tape, disk,	A flip chart, A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that	• Load and retrieve documents to and from different storage media.	To assist student to load and retrieve documents to and from different storage media.	OHP connected to PC loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.

		cartridge, bubble, hard disk, CD-ROM, floppy disks, zip disk, tape streamer, flash memory, optical disk. Describe the nature and characteristics of media listed above Describe optical storage device.	can be opened for demonstration.			
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND DIFFERENT FILE ACCESS METHODS AND THE BUFFERING TECHNIQUES.**					
9 – 10	4.1 Differentiate file access types: - random access and direct access storage methods. 4.2 Seek time and rotational delay 4.3 Explain The concept of a buffer and its functions 4.4 Describe the calculation of buffer requirement of a file.	TO: State different file access types:- random access and direct access storage methods. Define seek time and rotational delay Explain the parameters above in relation to different access methods mentioned above. Define a buffer List the functions of a buffer Calculate buffer requirement of a file.	A flip chart, A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that can be opened for demonstration.	• Write simple programs involving sequential and random access methods.	To assist students to write simple programs involving sequential and random access methods.	OHP connected to PC loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.

Week	*GENERAL OBJECTIVE 5:* **UNDERSTAND FILE ORGANIZATIONAL STRUCTURE AND PROCESSING.**					
11 – 13	5.1 Describe File structure and organization 5.2 Describe file processing technique 5.3 Describe acoustical data structure 5.4 Describe File generation and management 5.5 Describe File sorting and merging.	Explain file structure and organization Explain acoustical data structure Describe table and arrays. Describe lists. Compare stacks and queues Describe plex structures Describe the techniques of file processing: Batch, real-time, on-line, serial, sequential, indexed-sequential, random, etc. Describe methods of generating files: e.g. key to tape, key to disk. Explain file creation procedures Describe file sorting and merging.	A flip chart, A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that can be opened for demonstration.	• Write simple program involving 1, 2, 3 dimensional arrays, stacks and Queues.	To assist student to write simple programs involving 1, 2, 3 dimensional arrays, stacks and Queues.	OHP connected to PC loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.
Week	*GENERAL OBJECTIVES 6:* **UNDERSTAND FILE UPDATE, PROTECTION AND SECURITY**					
14 – 15	6.1 Explain the concept of file	TO:	A flip chart,	• Write a file access protection	To assist student to write a	OHP connected to PC

	access, file protection (passwords access rights, priority status, cryptography etc) 6.2 Describe file indexing and index maintenance. 6.3 Explain file status, dumping and archiving. 6.4 Identify the problems relating to file access, protection, Security, archiving and backing up.	Describe file update procedures and file access Explain file protection (passwords access rights, priority status, cryptography etc) Explain indexing and index maintenance. Describe file status Explain dumping Explain archiving. List problems relating to file access, protection, Security, archiving and backing up. Explain approaches to each problem above.	A white board, OHP connected to PC loaded with appropriate software. A PC with most input and output devices that can be opened for demonstration.	and security program.	file access protection and security program.	loaded with appropriate software in a networked laboratory. A PC with most input and output devices that can be opened for demonstration.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 151)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	50
Course work and assignment	To be assessed by teacher	20
Test	At least 2 progress tests for feed back.	10
Practical	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR/PUBLISHER: WILLIAMS, SAWYER, HUTCHINSON/IRWIN MCGRAW-HILL

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **LOGIC AND LINEAR ALGEBRA**				***COURSE CODE:*** **MTH 101**	***CONTACT HOURS:*** **2 – 1 – 0**	
GOAL: **TO STIMULATE AND LOGICAL REASONING OF THE STUDENTS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**Practical Content**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE CONCEPT OF LOGIC AND ABSTRACT THINKING**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define the essential connectives, negation, conjunction, disjunction, implication and bi-implication. 1.2 Illustrate the essential connectives define in 1.1 above 1.3 Describe grouping and parenthesis in logic 1.4 Explain Truth tables. 1.5 Define tautology.	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
2	1.6 Illustrate types of tautology. 1.7 Define universal quantifier and existential quantifier	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
3	1.8 Translate sentences into symbolic form using quantifiers. E.g. "some freshmen are intelligent can be stated as "for some x,x is a freshman and x is intelligent" can be translated in symbols as (ix) (f x & ix) 1.9 Define the scope of a quantifier. Eg R=Gauss was	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes

	a contemporary of Napoleon S=Napoleon was a contemporary of Julius Caesar (Thus P, Q and R are true, and S is false Then find the truth value of sentences: (a) (P and Q) = R (b) (P – Q) (c) PAND Q = R - S 1.8 Define bond and "free" variables					
4	1.11 Define term and formula. 1.12 Explain the validity of formulae	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
Week	***GENERAL OBJECTIVE 2 :*** **UNDERSTAND THE CONCEPT OF PERMUTATIONS AND COMBINATIONS**					
5	2.1 Define permutation's and Combination 2.2 Give illustrative examples of each of 2.1 above 2.3 State and prove the fundamental principle of permutations. 2.4 Give illustrative examples of the fundamental principles of permutations. 2.5 Establish the formula nPr = n ! (n-r)!	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
6	2.6 Prove that nPr= (n-r+1) *nP_{r-1} 2.7 Solve problems of permutations with	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes

	restrictions on some of. the objects 2.8 Solve problems of permutations in which the objects may be repeated. 2.9 Describe circular permutations. 2.10 Solve problems of permutations of N identical objects.					
7	2.11 Establish the formula: nCr = n! r!(n-r)! 2.12 State and prove the theorem nCr-1+ ^{n}Cr = $^{n+1}$Cr 2.13 Explain problems of combinations with restrictions on some of the objects. 2.14 Solve problems of combination of "n" different objects taken any number of it at a time.	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
Week	***GENERAL OBJECTIVE 3:*** **UNDERTAKE THE BINOMIAL EXPANSION OF ALGEBRAIC EXPRESSIONS.**					
8	3.1 Explain with illustrative examples the method of mathematical induction. 3.2 State and prove binomial theorem for positive integral index.	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
9	3.3 Describe, with examples, the properties of binomial	Explain and discuss the concepts covered	Textbooks	• Demonstrate	Explain and supervise student exercises and	Textbooks

	expansion.		Lecture Notes	understanding of the concepts covered by solving examples	assess student work	Lecture Notes
10	3.4 State the binomial theorem for a rational number. 3.5 State the properties of binomial coefficients	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
11	3.6 Apply binomial expansion in approximations (simple examples only).	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE ALGEBRAIC OPERATIONS OF MATRIXES AND DETERMINANTS**					
12	4.1 Define Matrix 4.2 Define the special matrixes of zero matrixes e.g. zero matrix, identity matrix, square matrix, and triangular matrix, symmetric matrix.	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
13	4.3 State examples for each of the matrixes in 4.2 above 4.4 State the laws of addition and multiplication of matrixes. 4.5 Illustrate the commutative, associative and distributive nature of the laws stated in 4.4 above. 4.6 Define the transpose of a matrix. 4.7 Determine a determinant the minors and cofactors 2 by 2	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes

	and 3 by 3 matrixes					
14	4.8 Define the minors and cofactors of a determinant. 4.9 Explain the method of evaluating determinants.	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes
15	4.10 State and prove the theorem "two rows or two columns of a matrix are identical, and then the value of its determinant is zero". 4.11 State and prove the theorem "if two rows or two columns of a matrix are interchanged, the sign of the Value of its determinant is changed	Explain and discuss the concepts covered	Textbooks Lecture Notes	• Demonstrate understanding of the concepts covered by solving examples	Explain and supervise student exercises and assess student work	Textbooks Lecture Notes

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (MTH 101)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 2 progress tests for feed back.	20
Practical	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: FURTHER MATHEMATICS
AUTHOR/PUBLISHER: C. O. OROGE/CLEMOL PUBLISHERS

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **INTRODUCTION TO STATISTICS**				***COURSE CODE:*** **STT 101**	***CONTACT HOURS:*** **2 – 0 – 0**	
GOAL: **TO ACQUAINT STUDENTS WITH BASIC KNOWLEDGE OF STATISTICAL ANALYSIS**						
	COURSE SPECIFICATION: **THEORETICAL CONTENT**					
	GENERAL OBJECTIVE 1: **UNDERSTAND STATISTICS AND ALL THAT IT STANDS FOR.**					
Week	**Special Learning Outcomes**	**Teachers Activities**	**Resources**	**Special Learning Outcomes**	**Teachers Activities**	**Resources**
1	1.1 Define statistics 1.2 Explain with approximate illustrations, the use of statistics in Government, Biological Sciences, Physical Science. Business and Economics.	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE DIFFERENT METHODS OF DATA COLLECTION AND THEIR LIMITATIONS.**					
2 – 3	2.1 State the method of collecting data 2.2 Describe the two main methods of collecting primary data: a) Established published sources b) "Ad-hoc" basic or experimentation 2.3 State the merits and demerits of the methods of collecting primary data 2.4 Explain the concept of data "editing" and its application in editing primary and secondary data. 2.5 Describe the sources of error in data collection	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			
Week	***GENERAL OBJECTIVE 3:*** **KNOW THE DIFFERENT FORMS OF DATA PRESENTATION.**					

4 – 5	3.1 Explain the objectives of classification of a mass of raw data 3.2 Prepare a frequency distribution form a given data 3.3 Explain the usefulness of diagrams in presenting statistical data 3.4 Construct bar chart, pie chart, histogram, frequency polygon and cumulative frequency polygon knave for a given set of data 3.5 Outline the merits and demerits of each diagram in 3.4 above.	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE USE AND THE IMPORTANCE OF SOME MEASURES OF CENTRAL TENDENCY IN SUMMARIZING DATA**.					
6 – 7	4.1 Define Arithmetic mean, Geometric Mean, Median, Mode and harmonic mean 4.2 Compute the measurer in 4.1 above given: I. ungrouped II. grouped data 4.3 Explain the uses of Geometric and Germanic means 4.4 Calculate: Quantiles, Deciles, Percentiles given a set of data	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			

	4.5 List the merits and demerits of all the above measured of central tendency.					
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE USE AND IMPORTANCE OF MEASURES OF DISPERSION IN SUMMARIZING DATA**					
8	5.1 State the importance of measures of dispersion. 5.2 Defined and calculate the mean deviation Semi interquartile range Variance and Standard. 1. .3 Describe the application of the measure of dispersion defined in 5.2 above. 5.4 Calculate the standard error of the sample mean for given data.	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			
Week	***GENERAL OBJECTIVE 6:*** **KNOW THE DIFFERENT TYPES OF RANDOM VARIABLES**					
9	6.1 Define a random variable. 6.2 Explain the concept of random variable. 6.3 Define discrete and continuous variables. 6.4 State examples of discrete and continuous variable	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			

Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND THE BASIC PRINCIPLES OF PROBABILITY**					
10	7.1 Define probability. 7.2 Explain probability using the relative frequency approach. 7.3 State the laws of probability. 7.4 Solve simple problems by applying the laws of probability. 7.5 Define conditional probability for two events.	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND SOME BASIC PROBABILITY DISTRIBUTIONS AND BE ABLE TO IDENTIFY EACH DISTRIBUTION**					
11 – 13	7.1 State the probability distribution of a random variable. 7.2 Define mathematical expectation of discrete and continuous random variable. 7.3 Define expectations of functions of discrete random variable. 7.4 Define the binomial distribution. 7.5 Define conditional probability for two events. 7.6 Calculate the means and variance under the Binomial	Explain and discuss the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			

	and the poison distributions. 7.7 Define Normal distribution. 7.8 Approximate probabilities for given continuous random variables using normal distribution. 7.9 Explain the characteristics of Binomial distribution. 7.10 Calculate the probability given the deviation from the mean 7.11 Calculate the deviation given the means, standard deviation and a particular observation 7.12 Describe normal distribution curve and the empirical distribution rule. 7.13 Explain the characteristics of Normal distribution. 7.14 Calculate the area under the curve at different point from either side of the mean. 7.15 Apply Normal distribution curve to simple Problems					

Week	*GENERAL OBJECTIVE 8:* **UNDERSTAND THE PRINCIPLES OF CORRELATION OF TWO VARIABLES AND THE REGRESSION OF ONE VARIABLE ON ANOTHER**					
14 – 15	8.1 Define correlation. 8.2 State the types of correlation. 8.3 Describe the methods of studying correlation I. Scatter diagram (graphic method) II. Kari Pearson's coefficient of correlation III. Spearman's rank correlation 8.4 Calculate Pearson's and Spearman's correlation coefficients 8.5 Define regression equation of the form Y=a+bx using free-hand method and Method of least squares.	Explain the concepts covered	Chalkboard, chalk, duster, calculators. Recommended text books			

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (STT 101)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 2 progress tests for feed back.	20
Course Work	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: STATISTICS
AUTHOR/PUBLISHER: FRANK OWEN & RON JONES/PITMAN PUBLISHING

TITLE: FURTHER MATHEMATICS
AUTHOR/PUBLISHER: C. O. OROGE/CLEMOL PUBLISHERS.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **ENGLISH LANGUAGE AND COMMUNICATION I**				***COURSE CODE:*** **GNS 101**	***CONTACT HOURS:*** **2 – 0 – 0**	
GOAL: **TO ACQUIRE KNOWLEDGE AND SKILLS IN COMMUNICATION**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **DEVELOP APPROPRIATE STUDY SKILLS USING ENGLISH LANGUAGE**					
Week	**Specific Learning Outcomes**	**Teacher's Activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Explain the principles of good note taking and making techniques in English. 1.2 Explain the method of note taking/making English.	Explain the necessity for acquiring good note-making techniques in English. Show methods of note-taking/making in English.	Flip charts, Felt pen, Textbooks, Workbooks, Close-circuit TV, Model notes	• Demonstrate good note-taking skill in English. • List methods of note-taking/making in English.	Provide assignments on note taking. Provide sources of information on note-taking/making.	Flip charts, Felt pen, Textbooks, Workbooks, Library, Internet
2	1.3 Identify sources of library information. 1.4 Identify information in the sources listed in 1.3. 1.5 Identify good reading habits in English.	Expose students to sources of library information in English. Discuss with students how to locate the sources listed in1.3. Discuss the principles of good reading habits.	Library, Dictionary, reference books, etc Class handouts	• Classify sources of library information. • Locate information in the courses listed in 1.3. • Apply good reading habits	Refer students to sources of library information. Guide students in locating the sources listed in 1.3. Set tasks and supervise activities	Sections of Library, Internet, Newspapers, Textbooks, Magazine, Selected Novels
Week	***GENERAL OBJECTIVE 2:*** **KNOW THE NATURE OF LANGUAGE AND THE BASIC RULES OF GRAMMAR.**					
3	2.1 List the characteristics of language. 2.2 Describe the four language skills – speaking, listening, writing, & reading.	Explain the concept of Language Textbooks Discuss the four language skills.	Textbooks Handouts	• Apply the four language skills in communication.	Supervise the students' activities.	Audio tapes, Radio Video recorder, CD-ROM

4	2.3 Explain the functions of language. 2.4 List the uses of English Language in Nigeria. 2.5 Identify grammar and parts of speech.	Explain the functions of language. Explain the uses of English Language in Nigeria e.g. as a language of Research, government, business, etc. Explain grammar and parts of speech.	Textbooks Handouts Resource persons from government, business, research, etc	• Apply the functions in groups. • Play roles as researchers, government officials, business, etc.	Supervise the students' activities. Evaluate students' activities.	Audio tapes, Radio Video recorder, CD-ROM
5	2.6 Explain the use of part of speech in sentences. 2.7 Identify common errors in the use of parts of speech.	Analyse the use of parts of speech in sentences. Explain what constitute errors in the use of parts of speech.	Demonstration tapes. Class handouts Examples	• Carry out on the assigned exercises. • Correct common errors in the use of parts of speech.	Provide exercise as parts of speech. Provide passages containing common errors in parts of speech.	Textbooks Workbooks and related materials. Passages, Extracts Speech's
6	2.8 Explain correct synthetic arrangement and punctuation marks. 2.9 Describe idioms, figures of speech, and offices.	Demonstrate to students correct synthetics arrangement and punctuation marks. Explain idioms, figures of speech and affixes.	Handouts Examples As in 2.7 above.	• Construct sentences with correct syntactic arrangement and punctuation. • Construct sentences to illustrate idioms, figures of speech and affixes.	Set activities and provide feedback Set activities and provide feedback	As in 2.7 above. As in 2.7 above.
Week	***GENERAL OBJECTIVE 3:*** **APPRECIATE LITERACY WORKS IN ENGLISH.**					
7	3.1 Explain the meaning and stages of development of literature. 3.2 Classify the literary game.	Define and trace the development of literature. Different between the literacy genres.	Literary materials. Handouts Classical and modern literary works.	• Analyse the characteristics of different literacy genres.	Supervise the student's activity.	Class handouts Selected literary examples

8	3.3 Explain the terminology and functions of literature.	Explain the terminology and functions of literature such prose and fiction in terms of e.g. plot, setting, characterisation, etc.	As in 5.2 above	• Differentiate among the following fiction, prose, plot, setting characterisation etc.	Evaluate student's activity.	Role playing of the characters.
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE CONCEPT OF COMMUNICATION.**					
9	4.1 Define and outline the process of communication. 4.2 List the purpose of communication. 4.3 Differentiate between communication and language.	Define and analyse the process of communication. Analyse the purposes of communication Explain the relationship between communication and language.	Textbooks, Charts, etc.	• Identify barriers to effective communication at various levels.	Evaluate students work.	Handouts
10	4.4 Explain the impact of interference on communication at various levels. 4.5 Explain code mixing, code switching, and dissonance in communication.	Explain the impact of interference on communication at various levels e.g. phonological, syntactic, etc. Explain code mixing code switching and dissonance in communication.	Telephone receivers, Radio, Television, etc. Class handouts	• Identify impact of interference in communication	Moderate the student's discussion. Role plays	Telephone receivers, Radio, Television, etc. Class handouts
Week	***GENERAL OBJECTIVE 5:*** **KNOW TO MAKE ORAL AND WRITTEN PRESENTATIONS.**					
11	5.1 List the organs and functions of speech. 5.2 List the phonemes of English.	Label and describe the functions of the organs of speech. Explain the phonemes of English.	Class handouts Recommended Text books	• Label organs of speech. • Classify functions of organs of speech. • Produce correctly each of the phonemes enumerated by the teacher.	Guide the students. Guide the students.	Handouts Oral and written speeches.

12	5.3 Explain the different sound contrast as demonstrated by the teacher. 5.4 Note the principles of effective speaking.	Distinguish between the different sound contrasts in the consonantal and vowel systems of English Language through correct pronunciation. Explain principles of effective speaking viz, correct use of stress, rhythm, and intonation pattern.	Sound tracks e.g. video, audio, etc Handouts	• Pronounce the different sound contrasts in English Language. • Make short speeches e.g. welcome address, stories, vote of thanks, etc.	Evaluate students work. Illustrate techniques of effective speaking.	Sound tracks e.g. video, audio, etc
13	5.5 List the various types of correspondence.	Explain and illustrate the various types of correspondence, e.g. letter, memo, notices, etc.	Models of formal and informal letters, memo, notices, etc.	• Write formal and informal letters, memos and notices.	Evaluate students' work.	Models of formal and informal letters, memo, notices, etc.
Week	***GENERAL OBJECTIVE 6:*** **KNOW THE RULES OF COMPREHENSION AND INTERPRETATION.**					
14	6.1 Recognise the idea in a given passage as distinct from details.	Explain the concept of main idea and differentiate it from details.	Selected passages from relevant texts.	• Identify main idea in a given passage. • Distinguish between main idea and details.	Group work. Guide students in their work.	Selected passages Handouts
15	6.2 Identify the use of main idea in anticipating details. 6.3 Identify the use of context dues in comprehension.	Explain the use of main idea in anticipating specific details. Explain how to use contest dues such as definitions, restatements, and examples to aid comprehension.	Selected passages from relevant texts.	• Predict specific details from main idea. • Draw conclusions from available information.	Evaluate students work. Guide and evaluate students work.	Selected passages Handouts

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (GNS 101)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 2 progress tests for feed back.	20
Course Work	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

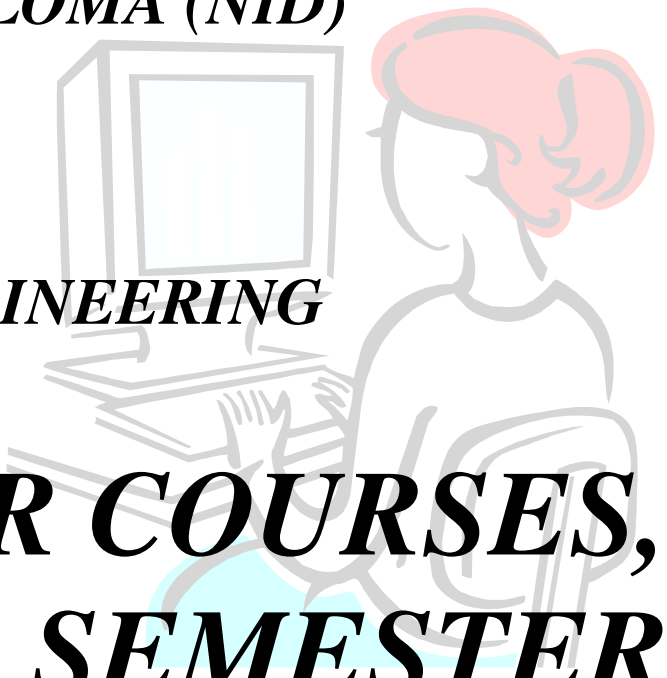
TITLE: ENGLISH GRAMMAR FOR SCHOOLS AND COLLEGES
AUTHOR/PUBLISHER: GBENGA FAKUADE/PARACLETE PUBLISHERS

TITLE: REAL WRITING WITH READING
AUTHOR/PUBLISHER: SUSAN ANKER/BED FORD/ST. MARTIN'S

NATIONAL INNOVATION DIPLOMA (NID)

IN

COMPUTER SOFTWARE ENGINEERING



FIRST YEAR COURSES, SECOND SEMESTER

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **DATA STRUCTURES AND ALGORITHM**				***COURSE CODE:*** **CSE 102**	***CONTACT HOURS:*** **1 – 0 – 1**	
GOAL: **TO EQUIP STUDENTS WITH KNOWLEDGE OF WRITING SIMPLE ALGORITHM**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND CONCEPTS OF DATA STRUCTURE AND TOOLS FOR STUDYING.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define data structure 1.2 Define data attributes; name, value range, data types. 1.3 Define units for identifying data character, fields, sub fields, records, files.	Discuss concept of data structure Explain data attributes, name value range and data types Explain concepts of character, fields, sub field, records and files	White Board. PC loaded with PowerPoint and connected to an OHP	• Use Data attributes, fields, sub fields, records and files.	Demonstrate using relevant examples Concepts of attributes, name, value range and data types. Concept of character, fields, sub field, records and files.	Networked PCs loaded with relevant software
Week	***GENERAL OBJECTIVE 2:*** **KNOW TOOLS FOR STUDYING DATA: SYMBOLS, RELATIONS, AND GRAPH.**					
2 – 3	2.1 Define symbols, relations and graph. 2.2 Explain the symbols for expressing relations among data. 2.3 Explain position relation cell contents, record location, transfer key. 2.4 Explain order relation; record rank, cell rank. 2.5 State properties of graph: routes, edge, sequences, directed and non-directed. 2.6 Describe operations such as proceeds, less than points to, move to, search, change, entry.	Explain the meaning of data structure. Discuss symbols, relations and graph Discuss the symbols for expressing relations among data, position relation cell contents, record location, and transfer key. Explain the properties of graph: routes, edge, sequences, directed and non-directed. Describe operations such as precedes, less than points to, move to, search, change, entry.	White Board. PC loaded with PowerPoint and connected to OHP	• Apply the use of symbols, relations and graph.	Demonstrate using relevant examples on how to use symbols, relations and graph	Networked PCs loaded with relevant software.

Week	***GENERAL OBJECTIVE 3:*** **KNOW SETS RELATIONS** AND **STRING STRUCTURE.**					
4	3.1 Define sets and relation 3.2 Define the elements of set, subsets, super sets, Universal set and null set. 3.3 Describe set operations 3.4 Define relations. 3.5 Explain equivalence relation. 3.6 Explain composite relation	Discuss Sets and relations Concepts of subsets, super set, Universal set and null set. Develop simple programs to carry out the operation	Be able to write simple programs to carry out set operations	• Apply the use of symbols, relations and graph.	Demonstrate giving real life example. Guide the students on how to develop simple programs to carry out set operations.	Networked PCs loaded with relevant software.
Week	***GENERAL OBJECTIVE 4:*** **KNOW STRING STRUCTURE**					
5	4.1 Define string 4.2 Explain representation: character, string length and string values. 4.3 Explain basic operation on string assignment, sub string selection, insertion, and sub string retrieval. Deletion concatenation and replacement. 4.4 Explain set representation. 4.5 Describe storage mapping techniques for string variables.	Discuss String and its basic operations Set representation Storage mapping techniques for string variables.	Be able to write simple programs to carry out set operations	• Solve problems requiring the application of sting length, assignment, selection, insertion	Introduce some problems and solve them with the students	Networked PC's loaded with relevant software.
Week	***GENERAL OBJECTIVE 5:*** **KNOW DATA LIFE CYCLE DATA REPRESENTATION, PROPERTIES OF ORDERED AND OCCUPANCY**					
6	5.1 Explain the term occupancy leans, empty,	Explain Different life cycle of	Be able to write simple programs to	• Apply the use of variable fixed length record	Demonstrate concept of fixed and variable length	Networked PC's loaded with relevant

	loose. 5.2 Define birth, death and change of data. 5.3 enumerate the differences between birth, death and change of data. 5.4 Define a sequential list, 5.5 Explain the differences between fixed and variable length fields. 5.6 Implement fixed and variable fields.	data Discuss sequential list Record length outlining the fixed and variable length.	carry out set operations		using appropriate examples.	software.
Week	***GENERAL OBJECTIVE 6:*** **KNOW THE PROPERTIES OF ORDERED AND LINEAR LIST**					
7	6.1 Define ordered and linear list. 6.2 Explain operations that can be performed on an ordered list: append, search (including delete, sort, selection and exchange, merge, including multiway merge and balance merge.)	Define ordered and linear list. Discuss various operations that can be performed on ordered list.	Be able to write simple programs to carry out set operations	• Carry out ordered list operations	Demonstrate using appropriate examples concept of ordered and linear lists. Demonstrate how to perform ordered list operations	Networked PC's loaded with relevant software.

Week	*GENERAL OBJECTIVE 7:* **KNOW SIMPLE LINKED LISTS.**					
8 – 9	7.1 Describe different types of linked list array, double linked list, queues, stock, dequeues, trees. 7.2 Explain the use of pointers. 7.3 Describe storage mapping for linked lists.	Define linked list and compare it with linear list. Explain types of linked list. Discuss different types of trees. Discuss the use of pointers	Be able to write simple programs to carry out set operations	• Apply linked list.	Demonstrate the push and pop operation possibly with diagram. Carry out operations on linked lists e.g push and pop on stacks and all operations on over list	Networked PC's loaded with relevant software.
Week	*GENERAL OBJECTIVE 8:* **KNOW NON-LINEAR STRUCTURES.**					
10 – 12	8.1 Define a tree 8.2 State properties of tree 8.3 Describe different types of tree. (General tree, binary tree) 8.4 Explain binary tree representation. 8.5 Define graph, its types and properties	Discuss tree and its properties Explain binary tree representation Define graph State properties of graph: routes, queued and non-directed Describe different types of graphs: circle, loops, etc. Describe operations such as proceeds, less than etc.	Be able to write simple programs to carry out set operations	• Write simple program to implement trees • Write simple program to implement graphs	Demonstrate how to write simple program to illustrate trees Demonstrate how to write simple program to illustrate graphs	Networked PC's loaded with relevant software.
Week	*GENERAL OBJECTIVE 9:* **UNDERSTAND DIFFERENT SORTING AND SEARCHING TECHNIQUES**					
13 – 15	9.1 Define sorting and the various sorting techniques 9.2 Explain sorting and the	Be able to: Define sorting Explain Comparison	Be able to write simple programs to carry out set operations	• Implement different sorting techniques in program	Guide students on how to write programs to implement different sorting techniques	Networked PC's loaded with relevant software.

	various sorting techniques	based sorting Explain bubble sorting algorithm Explain selection sorting algorithm Explain insertion sorting algorithm Explain linear and binary search algorithm			Guide students on how to Perform different sorting and searching techniques Apply sorting algorithm to sort an array of objects.	

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 102)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 1 progress test for feed back.	10
Course work and assignment	To be assessed by the teacher	30
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: DATA PROCESSING AND INFORMATION TECHNOLOGY 10TH EDITION
AUTHOR/PUBLISHER: OLIVER & CHAPMAN'S/MARTINS THE PRINTERS LTD
.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **PC UPGRADE AND MAINTENANCE**				***COURSE CODE:*** **CSE 112**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EQUIP STUDENTS WITH THE SKILLS NEEDED FOR COMPUTER UPGRADE AND MAINTENANCE TASKS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **TO UNDERSTAND THE CONCEPT OF UPGRADING AND MAINTENANCE FOR PC**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Explain the need for PC maintenance.	To provide: An introduction to PC maintenance. To explain: Typical hazards threatening the normal operation of PC. E.g. static electricity, power fluctuation, power surge, dusty environment, excessive ambiance temperature, viruses The need for computer backups	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Assess a computer maintenance requirement. • Identify appropriate hardware tools. • Protect the computer components from static electricity. • Clean computer from dust. • Clean the computer systems from the viruses. • Perform system backup.	To assist: Student with their maintenance assessment of a computer. To choose appropriate hardware tools. How to clean a computer from dust. How to clean a computer from viruses. How to Perform system backup.	Computer hardware and software tools
2	1.2 Explain the need for PC upgrade.	To explain: Technological changes in computer hardware. User demand for a higher processing power. The emergence of complicated software package.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Assess the required computing power for a new application software.	To provide advice on student assessment of new required computing power.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade.
Week	***GENERAL OBJECTIVE 2:*** **TO UNDERSTAND THE LIMITATION OF A PC AND SCOPE FOR UPGRADING**					
3	2.1 Explain the process of hardware upgrading. 2.2 Explain how to choose	To explain: How to open the case of a PC.	PC connected to an OHP. Power Point	The ability to: • Open a computer case and	To show student how to: Open a computer case and identify components	Access to a variety of computer components

	hardware components for upgrading.	How to make a list of components to upgrade. How to get prepared for a component change (obtaining the required hardware/software tools and components). How to check and verify the specifications of new components against the new requirements.	presentation of Lectures. On line lecture notes. Smart/White board	identify components for upgrading. • List the current computer components specifications. • Choose components that match the new hardware/software requirements. • Verify specifications against requirements.	for upgrading. List the current computer components specifications. To choose components that matches the new hardware/software requirements. Verify specifications against requirements.	Internet access to obtain the latest information on hardware and software upgrade.
Week	***GENERAL OBJECTIVE 3:*** **TO UNDERSTAND TECHNICAL SPECIFICATIONS FOR PC UPGRADING**					
4 – 5	3.1 Explain how to replace the computer case.	To explain: How to choose a suitable case which meets specifics requirements. How to dismantle the old computer. How to assemble the upgraded components and the un-upgraded components in the new case.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer cases.

6	3.3 Explain how to replace the computer power supply.	To explain: How to choose a suitable power supply which meets specifics requirements. How to dismantle the old power supply computer. How to assemble the new power supply.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC power supplies which match the new requirements. • Assemble and disassemble computer power supply.	To provide advise and assistance on choosing computer power supply. To provide advise and assistance on Assemble and disassemble a computers power supply.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer power supply.
7	3.4 Explain how to replace the computer main board.	To explain: How to choose a suitable main board which meets specifics requirements. How to dismantle the old main board computer. How to assemble the new main board.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer main board. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer main board.
8	3.5 Explain how to replace the computer CPU.	To explain: How to choose a suitable CPU which meets specifics requirements. How to dismantle the CPU. How to assemble the new CPU.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer CPU.

9 – 10	3.6 Describe how to replace the computer mass storage.	To explain: How to choose a suitable mass storage which meets specifics requirements. How to dismantle the mass storage. How to assemble the new mass storage.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer mass storage.
11	3.7 Describe how to replace the computer display unit.	To explain: How to choose a suitable display unit which meets specifics requirements. How to dismantle the display unit. How to assemble the new display unit.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer display unit.
12 – 13	3.8 Describe how to replace the computer add-on cards.	To explain: How to choose a suitable add-on cards which meets specifics requirements. How to dismantle the old add-on cards. How to assemble the new add-on cards.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer add-on cards.

14	3.9 Describe how to replace the computer keyboard and mouse.	To explain: How to choose a suitable keyboard and mouse which meets specifics requirements. How to dismantle the old keyboard and mouse. How to assemble the new keyboard and mouse.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose an appropriate new PC case which matches the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer keyboard and mouse.
15	3.10 Describe how to replace the computer modems.	To explain: How to choose a suitable modems which meets specifics requirements. How to dismantle the old modems. How to assemble the new modems	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Choose appropriate new PC cases which match the new requirements. • Assemble and disassemble personal computers.	To provide advise and assistance on choosing computer case. To provide advise and assistance on Assemble and disassemble a personal computers.	Access to a variety of computer components Internet access to obtain the latest information on hardware and software upgrade. Sample of different computer modems.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 112)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: UPGRADING AND REPAIRING PCS 17TH EDITION
AUTHOR/PUBLISHER: SCOTT MUELLER/WILEY, JOHN & SONS, INC.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **COMPUTER SYSTEMS TROUBLESHOOTING**				***COURSE CODE:*** **CSE 122**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EQUIP STUDENTS WITH SKILLS NEEDED IN PC TROUBLE SHOOTING**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE PROCESS OF FAULT DIAGNOSIS.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Explain the power on self test. 1.2 Describe power fault diagnosis.	To explain : How to complete a fault report form The visible and audible codes. How to check the motherboard and other PC components power supply connections.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Complete the fault report form. • Specify the POST error Messages. • Check the motherboard and other PC components power supply.	To help student: To complete the fault report form. Specify the POST error Messages Check the motherboard and other PC components power supply.	Personal computer loaded with diagnostics packages.
2	1.3 Explain the use of different software diagnostic tests for hardware.	To explain: How to use a verity of software diagnostic test.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	• Apply Software diagnostic packages to test hardware.	To help student how to use diagnostic packages.	Personal computer loaded with diagnostics packages.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE CAUSES OF COMPUTER START UP FAILURE**					
3 – 5	1.4 Identify the causes of start up failure in systems	To explain: Why the display is on but several beeps heard. Why no beeps were heard, but the POST runs and the system starts up normally with faults. How to take note off the	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Identify and name the type of the faults from hearing the beeps. • Identify the type of faults from the error messages. • Remedy the fault by taking appropriate hardware/software	To help the student to : Identify and name the type of the faults from hearing the beeps. Identify the type of faults from the error messages. Remedy the fault by taking appropriate	Personal computer loaded with diagnostics packages.

		fault message from the screen. Why the power LED is on but nothing else happened. Why the system does not switch on.		repair and /or re-instalment.	hardware/software repair and /or re-instalment.	
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND MEMORY FAILURE SYMPTOMS**					
6	3.1 Identify the cause of memory failure.	To explain: How to recognise POST error message code as memory failure. Memory failure remedy.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to : • Recognise POST error message code as an indication of a memory problem. • Rectify the memory problem by reinsertion or replacement.	To help student to : Recognise POST error message code as an indication of a memory problem. Rectify the memory problem by reinsertion or replacement.	Personal computer loaded with diagnostics packages.
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND HARD DRIVE FAILURE SYMPTOMS**					
7	4.1 State the function of hard drive 4.2 Identify the cause of hard drive failure.	To explain: How to use scandisk software to detect hard drive problems such as: Slow disk access and failure to read from hard drive.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Recognise POST error message code as an indication of a hard drive problem. • Rectify the hard drive problem by replacement and/or reformatting.	To help student to : Recognise POST error message code as an indication of a hard drive problem. Rectify the hard drive problem by replacement and/or reformatting	Personal computer loaded with diagnostics packages.
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND FLOPPY DRIVE AND CD-ROM FAILURE/SYMPTOMS**					
8 – 9	5.1 Identify the cause of floppy drive failure. 5.2 Identify the cause of CD-ROM drive failure.	To explain: How to use scandisk software to detect floppy drive problems such as: Slow disk access and	PC connected to an OHP. Power Point presentation of Lectures.	The ability to: • Recognise POST error message code as an indication of a floppy drive and CD-ROM problem.	To help student to : Recognise POST error message code as an indication of a floppy drive problem.	Personal computer loaded with diagnostics packages.

		failure to read from floppy disk. How to recognise POST error message code as CD-ROM failure Why data cannot be accessed from the CD-ROM drive. Why the CD-ROM drive is not registered.	On line lecture notes. Smart/White board	• Rectify the floppy drive and CD-ROM problem by replacement and/or reformatting.	Rectify the floppy drive problem by replacement and/or reformatting	
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND MOUSE AND KEYBOARD FAILURE SYMPTOMS**					
10 – 11	7.1 State the function of keyboard and mouse 7.2 Identify the causes of mouse and keyboard failure.	To explain: Why the mouse/keyboard are not recognise in window. Why the cursor may be difficult to move. Why the cursor movements may be jerky. Why some keys may not function properly.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Recognise POST error message code as an indication of a mouse/keyboard problem. • Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.	To help students to: Recognise POST error message code as an indication of a mouse/keyboard problem. Rectify the mouse/keyboard problem by replacement and/or cleaning and part replacement.	Personal computer loaded with diagnostics packages
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND DISPLAY SYSTEM FAILURE SYMPTOMS**					
12 – 13	8.1 Explain display system in computers 8.2 Identify the causes of display system failure.	To explain: How to test the monitor connections. How to test monitor power supply. How to test a video card and reseat to check its	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Recognise POST error message code as an indication of a display/graphic card problem. • Rectify the display/graphic card problem by replacement	To help student to: Recognise POST error message code as an indication of a display/graphic card problem. Rectify the display/graphic card problem by	Personal computer loaded with diagnostics packages

		functionality again. How to replace the video card. How to replace the motherboard if the video card is embedded in the motherboard. How to check : Windows display properties. Display adaptor in device manager.		and/or part replacement.	replacement and/or part replacement.	
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND SOUND FAILURE SYMPTOMS**					
14 – 15	9.1 Explain sound system and its functions 9.2 Identify the causes of sound system failure.	To explain how to check: Windows volume control. Device conflicts in device manager. Speaker. And reseat the sound card. And replace the sound card. And replace the motherboard for embedded sound chips.	PC connected to an OHP. Power Point presentation of Lectures. On line lecture notes. Smart/White board	The ability to: • Recognise POST error message code as an indication of a sound card problem. • Rectify the sound card problem by replacement and/or part replacement.	To help students to: Recognise POST error message code as an indication of a sound card problem. Rectify the sound card problem by replacement and/or part replacement	Personal computer loaded with diagnostics packages

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 122)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: COMPUTER REPAIR WITH DIAGNOSTIC FLOWCHART: TROUBLESHOOTING, PC HARDWARE PROBLEMS FROM BOOT FAILURE TO POOR PERFORMANCE.

AUTHOR/PUBLISHER: MORRIS ROSENTHAL/FONER BOOKS

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **COMPUTER AND SOCIETY**				***COURSE CODE:*** **CSE 132**	***CONTACT HOURS:*** **2 – 0 – 1**	
GOAL: **TO UNDERSTAND THE IMPACT OF COMPUTER ON THE SOCIETY**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE IMPACTS OF COMPUTER IN OUR SOCIETY.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Explain the purpose of Computer in Society	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the purpose of Computer in Society	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed
2	1.2 Explain the importance of Computers in Education.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computers in Education.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed
3	1.3 Explain the importance of Computer in manufacturing industries.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computer in manufacturing industries.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed

4	1.4 Explain the importance of Computers in Business, Banking and Finance	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computers in Business, Banking and Finance	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed
5	1.5 Explain the importance of Computers in Transport.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computers in Transport.	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed
6	1.6 Explain the importance of Computers in legal forms	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computers in legal forms	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed

7	1.7 Explain the importance of Computers in Tourism	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed	• Explain the importance of Computers in Tourism	TO: Inform students of the nature of the course and modalities for implementation Present seminar on some current topics and also invite other resource persons	Classroom flip charts, Board PC with Power point presentation software installed
8 – 15	1.8 Present seminar on computer/ software packages	Collect topics from students and approve appropriately Arrange the students/sessions for the student's presentations.	Classroom flip charts, Board PC with Power point presentation software installed	• 1.8 Present seminar on computer/ software packages	Collect topics from students and approve appropriately Arrange the students/sessions for the student's presentations.	Classroom flip charts, Board PC with Power point presentation software installed

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 132)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 2 progress tests for feed back.	10
Practical/Assignment	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR/PUBLISHER: WILLIAMS, SAWYER, HUTCHINSON/IRWIN MCGRAW-HILL.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **BASIC HARDWARE MAINTENANCE**				***COURSE CODE:*** **CSE 142**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EQUIP STUDENTS KNOWLEDGE TOOLS AND PRACTICAL EXPERIENCE NEEDED TO PERFORM HARD WARE MAINTENANCE**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **COMPREHENSION OF BASIC ELECTRIC THEORY**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 2	1.1 State Ohm's law 1.2 Analysis the principles of Ohm's law using circuit diagrams 1.3 State Kerchof's law and Thevenin theory. 1.4 Analysis 1.3 above using circuit diagrams	To explain: Voltage, Current, sources Ohm's Law Kerchof's laws Thevenin theory.	White board. OHP connected to a PC. Loaded with an appropriate simulation package such as Electronic work bench.	• Apply a Voltage /current source in a circuit, and to test and verify the electric theory.	To assist student in setting up small circuits to verify the basic electric theory, using either hardware or simulated packages.	Voltage source, various measuring devices, PC loaded with a simulation package. Function boards connected to a PC.
Week	***GENERAL OBJECTIVE 2*****: UNDERSTAND THE FUNCTION OF CIRCUIT COMPONENTS.**					
3 – 4	2.1 Identify the function of circuit components 2.2 Explain the application of passive circuit components 2.3 Explain the application of active circuit components.	To explain: The functions, ratings and application of passive circuit components. The functions, rating and applications of active circuit components.	White board. OHP connected to a PC. Loaded with an appropriate simulation package such as Electronic work bench.	• Test active and passive circuits	To assist student in setting up small circuits to test circuit components of passive and active components.	Voltage source, various measuring devices, PC loaded with a simulation package. Function boards connected to a PC.
Week	***GENERAL OBJECTIVE 3*****: TO BE ABLE TO USE BASIC GENERAL MEASURING EQUIPMENTS**					
5 – 6	3.1 Identify the operations and principles of basic measuring instruments. 3.2 Explain the operation of maintenance tools such as multimetres, oscilloscopes and signal generators. 3.3 Explain how to use maintenance tools to	To introduce and explain the operation of maintenance tools such as, Multimeters, Oscilloscopes. To explain how to use multimeters to measure current voltage, resistance, inductance, capacitance.	White board. OHP connected to a PC. Loaded with an appropriate simulation package such as Electronic work bench Oscilloscope with	• Apply basic measuring equipments to perform fault diagnostics and maintenance of electrical and electronic circuits.	To assist student in using basic measuring devices to perform fault diagnostics and parameter measurements and perform repairs and maintenance of electrical and electronic circuits.	Voltage source, various measuring devices, PC loaded with a simulation package. Function boards connected to a PC.

	measure current, voltage, resistance, inductance and frequency. 3.4 Explain how diagnostic operations are performed in fault-finding	To explain how an Oscilloscope is used to observe signals, pulses, To explain how diagnostic operations are performed in fault finding.	projection facilities.			
Week	***GENERAL OBJECTIVE 4*: TO UNDERSTAND INTEGRATED CIRCUITS AND TERMINOLOGIES.**					
7 – 8	4.1 Describe Integrated Circuit and Terminologies 4.2 Explain terminologies for characterising logic circuits. 4.3 Explain different attributes of logic families.	To explain the Various terminologies for characterising logic circuits, such as fan out, fan in, noise margin, Voltage tolerance, etc. State different attributes of logic families, such as Handling care, voltage tolerance, switching speeds, etc To show some IC pin arrangement such as dual-in-line DI2, strait line, circular, quad, etc	White board. OHP connected to a PC. Loaded with an appropriate simulation package such as Electronic work bench with projection facilities. Data sheets of Ics various slides in electronic format to be projected.	• Apply basic measuring equipments to perform fault diagnostics and maintenance of electrical and electronic circuit	To assist the student to perform measuring tasks, perform diagnostic operations, and maintenance.	Voltage source, various measuring devices, PC loaded with a simulation package. Function boards connected to a PC. Various IC and discrete components.
Week	***GENERAL OBJECTIVE 5*: UNDERSTAND PREVENTATIVE MAINTENANCE OF HARDWARE COMPONENTS.**					
9 – 10	5.1 Explain the importance of preventive measures in system maintenance and Hardware care. 5.2 Explain the properties of drives. 5.3 State the steps in dust prevention procedures.	To explain : The use of maintenance log book. The importance of preventative maintenance applied to hardware. The properties of drives, such as head alignment, clearance, characteristics….etc.	PC connected to an HP projector, White board, Electronic slides showing system components and maintenance routing being performed. Audio Visual	• Perform preventive system maintenance.	To assist student in taking part in preventative system maintenance.	Various systems and systems Component to be used as examples.

		The steps in dust prevention procedures. How to carry out routine cleaning	programs showing the process.			
Week	***GENERAL OBJECTIVE 6*: UNDERSTAND DIAGNOSTIC TECHNIQUES INVOLVED IN CORRECTIVE MAINTENANCE.**					
11 – 12	6.1 Explain the procedures to repair and restore hardware functionality. 6.2 Explain the methods of testing integrated circuits (IC). 6.3 Explain the importance of diagnostic programs.	To explain : Trouble-shooting methodology The methods of testing IC with appropriate tools. The need for diagnostic programs. E.g. partition checks, virus detectors, file allocation tables checkers, etc. How to use diagnostic programs in restoring system functionality.	PC connected to an HP projector, White board, Audio Visual programs showing the process.	• Perform system repair and restoration of hardware functionality.	To assist student in carrying out system repair and restoration of hardware/software functionality.	PC and various diagnostic tools/ hardware and software.
Week	***GENERAL OBJECTIVE 7*:UNDERSTAND SYSTEM INSTALLATION PROCEDURE**					
13 – 15	7.1 Explain the background and procedures needed for system installation. 7.2 State the requirement for equipment inventory. 7.3 Explain modular testing procedures. 7.4 State the advantages of modular testing procedures.	To explain : Site preparation methods The requirements for equipment inventory. Modular testing procedures and its advantages. How to use installation manuals The pre=installation checks of a computer system. E.g. electric voltages(220 vs. 110 Volts, physical connections,	PC connected to an HP projector, White board, Audio Visual programs showing the installation process.	• Configure systems and test its functionality.	To assist student in carrying out system installation and testing its functionality.	PC components for hardware installation. Software installation packs and relevant manuals for system installation.

		etc				

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 142)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Practical	Work carried out in the Lab	70
Test	Appropriate No of assignment set by the teacher.	10
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: COMPUTER REPAIR WITH DIAGNOSTIC FLOWCHART
AUTHOR/PUBLISHER: MORRIS ROSENTHAL/FONER BOOKS

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **SYSTEM ANALYSIS AND DESIGN**				***COURSE CODE:*** **CSE 152**	***CONTACT HOURS:*** **1 – 0 – 2**	
GOAL: **TO ENABLE STUDENTS ACQUIRE BASIC KNOWLEDGE IN SYSTEM ANALYSIS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1**: UNDERSTAND THE SYSTEM CONCEPTS**			**GENERAL OBJECTIVE:**		
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define a system and its basic features. 1.2 Recognize manual and automated systems. 1.3 Distinguish between manual and automated systems.	To Explain: System and its basic features. System classifications: automated, manual, To distinguish between manual and automated system. To list examples of manual and automated systems.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Recognize basic features of a system. • Identify differences between manual and automated system.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.
Week	***GENERAL OBJECTIVE 2:*** **KNOW THE STAGES OF SYSTEM ANALYSIS**					
2	2.1 Explain Systems analysis and logical stages of systems development. 2.2 List systems development process, planning, control and coordination	Explain: The logical stages of systems The development, initiation and preliminary survey, feasibility. The Study, investigation, analysis, design, programming, implementation, evaluation and maintenance. To explain: The system development process, planning, control and coordination.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Analyze a system. • Plan, coordinate and develop a system.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any other appropriate system analysis package.

Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE PROCESS AND BASIC GUIDELINES FOR WRITING FEASIBILITY STUDY.**					
3 – 4	3.1 Carry out feasibility study, its objectives, and major factors. 3.2 Explain features of feasibility study report. 3.3 Explain concept of Data flow diagram. 3.4 Analysis specification.	Explain feasibility study Explain the major factors to be considered in feasibility study Determine the objectives of the user of a feasibility study. The main features of a feasibility study report. To explain: The concept of Data flow Diagram (DFD) techniques To write analysis specification	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Set objectives and consider major factors of a system. • Perform feasibility studies • Provide data flow diagram • Provide system specifications.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND SYSTEMS IMPLEMENTATION PROCESS**					
5	5.1 Explain fact finding techniques 5.2 List ideal system selection Resources requirements of a system	To explain: Fact finding techniques. To select a system for development.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Carry out fact finding on a system. • Select an ideal system for a given set of requirements.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.
Week	***GENERAL OBJECTIVE 6:*** **UNDERSTAND SYSTEMS DESIGN**					
6	6.1 Explain System design 6.2 Explain System specification 6.3 Explain Program specification	To explain: systems design system specification To List the tools	Pc connected to an OHP Power Point Presentation of lecture notes.	Ability to: • Design a system according to a set system specification and to provide documentation for it.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any other appropriate

	6.4 Explain System documentation	used for systems specification To Explain program specification. To list the tools used for program specification. To explain: ems documentation (input, output, processing, access mode, etc) and standard.	Online lecture notes.			system analysis package.
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND DATA BASE DESIGN**					
7	7.1 Describe Database design 7.2 Explain The similarities and differences between conventional and database files 7.3 Explain The design of the structures of a database file	Explain: Data Base concept. The similarities and differences between conventional files and data base files. The goals and pre-requisites for a Data Base design To show: The design and structure of a simple Data Base file.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Design a data base. • Distinguish between different data base files. • Design a structured data base file.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any other appropriate system analysis package.
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND INPUT AND OUTPUT DESIGN**					
8	8.1 Describe Input to a system 8.2 List Methods used for data capture	To explain: The input to a system The methods used for data capture and input	Pc connected to an OHP Power Point Presentation of lecture notes.	Ability to: • Implement data capture on a system.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system

		The current trend in automatic Data collection technology. The Prototyping and design of computer inputs	Online lecture notes. Samples OMR/OCR forms, smart cads, magnetic, tapes, diskettes, and ruled papers.			analysis package.
9	8.3 Identify Current trends in automatic data collection technology. 8.4 Explain the concept of prototyping and design of computer inputs	To explain: The trends in automatic data collection Prototyping concept and its implementation.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	To implement: • Carry out Automatic data capture. • Carry out a prototype of a system.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND OUTPUT DESIGN**					
10	9.1 Explain the principles and guidelines of out put design 9.2 Explain the different types of outputs.	To explain: The principles and guidelines for out put design. To describe: The different types of output The output media and formats The prototyping and design of computer output	P.C. with different output devices, such as printers, plotters, and CRT display terminals	Ability to: • Handle data outputs and understand its significance.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any other appropriate system analysis package.
11	9.3 Describe output media and formats. 9.4 Explain the concept of prototyping and design of	To explain: Different output formats The process of system	Pc connected to an OHP Power Point Presentation of	Ability to: • Handle prototype system outputs.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package,

	computer output.	prototyping.	lecture notes. Online lecture notes.	• Implement different output design for different media.		Or any other appropriate system analysis package
Week	***GENERAL OBJECTIVE 10:*** **UNDERSTAND SYSTEM IMPLEMENTATION**					
12 – 13	10.1 Describe system implementation 10.2 Describe how to generate test data 10.3 Explain the importance of data bank 10.4 Explain the process of hardware and software installation. 10.5 List the methods used in system testing	To explain: systems implementation How to generate test data To explain: The need for data bank program installation System software installation. System installation both hardware and software. How to test a system and perform fault diagnosis.	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Implement a system based on a set of specifications. • Perform hardware and software system installation. • Perform testing.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.
Week	***GENERAL OBJECTIVE 11:*** **UNDERSTAND SYSTEMS EVALUATION PROCESS**					
14	11.1 List the methods used in system evaluating, amendments and cost analysis. 11.2 Explain the importance of system evaluation. 11.3 Explain the following: • Program amendment request • System amendment	To Define: system evaluation To explain: The need for system evaluation The program amendment request. System amendment	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Perform system evaluation and cost analysis.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.

	request 11.4 Explain the following: • Performance variation • System cost components and analysis.	To design: Amendment request form. To explain: Performance variation Systems cost components System cost analysis				
Week	***GENERAL OBJECTIVE 12:*** **UNDERSTAND SYSTEMS MAINTENANCE PROCESS**					
15	12.1 Explain the concepts of systems maintenance and standards. 12.2 Explain the importance of system maintenance 12.3 Explain user's role in system maintenance 12.4 State various system standards	To define systems maintenance To describe: The need for systems maintenance To state Systems standard To explain users role in systems maintenance	Pc connected to an OHP Power Point Presentation of lecture notes. Online lecture notes.	Ability to: • Maintain systems and standards.	To assist students in their practical work.	Networked PC lab Internet connection SSADM package, Or any appropriate system analysis package.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 152)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	30
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher	50
Assignment	To be assessed by the teacher	10
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: SYSTEM ANALYSIS & DESIGN METHODS
AUTHOR/PUBLISHER: JEFFREY L. WHITTEN, LONNIE D. BENTLEY/MCGRAW-HILL COMPANIES

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **STUDENTS INDUSTRIAL ATTACHMENT**				***COURSE CODE:*** **CSE 162**	***CONTACT HOURS:*** **0 – 0 – 4**	
GOAL: **TO ENABLE STUDENTS ACQUIRE BASIC KNOWLEDGE IN SYSTEM ANALYSIS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1**: UNDERSTAND THE OBJECTIVES AND STRUCTURE OF ORGANIZATION**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 3				• List the objectives of the organization. • Draw the organizational chart/organogram of the company. • Maintain cordial relationship with the members of staff. • Make safe and adequate use of equipment, instruments, tools and materials. • Record and maintain a log-book for day-to-day activities.	Supervise the students on regular bi-weekly basis to check log-book in accordance with the expectations here. Request and mark reports. Grade report and submit to Industrial Attachment (IA) officer	Personnel and Human resources department Log Book for recording activities carried out.
Week	**GENERAL OBJECTIVE 2: IDENTIFY COMPUTER TOOLS AND USE THEM APPROPRIATELY.**					
4 – 7				• Identify various tools and use them. • Identify software tools and use them appropriately. • Identify hardware tools and use them. • Observe safety precautions in the use of computer tools.	Supervise the students regularly. Check log-book and reports. Grade report and submit to Industrial Attachment (IA) officer	Various software and hardware tools Log Book for recording activities carried out.

				• Care for and maintain software and hardware tools		
Week	**GENERAL OBJECTIVE 3: CHOOSE OR SELECT TOOLS FOR VARIOUS TASKS**					
8 – 11				• Select the correct types of tools for various tasks. • Select the suitable software for programs • Determine characteristics of software and hardware components	Supervise the students regularly. Check log-book and reports. Grade report and submit to Industrial Attachment (IA) officer	Various software and hardware tools Log Book for recording activities carried out.
Week	**GENERAL OBJECTIVE 4: IDENTIFY AND SELECT SUITABLE SOFTWARE PROGRAMS FOR SPECIFIC TASKS**					
12 – 15				• Identify practically various software programs • Select appropriate software and programs for specific tasks.	Supervise the students regularly. Check log-book and reports. Grade report and submit to Industrial Attachment (IA) officer	Various software and hardware tools Log Book for recording activities carried out.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 162)	WEIGHTING (%)
Industrial Attachment	To be assessed by Supervisor and Industrial Attachment officer	100
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **CALCULUS**				***COURSE CODE:*** **MTH 102**	***CONTACT HOURS:*** **2 – 1 – 0**	
GOAL: **TO ACQUAINT STUDENTS WITH KNOWLEDGE OF DIFFERENTIATION AND INTEGRATION AND THEIR APPLICATIONS**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE BASIC CONCEPTS OF DIFFERENTIAL CALCULUS AND THEIR APPLICATION IN SOLVING ENGINEERING PROBLEMS.**					
Week	**Specific Learning Outcome**	**Teachers Activities**	**Resources**	**Specific Learning Outcome**	**Teachers Activities**	**Resources**
1 – 4	1.1 Define limits with examples. 1.2 State and prove basic theorems on limits. 1.3 Prove that lim sin Φ/Φ, lim Tan Φ/Φ = 1 as Φ→0. 1.4 Define differentiation as an incremental notation or a function. 1.5 Differentiate a function from first principles 1.6 Prove the formulae for derivative of functions, Function of a function, products, and quotient of functions. 1.7 Differentiate simple algebraic, trigonometric, logarithmic, exponential, hyperbolic parametric, inverse and implicit functions.	Teachers are to give and solve simple engineering and technological problems	Chalkboard, textbooks, lecture notes, chalk, calculator.			

	1.8 Derive second derivative of a function. 1.9 Apply differentiation to simple engineering and technological problems. 1.10 Explain the rate of change of a function 1.11 Explain the condition for turning point of a function. 1.12 Distinguish between maximum and minimum value of a function. 1.13 Sketch the graph of a function showing its maximum and minimum points and points of inflexion. 1.14 Estimate error quantities from the small increment of a function. 1.15 Determine the tangent to a curve. 1.16 Determine the normal to a curve.					
Week	***GENERAL OBJECTIVE 2:*** **KNOW INTEGRATION AS THE REVERSE OF DIFFERENTIATION AND ITS APPLICATION TO ENGINEERING PROBLEMS**					
5 – 8	2.1 Define integration as the reverse of differentiation.	Ask students to apply integral calculus to simple function	Chalkboard, textbooks, lecture notes, chalk,			

	2.2 Explain integration as a limit of summation of a function. 2.3 Distinguish between indefinite and definite integrals. 2.4 Determine the indefinite and definite integrals. 2.5 Determine the definite integral of a function. 2.6 Integrate algebraic, logarithmic, trigonometric and exponential simple functions. 2.10 List possible methods of integration. 2.11 Integrate algebraic and trigonometric functions by substitution method. 2.12 Integrate trigonometric and exponential functions by parts. 2.13 Integrate algebraic functions by partial fraction. 2.14 Integrate trigonometric and logarithmic		calculator.			

	functions applying reduction formula. 2.15 State standard forms of some basic integrals. 2.16 Calculate length of arc, area under a curve, area between two curves, volume of revolution, centre of gravity, centre of surface area, second moment and moment of inertia. 2.17 Define Trapezoidal and Simpson's rule as methods of approximating areas under given curves. 2.18 Find approximate area under a curve applying Trapezoidal method. 2.19 Find approximate area under a curve applying Simpson's rule. 2.20 Compare result obtained from Trapezoidal and 2.7 Simpson's rules with the results by direct integration. 2.8 2.18 Apply integration to kinematics.					

Week	*GENERAL OBJECTIVE 3*: UNDERSTAND FIRST ORDER HOMOGENOUS LINEAR ORDINARY EQUATIONS WITH CONSTANT COEFFICIENTS AS APPLIED TO SIMPLE ENGINEERING PROBLEMS					
9 – 12	3.1 Define first order differential equation 3.2 List order, degree, general solution, boundary or initial conditions and particular solution of differential equations. 3.3 List examples of various types of first order differential equations. 3.4 Define first order homogenous differential equations 3.5 List the methods of solving differential equations by separable variables. 3.6 Identify differential equations reducible to the homogenous form. 3.7 Explain exact differential equations. 3.8 Solve exact differential equations, e.g. (a) Show that $(3x^2 + y \cos x) dx+(\sin x-4y^3) dy = O$ is	Ask students to apply differential equation to solve engineering problems.	Chalkboard, textbooks, lecture notes, chalk, calculator.			

	an exact differential equation. (b) Find its general solution. 3.9 Define integrating factors. 3.10 Determine the solution of differential equations using integrating factors. 3.11 Define linear differential equations of the first order.					
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE BASIC CONCEPTS OF PARTIAL DIFFERENTIATION AND APPLY SAME TO ENGINEERING PROBLEMS**					
13 – 15	4.1 Define partial differentiation 4.2 List and explain the uses of partial derivatives. 4.3 Solve problems on partial differentiation. e.g. f (x, y) = $x^2 + y^2 = 2xy$ find dy/dx, dx/dy 4.4 Apply partial differentiation to engineering problems.	Solve problems on partial differential	Chalkboard, textbooks, lecture notes, chalk, calculator.			

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (MTH 102)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Assignment/course work	Work carried out in the Lab	20
Test	Appropriate No of assignment set by the teacher.	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES:

TITLE: FURTHER MATHEMATICS
AUTHOR/PUBLISHER: C. O. OROGE/CLEMOL PUBLISHERS.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **ENGLISH LANGUAGE AND COMMUNICATION II**				***COURSE CODE:*** **GNS 111**	***CONTACT HOURS:*** **1 – 1 – 0**	
GOAL: **TO ACQUIRE KNOWLEDGE AND SKILLS IN COMMUNICATION**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
GENERAL OBJECTIVE 1: **DEVELOP APPROPRIATE STUDY SKILLS USING ENGLISH LANGUAGE**						
Week	**Specific Learning Outcomes**	**Teacher's Activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's Activities**	**Resources**
1	1.1 Explain the concepts of phrase and clause.	Define the terms phrase in and "Clause" and explain their various types.	Passages from relevant source books	• Identify structural and functional phrases and clauses.	Guide students in the identification.	Phrases and clauses from relevant source books.
2	1.2 Explain the definition of the sentence.	Define the sentence and remind the various types.	Passages from relevant source books	• Identify structural and functional sentences.	Guide the students in the process.	Sentences from source books.
Week	***GENERAL OBJECTIVE 2:*** **KNOW HOW TO WRITE GOOD ESSAYS, REPORTS, AND ARTICLES.**					
3	2.1 List the different types of essay and identify the features of each type.	List and explain the different types, and features of each type of essay.	Model essays, literature, etc Handouts	• Generate relevant information on a given topic. • Draw up a good outline. • Write a good essay on a given topic.	Assign topics and evaluate students work.	Handouts
4	2.2 Describe a report; its types, uses and Characteristics	Define a report and list types. Enumerate uses and characteristics of a good report.	Model of good reports.	• Write a report.	Evaluate the report.	Handouts
5	2.3 Identify the techniques for writing articles.	Explain techniques for writing articles.	Model essays and articles. Handouts	• Write good articles for publication.	Evaluate and analyze published essays..	Newspapers Journals Magazines
Week	***GENERAL OBJECTIVE 3:*** **COMPREHEND THE DIFFERENCE BETWEEN DENOTATIVE AND CONNOTATIVE USE OF WORDS.**					
6	3.1 Explain the term denotation.	Explain the term denotation.	Groups of synonyms from source books.	• Identify words used denotatively. • Apply words denotatively.	Compare denotative and connotative usage in group of synonyms e.g. woman, lady, female, client, customer, patient, fear, terror, dread, etc.	Groups of synonyms from source books.
7	3.2 Explain the term connotative.	Explain the term connotation.	Groups of synonyms from	• Identify words used connotatively.	Guide students and evaluate their work.	Handouts

			source books.	• Apply words connotatively.		
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE TECHNIQUES OF COMPREHENSION AND SUMMARY WRITING.**					
8	4.1 Give contextual explanations to statement from a text. 4.2 Describe summary writing types and steps in writing them.	Explain the techniques answering questions on comprehension at a higher level of difficulty. Explain and illustrate summary writing, types, and steps in writing them.	Comprehension passages. Passages from source books.	• Write comprehension passages at a higher level of difficulty. • Write, within a specified length, a good summary of a given passage.	Guide and grade students work. .	
9	4.3 Identify colloquialism, slangs and jargons.	Explain and illustrate colloquialisms, slangs and jargons.	Passages from relevant sources.	• State appropriate use of jargons.	Guide students.	
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND REGISTERS.**					
10	5.1 Understand registers.	Explain registers and factors influencing them viz field, mode, tenor.	Passages from source books.	• Identify items of register in a given passage. • List items of register in a given passage.	Guide and evaluate students' work.	Textbooks, workbooks.
Week	***GENERAL OBJECTIVE 6:*** **UNDERSTAND THE PRINCIPLES OF CORRESPONDENCE.**					
11 – 15	6.1 Recognise the different types of business letters.	Describe and illustrate the different types of business letters e.g. applications enquiry, invitation, complaints, and their replies.	Model business letters.	• Write business letters.		
	6.2 Apply suitable language for business letters.	Explain suitable language for specific types of business letter.	Handouts	• Write business letters.	Guide and grade students' work.	Handouts Example of generic business letters

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (GNS 111)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 2 progress tests for feed back.	20
Course Work	At least 5 home works to be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

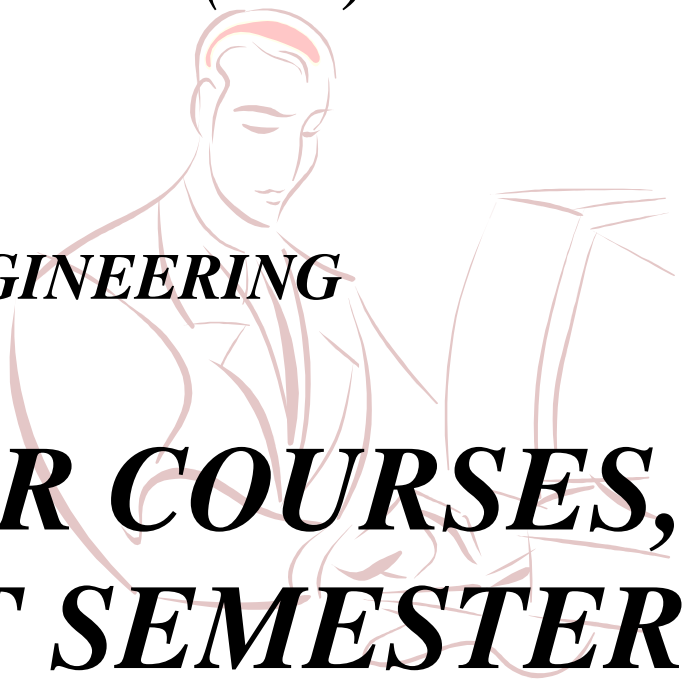
TITLE: ENGLISH GRAMMAR FOR SCHOOLS AND COLLEGES
AUTHOR/PUBLISHER: GBENGA FAKUADE/PARACLETE PUBLISHERS

TITLE: REAL WRITING WITH READING
AUTHOR/PUBLISHER: SUSAN ANKER/BED FORD/ST. MARTIN'S

NATIONAL INNOVATION DIPLOMA (NID)

IN

COMPUTER SOFTWARE ENGINEERING



SECOND YEAR COURSES, FIRST SEMESTER

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **PROGRAMMING CONCEPTS**				***COURSE CODE:*** **CSE 201**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO FAMILIARISE THE STUDENT WITH BASIC PROCEDURES IN PROGRAMMING**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **TO UNDERSTAND THE GENERAL CONCEPTS OF SYSTEMS PROGRAMMING.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 3	1.1 Explain the concept of system programming 1.2 Identify the differences between systems programs and application programs. 1.3 Identify the differences between Assembler and operating systems. 1.4 Describe the meaning and work of 1-pass and 2-pass assembler.	To: Define systems programming. Define Application Programming Differentiate between systems programs and application programs. List examples of systems and application programs Define Assembler r and operating systems. Define the work of 1-pass assembler. Define the work of 2-pass assembler.	A flip chart. OHP connected to a personal computer loaded with assembler and application programs	• Open source assembly language and application programs in the computers	To assist students to view a source assembly language and application programs in the computers	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND ASSEMBLER AND ASSEMBLY PROCESSES**					
4 – 6	2.1 Explain the general format of an Assembly program statement. 2.2 Identify the purpose of each field of assembly language statement. 2.3 Explain the meaning of symbolic operations.	To: Describe the general format of an Assembly (language program statement. (Label, opcode, Address, correct) Explain the purpose of each field of assembly language statement.	A flip chart. OHP connected to a personal computer loaded with assembler and application program	• Write a simple assembly language program using the general format.	To assist students in writing simple assembly language program using the general format.	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet

		List some examples and uses of operation code List examples of symbolic operations.				
Week	**GENERAL OBJECTIVE 3: UNDERSTAND THE COMPILATION PROCESS.**					
7	3.1 Identify the meaning of translation compilation and interpretation. 3.2 List the stages of translation.	Define translation: Compilation and interpretation. Describe multi-pass and single-pass compilation. Explain the load and go process. Explain interpretation Differentiate between interpretation and compilation Define tokens and delimiters Describe the scanning process Explain sentence recognition Describe types of tables generated in the process of compilation e.g. inter table, symbol table, etc. Explain code generation and code optimization.	A flip chart. OHP connected to a personal computer loaded with assembler and application program	• Write and compile a simple assembly language program and handle the errors	To assist the students in writing and compiling a simple assembly language program and handle the errors	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet

		Describe error Handling				
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE USE OF UTILITIES AND LIBRARIES.**					
8 – 9	4.1 Explain the meaning and uses of utilities and libraries. 4.2 Describe the relationship between utilities and libraries	TO: Explain utilities List example of utilities List uses of simple utilities Describe libraries List examples and uses of libraries Relate utilities to library Implement Library and utilities programs.	A flip chart. OHP connected to a personal computer loaded with assembler and application program	• Write and compile simple libraries and utilities assembly language program.	To be able to write and compile simple libraries and utilities assembly language program.	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE FUNCTIONS OF OPERATING SYSTEM.**					
10 – 12	5.1 Trace the historical development of operating systems. 5.2 List the importance and uses of operating systems 5.3 Explain System batch processing, multiprogramming; multiprocessing, time-sharing. 5.4 Describe Batch, real-time, time sharing and network operating system 5.5 Define the system	To: Outline the historical development of operating systems. Describe operating systems Explain importance and uses of operating System. List examples of operating on micro and main frame. Explain batch processing, multiprogramming;	A flip chart. OHP connected to a personal computer loaded with assembler and application program	• Run a program in different operating system such as unix and windows	To assist students to run program in different operating system such as unix and windows	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet

	commands of MS-DOS, Unix, Windows operating systems.	multiprocessing, time-sharing. List example of batch, real-time, time sharing and network operating system State the system commands of MS, DOS Unix, Windows operating system				
Week	**GENERAL OBJECTIVE 6: UNDERSTAND INPUT/OUTPUT (I/O) DEVICE HANDLERS.**					
13 – 15	6.1 List the process of handling1/0 6.2 Explain the concept of interrupts s and traps. 6.3 Explain Interrupt handling process. 6.4 Explain the operation of pooling 6.5 Explain the CPU activity in interrupt mode and pooling and the CPU status.	To: Explain the process of handling1/0 Explain the concept of interrupts and traps. Explain interrupt handling process. Explain the operation of pooling Explain the CPU activity in interrupt mode and pooling and note the CPU status.	A flip chart. OHP connected to a personal computer loaded with assembler and application program	• Write and run a simple interrupt program using assembly language	To assist student to write and run a simple interrupt program using assembly language	Personal computers loaded with assembler and application programs in a networked laboratory connected to internet

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 201)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	20
Practical	To be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: SYSTEM SOFTWARE: AN INTRODUCTION TO SYSTEMS PROGRAMMING
AUTHOR/PUBLISHER: EJAME STROUSTRUP/ADDISON WESLEY

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **COMPUTER PROGRAMMING USING VISUAL BASIC (VB.NET)**				***COURSE CODE:*** **CSE 211**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EQUIP STUDENT WITH SKILLS NEEDED FOR PROGRAMMING USING OO BASIC**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE INTEGRATED DEVELOPMENT ENVIRONMENT**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Describe The Integrated Development Environment (IDE) 1.2 Describe Project window 1.3 Describe Toolbox 1.4 Describe Form layout window 1.5 Describe Properties window 1.6 Explain Menu and toolbars	Describe: The Integrated Development Environment (IDE) Project Window Toolbox Form layout window Properties window Menu and toolbars	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Identify IDE, Project window, Toolbox, Form layout, Properties window, Menu and toolbars.	Guide students to Identify IDE, Project Window, Toolbox, Form Layout, Properties window, Menu and toolbars	Networked PC's loaded with OO Visual Basic, and a compiler
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE VISUAL BASIC PROGRAMMING CONCEPT.**					
2 – 3	2.1 Define Visual programming 2.2 Describe Event-Driving Programming. 2.3 Explain VB character set 2.4 List Data types 2.5 Explain Data type conversion 2.6 List The various types of variables	Be able to discuss: Visual programming Event-Driving Programming. VB character set Data types Data type conversion The various types of variables	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Identify VB character set • Apply data types and Variable names • Write simple program to store and retrieve data	Guide students to identify VB character set. Demonstrate the use of data types and Variable names. Write simple program to store and retrieve data	Networked PC's loaded with OO Visual Basic, and a compiler

	2.7 List the rules for forming variable names. 2.8 Explain Declaration of variables 2.9 Explain Storing and retrieving data in a variable.	The rules for forming variable names. Declaration of variables Storing and retrieving data in a variable.				
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND STATEMENTS, OPERATORS, AND EXPRESSIONS AND OBJECT VARIABLES.**					
4 – 5	3.1 Explain Visual Basic Statements, Operators, Expressions, and Object variables 3.2 Explain Object variable declaration 3.3 Explain Scope of variable 3.4 List Instances of an Object	Discuss: Operators and their various types Object data types Object variable declaration Scope of variable Instances of an object	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Apply operators, object data types and scope of variables • Write simple program.	Demonstrate how to use Operators Object data types Scope of variable Guide students on how to write simple program to implement the use of operators, object data type and scope of variable	Networked PC's loaded with OO Visual Basic, and a compiler
Week	***GENERAL OBJECTIVE 4:*** **KNOW CONTROL STATEMENTS IN OOP**					
7	5.1 Explain IF, ELSE, CASE, FOR, NEXT, WHILE, DO, DO, WHILE, DO, UNTIL, statements 5.2 Explain SWITCH function.	Discuss IF … THEN statement IF. THEN. ELSE statement SWITCH function CASE statement FOR.. NEXT statement	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Write programs using the various control statements.	Guide students on how to write program to implement the various control statements.	Networked PC's loaded with OO Visual Basic, and a compiler

		WHILE … DO statement DO … WHILE statement DO … UNTIL statement				
Week	***GENERAL OBJECTIVE 5:*** **KNOW THE USE OF PROCEDURE AND FUNCTIONS**					
8	5.1 Identify the scope of variables such as public, private, global and static. 5.2 List the different types of constants e.g. system defined. 5.3 Identify the scope of constants. 5.4 Explain the concept of circular referencing. 5.5 Explain the concept of procedure. 5.6 Explain User – defined functions 5.7 Explain how to define and call a function. 5.8 Explain how to define recursive procedures.	Discuss: The scope of variables such as public, private, global and static. The different types of constants e.g. system defined. The scope of constants. The concept of circular referencing. The concept of procedure. User's defined functions How to define and call a function. How to define recursive procedures.	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Write program using the various variable declaration and different types of constants. • Implement functions • Write recursive procedures	Guide students on how to write program to implement the various control statements.	Networked PC's loaded with OO Visual Basic, and a compiler
Week	***GENERAL OBJECTIVE6:*** **UNDERSTAND THE USE OF ARRAYS AND STRUCTURES.**					
9	6.1 Explain array declaration and subscript range. 6.2 Explain multiple array declaration.	The teacher explain array and when they are required in a program. He should demonstrate the multiple arrays using a	PC loaded with Visual BASIC, compiler and connected to OHP	• Write programs, using any static, global and dynamic array.	Guide students on how to write program to implement the various array declaration.	Networked PC's loaded with OO Visual Basic, and a compiler

	6.3 Explain static, global and dynamic array declaration. 6.4 Explain static and dynamic allocations.	practical problem. He should illustrate and explain with example static and dynamic array declaration. The teacher should give a practical test to use student.	Power Point Presentation of lecture notes. Online lecture notes.			
Week	***GENERAL OBJECTIVES 7:*** **UNDERSTAND HOW TO CREATE CLASSES AND OBJECTS.**					
10	7.1 Explain the constructors and destructors 7.2 Explain information guiding using private, public and protected. 7.3 Explain instances of class variables 7.4 Explain the creation of methods. 7.5 Demonstrate 7.1 – 9.4 above with a sample program.	The teacher should explain constructor and destructors and explain their role in the utilization of objects. He should explain the instances access and now it is done. Examples should be given by it. The teacher should explain methods and the procedure for creating it. The teacher should explain with a sample program.	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Write programs which use constructor and destructor. • Define instances of class variables?	Assist students on their practical work.	Networked PC's loaded with OO Visual Basic, and a compiler
Week	***GENERAL OBJECTIVES 8:*** **KNOW HOW TO CREATE AND MANIPULATE DATA FILES.**					
11 – 12	8.1 Describe the different types of Data files e.g. sequential, random, Binary. 8.2 Explain how to create the file types. 8.3 Explain how to read and write to the file type mentioned above.	The teacher should explain data kills, the sissies and purpose of each type. The teacher should explain demonstrate how to create data file. The teacher should also explain and write program to demonstrate how to read and write a file.	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Create files and operate on them.	To assist students in their practical work.	Networked PC's loaded with OO Visual Basic, and a compiler

	8.4 Demonstrate 8.1 – 8.3 above with a sample.	The teacher should explain and give procedural steps for creating, linking a database using codes, data control and data environment. The teacher should demonstrate and explain the importance of SQL in database access.				
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND DATABASE MANAGEMENT CONCEPT IN OO BASIC.**					
13	9.1 Explain Database 9.2 Describe the procedure for creating a Database 9.3 Describe the different ways of accessing a database e.g. codes, data control, and data environment. 9.4 Describe how to perform the following operations: adding, editing, updating, deleting and searching. 9.5 Explain the relevance of Structured Query Language (SQL)	The teacher should explain data kills, the The teacher should explain and give procedural steps for creating, linking a database using codes, data control and data environment. The teacher should demonstrate and explain the importance of SQL in database access.	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Create a database • Implement different ways of accessing, updating, adding, searching data items using SQL.	To assist students in their practical work	Networked PC's loaded with OO Visual Basic, and a compiler
Week	***GENERAL OBJECTIVE 10:*** **KNOW HOW TO DESIGN REPORT FORMAT.**					
14	10.1 Explain how to design a report format using data report object. 10.2 Describe how to retrieve	The teacher should explain and demonstrate with example how to create and use a report format.	PC loaded with Visual BASIC, compiler and connected to OHP	• Write report format using Data objects. • Retrieve outputs using data objects	Assist students in their practical work	Networked PC's loaded with OO Visual Basic, and a compiler

	output using the format in 10.1 above. 10.3 Demonstrate 10.1 above with a sample data.		Power Point Presentation of lecture notes. Online lecture notes.			
Week	***GENERAL OBJECTIVE 11:*** **UNDERSTAND DIALOGUE BOX CONCEPTS**					
15	11.1 State the different Dialogue boxes available e.g. message box, input box file/open dialogue box file/save dialogue Box, File/print Dialogue Box, etc. 11.2 Write a program to demonstrate the use of 13.1 above. 11.3 Revision	Should explain and demonstrate with example the available custom control and the use. The teacher should revise the course content. The teacher should complete revision.	PC loaded with Visual BASIC, compiler and connected to OHP Power Point Presentation of lecture notes. Online lecture notes.	• Write dialogue boxes	Assist students in their practical work.	Networked PC's loaded with OO Visual Basic, and a compiler

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 211)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Practical	Set and assessed by teacher	60
Assignment	Set by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: OBJECT – ORIENTED PROGRAMMING WITH VISUAL BASIC.NET
AUTHOR/PUBLISHER: MICHAEL MCMILLAN CAMBRIDGE UNIVERSITY PRESS

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **SYSTEM PROGRAMMING CONCEPT (C, C++)**				***COURSE CODE:*** **CSE 221**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: **TO EQUIP STUDENTS WITH PRACTICAL EXPERIENCES NEEDED TO PERFORM SYSTEM PROGRAMMING TASK**						
COURSE SPECIFICATION: **THEORETICAL CONTENTS:**				**PRACTICAL CONTENTS:**		
	GENERAL OBJECTIVE 1: **UNDERSTAND BASIC C LANGUAGE**			**GENERAL OBJECTIVE**		
Week	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**
1	1.1 State the characteristics of C. 1.2 State the advantages and disadvantages of C. 1.3 Define an Identifier. 1.4 List the different types of constraints and variables. 1.5 Describe variable declaration and definition. 1.6 State examples of pre-processor statements. 1.7 Describe operator precedence and Unary operators. 1.8 Describe precision printing 1.9 Describe how print F works.	Explain local and global variables, static variables. Explain basic arithmetic operations	PC loaded with C language and connected to over head projector.	• Create C Programs. • Create your First program in C. • Apply the use of Variables. • Apply the use of operators. • Apply values into the program Scan f function.	Assist to write programs in C.	PC loaded with C Language in a Networked Laboratory.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND CONTROL INSTRUCTIONS IN C.**					
2	2.1 Describe different types of control instruction. 2.2 Describe deletion or selection instruction.	Explain sequence, Loop case control instruction. Give examples of Array of Integers,	PC loaded with C Language and connected to OHP.	• Demonstrate ability to use control instructions, deletion or selection instruction. • Demonstrate ability to use Operators, Arrays and	Show the use of control instructions, operators, Arrays and Functions.	PC loaded with C Language in a networked Laboratory.

	2.3 Describe increment and decrement operators. 2.4 List types of Arrays and Functions.	Character Arrays and String Functions.		functions.		
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND MULTIDIMENSIONAL ARRAYS AND FUNCTIONS**					
3	3.1 Describe Array of Floating Point Data. 3.2 Describe Multidimensional Arrays. 3.3 List the components of Functions. 3.4 Describe scope of variables. 3.5 Define Prototyping 3.6 Describe Standard Function Libraries 3.7 Describe Pointer Basics.	Explain procedures for Initializing a two dimensional array. Explain Local function variables, Function arguments, User-defined functions, Call-by-Reference, Passing Values to a Function and The Return type of main ( ) Function Explain 3.4 – 3.7	PC loaded with C Language and connected to OHP.	• Demonstrate ability to use multidimensional arrays and Functions.	Show students how to apply multidimensional arrays and functions.	Networked PC loaded with C Language in a networked Laboratory.
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND MEMORY ADDRESSES**					
4	4.1 List C errors to avoid. 4.2 Describe the Features of Pointers. 4.3 Describe Command line arguments in C. 4.4 Describe the Operation and uses of Structures.	Explain Pointer types, array pointers String pointers to arranges, Function array of pointers, NULL pointers, Pointers to Pointers. Explain how structures work, uses of structures, structures Vocabulary, Declaring structure variable,	PC loader with C Language and connected to OHP Magic Board.	• Demonstrate ability to use pointers. • Use Command line arguments in C.	Show the use of Pointers	Networked Lab with PC loaded with C language.

		Accessing data fields.				
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND WORKING COMPLEX WITH DATA STRUCTURES**					
5	5.1 Describe array of Structures 5.2 Describe nested and named structures. 5.3 Define Unions. 5.4 Describe the Type Def.	Give examples of array of Structures. Give examples of Unions.	Magic Board PC loaded with C Language and connected to OHP.	• Demonstrate the use of Pointer and Structures. • Demonstrate the use of Structures to and from Functions. • Demonstrate the use of Pointers to Structures containing pointers. • Demonstrate the use of Pointer arithmetic. • Demonstrate the use of linking. • Show how to open a file • Show how to read, write and append to a file.	Assist students to carryout the task in 5.1 – 5.4	PC loaded with C Language in a networked laboratory.
Week	***GENERAL OBJECTIVE 6:*** **UNDERSTAND FILE OPERATIONS AND OUTPUT OPERATION**			***GENERAL OBJECTIVE 6:*** **APPLY THE PROCEDURES FOR WORKING WITH FILES.**		
6	6.1 Describe the stages of file Operations. 6.2 Describe the stages of output operation.	Discuss file operations: Reading from files, lending of file, closing file, outputting a single character at a time, reading a full line. Discuss output Operation: How to print, The STD10. H header file.	Magic Board PC loaded with C Language and connected to OHP.	• Show ability to read from files. • Show ability to close files. • Show ability to output a single character at a time. • Show ability to read a word at a time. • Show ability to read a full	Guide students on file Operations and Out-put operation.	Networked PC loaded with C Language in a networked laboratory.

				line and use a variable file name. • Show ability to print.		
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND THE CONCEPT OF DYNAMIC ALLOCATION OF MEMORY**					
7	7.1 Explain the concept of standard error output, the exit statement and dynamic allocation of memory. 7.2 Explain the concept of Dynamic Variable creation and Dynamic Allocated Structure Linked list. 7.3 Explain the concept of PRAGMA.	Discuss how the heap works. Discuss how malloc and free works. Discuss the concepts of data definitions, multiple file programs, enumeration variable. Discuss the concepts of characters and Bit manipulation, classification of characters, the logical functions and shift instructions.	Magic Board PC loaded with C Language and connected to OHP.	• Show how the heaps work. • Show how malloc and free works.	Assist student in his practical work.	Networked PC loaded with C Language in a networked laboratory.
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND C++ PROGRAMMING**					
8	8.1 Design first program in C++ 8.2 Explain memory concepts 8.3 Explain the concept of decision making.	Discuss equality and relational operators in decision making.	PC loaded with C++ Language and connected to Over Head Projector.	• Modify first C++ program.	Guide students in the design and modification	Networked PC loaded C++ language.
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND THE CONCEPT OF CLASSES AND OBJECTS**					
9	9.1 Explain the concepts of classes, Objects, Member Functions and Data Members. 9.2 Define a class with a	Discuss the concepts of Classes, Objects, Member Functions and Data Members.	PC Loaded with C++ Language and Connected to OHP Magic Board	• Initialize Objects with Constructors. • Place a class in a separate file for reusability.	Guide students in carryout practical work.	PC Loaded with C++ language in a networked Lab.

	Member Function. 9.3 Define a Member Function with a Parameter. 9.4 Explain the concept of Data Members, set Functions and get Functions.			• Separate interface from implementation. • Validate data with set functions.		
Week	***GENERAL OBJECTIVE 10:*** **UNDERSTAND THE CONCEPTS OF CONTROL STATEMENTS PART 1**					
10	10.1 Define Algorithms 10.2 Define Pscudocode. 10.3 Describe control Structures 10.4 Describe 10.5 Describe assignment operators, increment and decrement operators.	Discuss control structures used in C++ Language: If selection statement, if….. else double-selection statement, while repetition statement.	PC loader with C++ Language and connected to OHP Magic Board	• Formulate Algorithms: • Counter – controlled Repetition. • Formulate Algorithms: • Sentinel – Controlled • Repetition. And Nested Control Statements.	Guide the student by giving examples	Networked PC loaded with C++ Language.
Week	***GENERAL OBJECTIVE 11:*** **UNDERSTAND THE CONCEPTS OF CONTROL STATEMENT: PART 2**					
11	11.1 Explain the essentials of Counter – controlled Repetition. 11.2 Describe logical operators.	Discuss the concepts of control statements: For Repetition Statement, do … while Repetition Statement, switch Multiple Selection Statement, break and continue statements. Discuss the concept of Confusing Equality (= =) and Assignment (=) Operators.	PC loader with C++ Language and connected to OHP Magic Board	11.1 Use Control Statements to solve practical problems.	Guide the student.	Networked PC loaded with C++ Language.
Week	***GENERAL OBJECTIVE 12:*** **UNDERSTAND FUNCTIONS AND RECURSION**					

12	12.1 Describe Program Components in C++. 12.2 Explain Math Library Functions. 12.3 Describe C++ Standard library header Files, storage classes & scope rules. 12.4 Explain references and reference parameters, default arguments, function overloading and templates and recursion.	Discuss the following: Function definitions with multiple parameters, Function Prototypes and argument Coerclon, Function call stack and activation records, Functions with empty parameter lists, In line functions.	PC loaded with C++ language and Connected to OHP.	• Use Math library Functions, Storage Classes, Scope rules, reference parameter, default arguments, function overloading and templates to solve practical problems.	Guide the students in their practical work.	PC loaded with C++ Language in a networked Laboratory
Week	***GENERAL OBJECTIVE 13:*** **UNDERSTAND THE CONCEPTS OF ARRAYS & VECTORS, POINTERS AND POINTER-BASED STRINGS**					
13	13.1 Describe the Features of arrays and multi dimensional arrays. 13.2 Describe Pointer Operators, Pointer expressions and Pointer arithmetic. 13.3 State the relationship between pointers and arrays.	Explain the concept of passing arguments to functions by reference with Pointers.	PC loaded with C++ Language and connected to OHP Magic Board	• Search arrays with Linear search. • Sort arrays with insertion Sort. • Use constant with Pointers. • Select Sort using Pass-by-reference.	Guide the Students in their practical work.	Networked PC loaded with C++ Language.
Week	***GENERAL OBJECTIVE 14:*** **UNDERSTAND CLASSES**					
14 – 15	14.1 Explain time class case study 14.2 Explain Cost (Constant) Objects and Consti member functions. 14.3 Explain the concept of	Discuss the concept of Classes, Operator Over Loading and Object – Oriented Programming. Use practical examples to discuss.	PC Loaded with C++ Language and connected to OHP	• Show ability to use Classes, Operator Overloading, String and array objects and object – oriented Programming. • Show ability to implement Stream input/output,	Demonstrate the Operation of Classes, Operator Loading, String and array objects. Guide the students in their practical work.	Networked PC loaded with C++ Language in a networked laboratory.

	Operator overloading; string and array objects. 14.4 Explain the concept of Object – Oriented Programming: Inheritance, Polymorphism. 14.5 Discuss Stream Input/Output, Exception Handling, File Processing and Data Structures.	Explain the concept of Stream input/Output, exception handling and file Processing.		exception handling and data structures.		

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 221)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: THE C++ PROGRAMMING LANGUAGE SPECIAL EDITION
AUTHOR/PUBLISHER: EJAME STROUSTRUP/ADDISON WESLEY

TITLE: C PROGRAMMING LANGUAGE
AUTHOR/PUBLISHER: BRIAN W. KEMIGHAN, DENNIS M. RITCHIE/PEARSON EDUCATION.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **COMPUTER APPLICATION PACKAGES II**				***COURSE CODE:*** **CSE 231**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: TO FAMILIARISE STUDENTS WITH COMPUTER APPLICATION PACKAGES						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND COMMON GRAPHICS PACKAGES.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Identify different types of graphic representation e.g. pictures, drawings, charts in computer system.	Illustrate Graphics using pictures, drawings, charts and graphs.	Classroom computer resources CorelDraw, PageMaker Windows Operating System etc.	• Show understanding of topics covered	Oversee practical application of topics covered	Classroom computer resources - CorelDraw, PageMaker Windows Operating System etc.
2	1.2 List the difference between DTP and computer aided design. 1.3 List the types and uses of graphics packages (e.g. drawing packages, painting, computer aided design, charting packages)	Show examples of DTP and computer aided design Carryout an overview of graphic packages in existence and if possible identify merits and demerits of each	Classroom computer resources CorelDraw, PageMaker Windows Operating System etc.	• Show understanding of topics covered	Oversee practical application of topics covered	Classroom computer resources - CorelDraw, PageMaker Windows Operating System etc.
3	1.4 Demonstrate how to use graphic software.	Collect documented samples of a newsletter, flyers and certificates and let students design to exact specification. Highlight omissions and errors.	Classroom computer resources CorelDraw, PageMaker Windows Operating System etc.	• Show understanding of topics covered	Oversee practical application of topics covered	Classroom computer resources - CorelDraw, PageMaker Windows Operating System etc.
4	1.5 Design brochures and letter heads.	Collect documented samples of brochures and letterheads and let students design to exact specification. Highlight omissions and errors.	Classroom computer resources CorelDraw, PageMaker Windows Operating System etc.	• Show understanding of topics covered	Oversee practical application of topics covered	Classroom computer resources - CorelDraw, PageMaker Windows Operating System etc.
5	1.6 Design greetings cards, invitations and folders	Collect samples of greetings cards and similar	Classroom computer resources	• Show understanding of topics covered	Oversee practical application of topics	Classroom computer resources -

		items.	CorelDraw, PageMaker Windows Operating System etc.		covered	CorelDraw, PageMaker Windows Operating System etc.
6 – 7	1.7 Explain steps in creating, opening and saving card presentations. 1.8 Explain work in different views and with slides.	Let students design using samples from templates and clip arts.	Classroom computer resources CorelDraw, PageMaker Windows Operating System etc.	• Show understanding of topics covered	Oversee practical application of topics covered	Classroom computer resources - CorelDraw, PageMaker Windows Operating System etc.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND DATABASE MANAGEMENT.**					
8 – 9	2.1 Describe the functions of any DBMS e.g. Microsoft Access.	Explain variable, constant, data type objects, collection, and events. Give examples of DBMS activities (update, sorting, etc.)	Classroom computer resources CorelDraw, PageMaker Windows Operating System Access software, etc	• Apply Access to work with sets of records such as: • personnel records (creation and retrieval) • medical records (creation and retrieval) • (c) library records (creation and retrieval)	Oversee practical application of topics covered	Classroom computer resources - Access software
10-11	2.2 Explain data base structure.	Explain variable, constant, data type objects, collection, and events.	Classroom computer resources CorelDraw, PageMaker Windows Operating System Access software, etc	• Carry out the following: using the above records • Find and sort data • Work with queries and forms	Oversee practical application of topics covered	Classroom computer resources - Access software
12	2.3 Explain data base structure (continued)	Give examples of DBMS activities (update, sorting, etc.)	Classroom computer resources CorelDraw, PageMaker Windows Operating System Access software, etc	• Share data between other applications • Create macros • Generate reports	Oversee practical application of topics covered	Classroom computer resources - Access software

				• Handle run time errors and secure data.		
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND A DATA ANALYSIS PACKAGE.**					
13	3.1 Explain the functions of data analysis packages (SPSS, SSIDM) 3.2 Define data analysis 3.3 Describe an overview of data analysis packages	Explain data analysis Explain various functions of a data analysis package Give an overview of data analysis packages.	Classroom computer resources SPSS software	• Carry out data analysis on systems	Oversee practical application of topics covered	Classroom computer resources - SPSS, software
14	3.4 Explain the basics of a data analysis package. 3.5 Explain build and execute commands	Present an overview of how to use build and execute commands and read, write and code data.	Classroom computer resources - SPSS software	• Carry out data analysis on systems	Oversee practical application of topics covered	Classroom computer resources - SPSS, software
15	3.6 Explain reading, writing and code of data. 3.7 Explain the presentation of statistical graphs, freer distribution and correlation analysis.	Explain (a) statistical graphs, (b) frequency distribution (c) correlation analysis (d) comparison of means (e) Construction of report summary and reproduction of statistical reports.	Classroom computer resources SPSS software	• Carry out data analysis on systems	Oversee practical application of topics covered	Classroom computer resources - SPSS, software

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 231)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	20
Practical / Projects	To be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: USING INFORMATION TECHNOLOGY
AUTHOR/PUBLISHER: WILLIAMS, SAWYER, HUTCHINSON/IRWIN MCGRAW-HILL

TITLE: MASTERING MICROSOFT OFFICE 2000 PROFESSIONAL EDITION.
AUTHOR/PUBLISHER: GINI COURTER, ANNETTE MARQUIS/SYBEX

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **STRUCTURED QUERY LANGUAGE I**				***COURSE CODE:*** **CSE 241**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: **TO ENABLE STUDENTS ACQUIRE SKILLS NEEDED TO PERFORM STRUCTURAL QUERY LANGUAGE**						
COURSE SPECIFICATION: **THEORETICAL CONTENTS:**				**PRACTICAL CONTENTS:**		
	GENERAL OBJECTIVE 1**: UNDERSTAND THE ESSENTIAL COMPONENTS AND TOOLS FOR SQL SERVER**			***GENERAL OBJECTIVE:*** **CARRY OUT SQL SERVER INSTALLATION**		
Week	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**
1 – 4	1.1 List the various components of SQL Server e.g. Services, Editions, System and User databases. 1.2 List the various tools used in SQL server e.g. Management studio, Transact SQL, Surface area configuration, configuration manager.	Discuss the components of SQL Server Describe the tools used in SQL Server.	PC loaded with SQL Software and connected to OHP. Magic Board. Textbooks, Internet.	• Set up Installation options • Employ multiple instances. • Upgrade from previous version. • Manipulate configuration settings. • Show how to enable network protocols.	Show how to Setup installation options. Show how to manipulate configuration settings.	PC loaded with SQL Software in a networked laboratory
Week	***GENERAL OBJECTIVE 2:*** **KNOW HOW TO MANAGE DATABASE**					
5 – 9	2.1 Explain disk structures 2.2 Explain space management strategies: Dynamic database growth.	Discuss the features of Structures such as disk, storage etc.	PC loaded with SQL Software and connected to OHP. Textbooks, Internet.	• Examine storage Structures. • Create databases and transaction logs. • Reclaim unused space. • Detach and attach databases. • Use copy database wizard.	Demonstrate how to create databases and work with SQL tools	PC loaded with SQL Software in a networked Laboratory.
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE CONTROL OF SERVER AND DATABASE SECURITY**					
10 – 15	3.1 Describe SQL Server authentications. 3.2 Describe how to enforce password policy. 3.3 Explain the concept of database security.	Discuss control of Server and database Security.	PC loaded with SQL Software and Connected to OHP. Textbooks Internet	Login Security: • Contrast windows and SQL Server authentications • Authorize Logins. • Make Login numbers of	Demonstrate the application of SQL Server authentication. Show how to enforce password policy. Demonstrate the	Network PC loaded with SQL Software

				Server roles. • Enforce Password policy. • Carry out Database Security: o Design schemes, add users, define new roles, delegate privileges, and assign users to roles. o Carryout permission..	application of database Security.	

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 241)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	20
Practical / Projects	To be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: SQL SIMPLIFIED
AUTHOR/PUBLISHER: CECELIA ALLISON/AUTHOR HOUSE

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **RELATIONAL DATA BASE MANAGEMENT SYSTEM (RDBMS) I**				***COURSE CODE:*** **CSE 251**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: **TO EMPOWER STUDENTS WITH THE TOOLS, KNOWLEDGE AND PRACTICAL EXPERIENCE NEEDED TO PERFORM ORACLE DATABASE TASKS (INCLUDING INSTALLATION, CONFIGURATION AND MAINTENANCE)**						
COURSE SPECIFICATION: **THEORETICAL CONTENTS:**				**PRACTICAL CONTENTS:**		
	GENERAL OBJECTIVE 1: **UNDERSTAND ORACLE ARCHITECTURE**			***GENERAL OBJECTIVE 1:*** **CARRY OUT THE INSTALLATION OF ORACLE DATABASE SOFTWARE**		
Week	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**
1 – 2	1.1 Describe the Oracle architecture and its main components. 1.2 Explain the Oracle instance architecture	Discuss Components of Oracle architecture	PC loaded with Oracle Software and Connected to OHP	• Identify common database administrative tools available to a DBA. • Use optimal flexible architecture • Install software with Oracle Universal Installer. • Identify and configure commonly used environment variables. • Use Installer Log.	Demonstrate the Procedures for installing Oracle database Software. Apply Oracle Universal installer. Guide students in practical work.	Networked PC Lab. with Oracle Softward.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE METHOD OF CREATING AND MANAGING TABLES**			***GENERAL OBJECTIVE 2:*** **APPLY THE METHOD OF CREATING AN ORACLE DATABASE.**		
3 – 5	2.1 State the procedures for creating an Oracle database. 2.2 Identify the tools for creating Oracle database.	Discuss the development of Oracle database.	Smart Board PC loaded with Oracle Software and connected to OHP.	• Use Database Configuration Assistant (DBCA) to create a database. • Use DBCA to delete a database. • Use DBCA to manage templates.	Show how to create and manage Oracle database	PC in a networked Laboratory loaded with Oracle Software.
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE METHOD OF CREATING AND MANAGING AND MANAGING TABLES.**			***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE METHOD OF CREATING AND MANAGING AND MANAGING TABLES.**		
6 – 7	3.1 Describe the main database objects.	Explain the use of database Objects	PC loaded with Oracle Software and Connected OHP.	• Create tables. • Alter table definitions	Show how to create and manage tables	Networked PC lab. Loaded with Orable Software.

	3.2 Describe the data types that can be used when specifying column definition. 3.3 Describe other database objects and their uses.		Magic Board	• Drop, rename, and truncate tables. • Create, maintain, and use sequences. • Create and maintain indexes • Create private and public Synonyms.		
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE PROCEDURES FOR WRITING EXECUTABLE STATEMENTS**			***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE PROCEDURES FOR WRITING EXECUTABLE STATEMENTS AND INCLUDING CONSTRAINTS..**		
8	4.1 State the significance of the executable section. 4.2 State the rules of nested blocks. 4.3 Describe constraints	Explain the use of executable section. Discuss the rules of nested blocks.	PC loaded with Oracle Software and connected to OHP. Magic Board	• Write statements in the executable section. • Execute and test a PL/SQL block. • Use coding conventions. • Create and maintain constrains.	Assist students in their practical work	Networked PC Lab. Loaded with Oracle Software.
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND PROCEDURES FOR CONTROLLING USER ACCESS**			***GENERAL OBJECTIVE 5:*** **UNDERSTAND PROCEDURES FOR CONTROLLING USER ACCESS**		
9	5.1 State the tools required for Controlling user access	Discuss the tools for Controlling User Access.	PC loaded with Oracle Software and Connected to OHP.	• Create users. • Create roles to ease setup and maintenance of the security model. • Use the GRANT and REVOKE Statements to grant and revoke object privileges.	Assist students carryout their practical	Networked PC Lab. Loaded with Oracle Software.

Week	*GENERAL OBJECTIVE 6:* **UNDERSTAND THE SIGNIFICANCE OF INTERACTING WITH THE ORACLE SERVER**.			*GENERAL OBJECTIVE 6:* **CARRY OUT THE SIGNIFICANCE OF INTERACTING WITH THE ORACLE SERVER**.		
10	6.1 Describe the data type and size of a PL/SQL Variable dynamically. 6.2 State the outcome of SQL DML Statements.	Use practical examples to explain data type and size of a PL/SQL variable dynamically and the outcome of SQL DML statements.	OC loaded with Oracle Software and connected to OHP. Magic Board	• Write a successful SELECT statement in PL/SQL. • Write DML statements in PL/SQL. • Control transactions in PL/SQL.	Illustrate how to write statements in PL/SQL	Networked PC Lab. Loaded with Oracle Software.
Week	*GENERAL OBJECTIVE 7:* **UNDERSTAND THE PROCEDURE FOR MANAGING ORACLE INSTANCE**			*GENERAL OBJECTIVE 7:* **CARRY OUT THE PROCEDURE FOR MANAGING ORACLE INSTANCE**		
11	7.1 Describe the stages of database start up. 7.2 Describe the database shutdown options.	Discuss database start-up and Shut down Options. Explain the concept of Oracle instance.	PC loaded with Oracle Software and Connected to OHP	• Use Enterprise Manager • Use SQL *Plus and iSQL* Plus to access the Oracle Database. • Modify database initialization parameters. • View the database alert log. • Use dynamic performance views.	Guide student in their practical work	Networked P.C. Lab. Loaded with relevant Oracle Software.
Week	*GENERAL OBJECTIVE 8:* **UNDERSTAND THE PROCEDURES FOR MANAGING DATABASE STORAGE STRUCTURES**.			*GENERAL OBJECTIVE 8:* **CARRY OUT THE PROCEDURES FOR MANAGING DATABASE STORAGE STRUCTURES**.		
12	8.1 Describe how table row data is stored in blocks. 8.2 State the purpose of table spaces and data files. 8.3 Explain space management in table spaces. 8.4 Explain key features and	Explain the use of table spaces and data files. Discuss space management in table spaces.	PC loaded with appropriate Oracle Software and Connected to OHP	• Create table spaces • Manage table spaces: alter, drop, take offline, put online, add data files, make read-only or read-write, and generate DDL. • Obtain table space information.	Show how to create and manage table spaces	Networked PC Lab. Loaded with appropriate Oracle Software.

	benefits of ASM.					
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND THE PROCEDURES FOR MANAGING SCHEMA OBJECTS**.			***GENERAL OBJECTIVE 9:*** **CARRY OUT THE PROCEDURES FOR ADMINISTERING USER SECURITY AND MANAGING SCHEMA OBJECTS**.		
13 – 14	9.1 Define constraints. 9.2 Explain state of constraints.	Discuss the use of constraints	PC loaded with appropriate Oracle Software and Connected to OHP	• Create and manage database user accounts. • Create and manage roles. • Grant and revoke privileges. • Create and manage profiles. • Create and modify tables • Dropping and truncating tables. • Create and use BTree and Bitmap indexes. • Create Views. • Create sequences • Use data dictionary.	Assist students to administer user security and manage Schema Objects Practically.	Networked PC Lab. Loaded with appropriate Oracle Software.
Week	***GENERAL OBJECTIVE 9:*** **UNDERSTAND THE PROCEDURES FOR MANAGING DATA AND CONCURRENCY**.			***GENERAL OBJECTIVE 9:*** **UNDERSTAND THE PROCEDURES FOR MANAGING DATA AND CONCURRENCY**		
15	10.1 Describe triggers and triggering events. 10.2 Define levels of locking. 10.3 List possible causes of lock conflict.	Explain the functions of triggers. Explain the levels of locking and causes of lock Conflict.	PC loaded with appropriate Oracle Software and connected to OHP. Smart Board.	• Manipulate data through the use of SQL. • Identify and administer PL/SQL objects. • Monitor and resolve lock conflicts.	Guide students in their practical work	Networked PC Lab. Loaded with appropriate Oracle Software.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 251)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	20
Practical	To be assessed by the teacher	20
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: EXPERT ORACLE DATABASE ARCHITECTURE
AUTHOR/PUBLISHER: THOMAS KYTE, TONY DAVIS/APRESS L.P.

TITLE: ORACLE PL/SQL PROGRAMMING 4TH EDITION
AUTHOR: STEVEN FEVERSTEIN, BILL PRIBYL/O'BEILLY MEDIA, INC.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **ENTREPRENEURSHIP DEVELOPMENT**				***COURSE CODE:*** **ENT 201**	***CONTACT HOURS:*** **1 – 0 – 1**	
GOAL: **TO STIMULATE ENTREPRENEURSHIP SKILLS IN THE STUDENT**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE NATURE OF SMALL-SCALE ENTERPRISES**			***GENERAL OBJECTIVE:***		
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Define the range and scope of a small business. 1.2 Explain the importance of a small business. 1.3 Describe the problems associated with small business operations.	Explain range, scope and importance of a small scale business. Explain problems associated with small business operations.	Text Books Journals and Publications	• Select a small business enterprise and indicate its signs of success and failures. • Use case studies based on a local organisation.	Guide students in identifying range, scope and importance of a small scale business.	Internet and relevant websites Guest speaker on small businesses
2	1.4 Describe types of businesses that could be run on a small scale. 1.5 Describe the merits and demerits of being self-employed 1.6 Identify the starting problems and signs of failure of a small business	Explain types of businesses that could be run on small scale, their associated problems and signs of failure during operations. Explain wage employment and self employment. Explain the merits and demerits of self-employment.	Text Books Journals and Publications	• Select a small business enterprise and indicate its signs of success and failures. • Use case studies based on a local organisation.	Guide students in identifying types of businesses that could be run on small scale, their associated problems and signs of failure during operations.	Internet and relevant websites Guest speaker on small businesses
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE LEGAL FRAMEWORK FOR SMALL-SCALE ENTERPRISES.**					
3	1.1 Explain the types of business organization. 1.2 Identify the legal form of business.	Explain the types of business organization Explain legal formation and regulatory status of small business. Explain environmental factors of business.	Text Books Journals and Publications	• Use CAMB to explain the regulatory frame work of small business. • Group work to set up a small business – realistic scenarios • Use of relevant	Guide students to identify the legal formation and regulatory status of small business.	Internet and relevant websites

				documentation taken from the internet.		
4	2.3 Describe the environmental factors of business – law of sales, licenses, failure signs, etc. 2.4 Explain regulatory status and formation of small business.	Explain legal formation and regulatory status of small business. Explain environmental factors of business.	Text Books Journals and Publications	• Use CAMB to explain the regulatory frame work of small business. • Group work to set up a small business – realistic scenarios • Use of relevant documentation taken from the internet.	Guide students to identify the environmental factors of business.	Internet and relevant websites
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE ROLE OF GOVERNMENTS IN SMALL-SCALE ENTERPRISES IN NIGERIA**					
5	3.1 Explain government policies for small enterprises development. 3.2 Explain the effects of government policies on direct and indirect assistance to small businesses	Explain government policies for small enterprises development and effects of the policies on direct and indirect assistance to these enterprises.	Text Books Journals and Publications	• Identify government policies and their effects on small scale business.	Guide students to evaluate the contributions of the promoting bodies (IDC, NASA, NERFUND, NDE, NAPEP etc to growth of small business in Nigeria.	Internet and relevant websites
6	3.3 State the role of the following institutions in promoting small enterprises a. ndustrial Development Centre (IDC) b. tate Ministries of Commerce and Industries. c.	Explain the following institutions and their roles in promoting small scale enterprises. - IDC, State Ministries of Commerce, State Export Promotion Committees, CMD, NDE, NAPPEP, CIRD NERFUND NACRDB, NEPC NASSI, NASME, etc	Text Books Journals and Publications	• Identify and explain beneficiaries of the bodies Promotion SME in Nigeria.	Guide students to evaluate the contributions of the promoting bodies (IDC, NASA, NERFUND, NDE, NAPEP etc to growth of small business in Nigeria.	Internet and relevant websites

	tate Export Promotion Committees. d. entre for Management Development (CMD) e. ational Directorate of Employment (NDE) f. APEP g. IRD h. ERFUND i. ACRDB, NEPC, NASSI, NASME, etc					
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND A BUSINESS PLAN FOR A SMALL-SCALE BUSINESS ENTERPRISE.**					
7	4.1 Explain business plan. 4.2 Explain the purpose of business plan 4.3 Identify the components of a business plan from project development up to project cost. 4.4 Explain the following: • roposals • equest for proposals •	Explain business Plan, its purpose and components from project development to project cost.	Text Books Journals and Publications	• Identify business plan. • Identify how to plan in small business. • Formulate a business plan for a particular project. • Develop technical proposals for various forms of institutions/organisations	Guide students to:- Work in pairs to develop a relevant business plan. Refer to business planning information on the internet Present the plans and justify the goals	Internet and relevant websites

	enders • id • eed for proposals 4.5 ifferentiate types of proposals					
8	4.6 State the necessary steps in carrying out financial analysis and planning for a small business 4.7 Compare personal goal and business goals. 4.8 Identify influences of family goals in business goals	Explain steps in carrying out financial analysis and planning for a small business. Explain personal goals and business goals. Explain influences of family goals in business goals. Invite a successful entrepreneur to give a talk.	Text Books Journals and Publications	• Identify business plan. • Identify how to plan in small business. • Formulate a business plan for a particular project.	Guide students to:- Work in pairs to develop a relevant business plan. Refer to business planning information on the internet Present the plans and justify the goals	Internet and relevant websites
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND MARKETING MANAGEMENT IN A SMALL BUSINESS ENTERPRISE**					
9	1.1 Understand the basic concept of marketing. 1.2 Identify the steps in conducting market surveys to determine demand and supply for particular products. 1.3 Identify markets for specific products.	Explain basic concepts of marketing. Explain steps in conducting marketing survey to determine demand and supply for particular products. Explain how to identify markets for specific products.	Text Books Journals and Publications	• Identify the process of conducting a marketing survey. • Identify appropriate training strategies for products produced on a small scale.	Guide students to use the internet to identify the marketing needs of small business enterprises.	Internet and relevant websites
10	1.4 Identify channels of distribution for a selected product or service.	Explain channels of distribution for a selected product or service.	Text Books Journals and	• Identify the process of conducting a marketing survey.	Guide students to use the internet to identify the marketing needs of small	Internet and relevant websites

	1.5 Explain the promotional and sales activities for a selected product or service 1.6 Explain appropriate pricing strategies	Explain promotional and sales activities for a selected product or service Explain appropriate pricing strategies	Publications	• Identify appropriate training strategies for products produced on a small scale.	business enterprises.	
Week	***GENERAL OBJECTIVE 6:*** **UNDERSTAND THE GENERAL CONCEPT OF PRODUCTION MANAGEMENT**					
11	6.1 Explain the basic concepts of production 6.2 Explain choice of appropriate technology 6.3 Identify types and sources of machinery and equipment. 6.4 Explain the installed capacity. 6.5 Explain the utilized capacity.	Explain the basic concepts of production Explain choice of appropriate technology Explain types and sources of machinery and equipment, their installed and utilized capacity.	Text Books Journals and Publications Sample business	• Identify appropriate technology for different types of SME. • Identify sources of machinery and material from the internet. • Identify appropriate locations and their problems for SMES	Guide students to prepare a case study on the location of an industry and factory layout Oversee group work and guide reference to relevant web sites	Internet and relevant websites
12	6.6 Identify sources of raw materials. 6.7 Describe factory location and factors in the selection of site. 6.8 Describe factory layout. 6.9 Explain plant and machinery maintenance. 6.10 Explain Plan and scheduling.	Explain sources of raw materials. Explain factory location, its layout and safety measures. Explain Plant and machinery maintenance. Explain plan and scheduling.	Text Books Journals and Publications Sample business	• Identify appropriate technology for different types of SME. • Identify sources of machinery and material from the internet. • Identify appropriate locations and their problems for SMES	Guide students to prepare a case study on the location of an industry and factory layout Oversee group work and guide reference to relevant web sites	Internet and relevant websites

13	6.11 Explain quality control issues. 6.12 Explain factory safety measures. 6.13 Identify problems of production in the Nigerian situation. 6.14 Explain how to cope with production problems in Nigeria.	Explain quality control. Explain problems of production in the Nigerian situation and how to cope with them. Organise a field trip to a successful small business establishment.	Text Books Journals and Publications Sample business	• Identify appropriate technology for different types of SME. • Identify sources of machinery and material from the internet. • Identify appropriate locations and their problems for SMES	Guide students to prepare a case study on the location of an industry and factory layout Oversee group work and guide reference to relevant web sites	Internet and relevant websites

Week	*GENERAL OBJECTIVE 7:* **KNOW HUMAN CAPITAL NEEDS FOR AN ENTERPRISE**					
14	7.1 Identify human capital needs for an enterprise. 7.1 Explain recruitment procedures. 7.2 Explain need for training of workers. 7.3 Explain how to motivate workers.	Explain human capital management and its needs for small business enterprises. Explain recruitment procedures	Text Books Journals and Publications Cardboard	• Identify the recruitment compensation and training procedures of workers in SMES. • Identify problems of human capital management and how to solve them in SMEs	Guide students to prepare organizational charts for SME and how to forecast their employment needs.	Internet and relevant websites
15	7.4 Explain how to compensate workers. 7.5 Explain organization of work force, organizational chart. 7.7 Explain problems of human capital management in small business enterprises. 7.8 Explain how to cope with the problems of human capital management.	Explain need for training of workers. Explain how to motivate. and compensate workers Explain organization of work force. Guide students to prepare organizational, chart for a small business enterprise. Explain problems of human capital management in small business enterprises and how to cope with them.	Text Books Journals and Publications Cardboard	• Identify the recruitment compensation and training procedures of workers in SMES. • Identify problems of human capital management and how to solve them in SMEs	Guide students to prepare organizational charts for SME and how to forecast their employment needs.	Internet and relevant websites

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (ENT 201)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	60
Test	At least 1 progress test for feed back.	40
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: SMALL BUSINESS MANAGEMENT
AUTHOR/PUBLISHER: SOJI OLOKAYO/OLA JAMON PRINTERS & PUBLISHER

NATIONAL INNOVATION DIPLOMA (NID)

IN

COMPUTER SOFTWARE ENGINEERING

SECOND YEAR COURSES, SECOND SEMESTER

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **SCIENTIFIC PROGRAMMING LANGUAGE USING OO JAVA**				***COURSE CODE:*** **CSE 202**	***CONTACT HOURS:*** **1 – 0 – 4**	
GOAL: TO EQUIP STUDENT WITH PRACTICAL EXPERIENCE NEEDED TO PERFORM SCIENTIFIC PROGRAMMING LANGUAGE USING OO JAVA						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **KNOW OBJECT ORIENTED PROGRAMMING WITH JAVA**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 2	1.1 Identify the basic components of JAVA environment (JDK, JRE, VM) 1.2 Explain classes, methods, variables and key words. 1.3 Explain inheritance, polymorphism and data abstraction 1.4 Explain with graphical illustrations the following • Object • Classes • Superclass • Sub-classing 1.5 Explain various JAVA IDEs. 1.6 Describe the process of creating and running Java programs.	Show basic components of Java environments. Compile and Run Java programs	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Identify different components o java and compilation of a java program	To assist student identify different components o java and compilation of a java program	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND JAVA CONSTRUCTS**					
3 – 4	2.1 Explain data types (primitives and referentials) 2.2 Explain in details access modifiers for methods,	Give the general format of Arithmetic expression. Explain operator's precedence rules.	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write simple java programs to demonstrate JAVA construct.	To assist student to write simple JAVA program to evaluate arithmetic expression.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the

	classes and variables. 2.3 Define arithmetic expressions using precedence rules. 2.4 Describe how memory allocation works for objects and primitive data value. 2.5 Explain in details control structures, selections and conditional or unconditional statements. 2.6 Explain strings, string processing and string tokenisation.	Evaluate simple and complicates arithmetic expression. Give programming assignments				Internet
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND JAVA ABSTRACTIONS**					
5	3.1 Explain with skeletal codes • static initializers • abstract classes • inner classes 3.2 Explain the JAVA garbage collector and the finalise method 3.3 Explain the try-catch-finally block and constructors 3.4 Describe parameter passing in method definitions	Write programs using constructors	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write simple java program to demonstrate JAVA abstractions.	To assist student to write simple java program to show different variable and passing of parameter	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet

Week	*GENERAL OBJECTIVE 4:* **UNDERSTAND INPUT/OUTPUT PROCESSING**					
6	4.1 Describe the following with code samples • File reader/writer • Stream reader/writer • Byte reader/writer • Character reader/writer • Pipe reader/writer 4.2 Describe how to • Read from file • Read from keyboard • The system.err • Buffered reader/writer	Write sample I/O programmes	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write sample I/O programmes	To assist student write and run program.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet
Week	*GENERAL OBJECTIVE 5:* **UNDERSTAND JAVA DATABASE CONNECTIVITY**					
7	5.1 Describe the JDBC design 5.2 Explain with code samples • SQL with JAVA • Installing JDBC • JDBC programming concepts • Executing queries • Result sets • Introduce the JAVA transaction API	Write sample JDBC programmes	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write and run simple JDBC programs	To assist student write and run program.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet
Week	*GENERAL OBJECTIVE 6:* **UNDERSTAND GRAPHICS AND IMAGE PROCESSING**					
8 – 9	6.1 Explain the swing package, frame and panel 6.2 Describe creation of shapes, colours, images,	Write sample graphic programmes	PC Loaded with OO-JAVA Compiler, Power point package and connected to an	• Write and run simple graphic programs	To assist student write and run program.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be

	2D text and font. 6.3 Describe image manipulation and clipboard activities		OHP			connected to the Internet
Week	***GENERAL OBJECTIVE 7:*** **UNDERSTAND GRAPHIC USER INTERFACE AND EVENTS**					
10	7.1 Describe the model-view-controller pattern. 7.2 Explain and demonstrate form controls, menu and dialogue boxes using the layout managers. 7.3 Demonstrate applets with sample codes 7.4 Explain the AWT package and events. 7.5 Create lists, trees and tables. 7.6 Explain the various event handlers.	Write sample swing and AWT programmes	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write sample swing and AWT programmes	To assist student write simple swing and AWT programmes	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet.
Week	***GENERAL OBJECTIVES 8:*** **UNDERSTAND NETWORKING WITH JAVA**					
11 – 12	8.1 Explain the JAVA.NET package and how to connect to servers. 8.2 Demonstrate how to send e-mails 8.3 Explain advanced socket programming. 8.4 Create URL objects and a sample browser	Write sample network-based programmes	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Write sample network-based programmes	To assist student write simple network-based programmes.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet.

	application to fetch URLs and to post form data.					
Week	***GENERAL OBJECTIVES:9:*** **UNDERSTAND MULTITHREADING AND COLLECTIONS**					
13	9.1 Explain the concept of threads, thread priority, multithreading, synchronisation and deadlocks 9.2 Explain the collection framework, collection interface, legacy collection and algorithms.	Illustrate with sample threaded applications. Ask students to run the examples Give programming exercise.	PC Loaded with OO-JAVA Compiler, Power point package and connected to an OHP	• Illustrate with sample threaded applications.	To assist students to write a simple threaded application.	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet
Week	***GENERAL OBJECTIVES 10:*** **TO CARRY OUT JAVA PROJECTS**					

14 – 15				• Carry out project on
				  • JDBC and swing
				  • Networking and swing
				  • Networking, swing and multithreading
					Assist and supervise the projects	PC in a networked laboratory, loaded with OO-JAVA Compiler, Power point package which should be connected to the Internet

ASSESSMENT SRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 202)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 1 progress test for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: INTRODUCTION TO JAVA PROGRAMMING: FUNDAMENTALS FIRST, 6TH EDITION
AUTHOR/PUBLISHER: DANIEL ARMSTRONG/PRENTICE HALL

TITLE: CORE JAVA 2 (VOL 1 &2)
AUTHOR/PUBLISHER: CAY S. HORSTMANN & GARRY CORNELL/ PRENTICE HALL

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **MANAGEMENT INFORMATION SYSTEM**				***COURSE CODE:*** **CSE 212**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EQUIP STUDENT WITH KNOWLEDGE AND SKILLS FOR INFORMATION MANAGEMENT AND SYSTEMS DEVELOPMENT**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **KNOW DIFFERENT SYSTEMS**			**GENERAL OBJECTIVE:**		
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1	1.1 Understand a system and its characteristics. 1.2 Understand the taxonomy of systems; deterministic, probabilities, static, dynamic etc. 1.3 Understand organization and business education as make up of systems or subsystems	Define a system State the characteristics of a system. Explain the taxonomy of a system: deterministic, probabilistic, static, dynamic etc. Explain organizations, business, education, etc as made up of systems or subsystems	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND SYSTEMS THEORY.**					
2	1.1 Understand closed and open loop systems. 1.2 Understand feedback control n a system 1.3 Understand a system model 1.4 Understand how to represent a system	Distinguish between closed and open loop systems. Explain feed back control in system. Define a system model List types of models Represent systems as models.	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE CONCEPT OF MANAGEMENT INFORMATION.**					
3	1.1 Understand management and it's functions	Define management List the functions of management	Flip charts OHP connected to PC. Power point	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded

			presentation of Lecture notes. On line lecture notes. White board.			with MIS packages.
4	1.2 Understand information needs of management levels. 1.3 Understand attributes of information	Explain the information needs of management levels. Explain and give attributes of information	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 4:*** **KNOW THE FEATURES OF MANAGEMENT INFORMATION SYSTEMS (MIS)**					
5	4.1 Understand an information system and its characteristics. 4.2 Understand a management information system. 4.3 Appreciate the importance of MIS to business organizations. 4.4 Recognise features of information systems	Define information system. Explain the characteristics of an information system. Define management information system. Explain the importance of MIS to business organization. Explain the features of an information system.	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages

Week	*GENERAL OBJECTIVE 5:* **UNDERSTAND THE CONCEPT OF TRANSACTION PROCESSING.**					
6	6.1 Understand the concept of data and information 6.2 Understand data capture 6.3 Understand verification and validation 6.4 Understand data processing stages 6.5 Understand the concept of a database management system (DBMS), including insertion, delete and update operations.	Explain concept of data and information. Explain data processing stages. Explain the concepts of data capture, verification and validation. Explain concepts of a database management system (DBMS) Explain insertion, deletion and update operations	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	*GENERAL OBJECTIVE 6:* **UNDERSTAND THE CONCEPT OF OFFICE AUTOMATION.**					
7	2.1 Understand office automation and it's components, e-mail, voice mail, fax machine, teleconferencing 2.2 Understand telecommuting 2.3 Understand the importance of office automation (OA) to an organization	Define office automation. Explain components of office Automation i.e. e-mail, voice-mail fax machine, teleconferencing, Explain telecommuting. Explain the importance of office automation (O.A.) to an organization.	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages
Week	*GENERAL OBJECTIVE 7:* **UNDERSTAND THE DIFFERENT APPLICATIONS OF MIS.**					
8	3.1 Understand various types of information systems and their objectives. 3.2 Recognise the elements	List the various types of information system. Explain the objectives of each type of information	Flip charts OHP connected to PC. Power point	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with

	required for any information system 3.3 Understand reports required for any types of information system	system Explain the elements required for any information system. Explain the nature of reports required for each type of information system.	presentation of Lecture notes. On line lecture notes. White board.			internet access loaded with MIS packages.
9	3.4 Understand sources of data for each type of information system 3.5 Understand the information needs, strategic technical and operational advantages of MIS	Identify sources of data for each type of information system. Identify information needs: strategic, technical, and operational. Identify some advantages of MIS	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 8:*** **UNDERSTAND THE PRINCIPLES OF DECISION MAKING**					
10	4.1 Understand the stages in decision making 4.2 Understand various approaches to decision making 4.3 Undertake application of some decision making techniques	Explain decision making. Teacher to represent this diagrammatically. Teacher to explain the approaches to decision making. Teacher to give students a case study on decision making techniques	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages

Week	***GENERAL OBJECTIVE 9:*** **KNOW THE DEVELOPMENT CYCLE OF AN MIS**					
11	9.1 Understand the need for information system development	Explain the need for information system development	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
12	9.2 Understand the phases and importance in the development cycle of MIS	Identify the phases in the development cycle of MIS State the importance of each phase Describe each of the phases of the development cycle of an MIS.	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 10:*** **UNDERSTAND THE PRINCIPLES OF PROJECT MANAGEMENT.**					
13	1.1 Understand project management and its objectives. 10.2 Understand some tools used in project management and their application	Define project management Explain the objectives of project management. Identify tools to be used in project management. Apply the tools	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.
Week	***GENERAL OBJECTIVE 11:*** **UNDERSTAND TOTAL SYSTEMS.**					
14	11.1 Understand the objectives of a total system.	State the objectives of a total system	Flip charts	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC

	11.2 Understand rationalization of information flows, timing and accuracy of destination of output.	Explain rationalizing information flows, timing and accuracy of destination of output.	OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.			laboratory, with internet access loaded with MIS packages.
15	11.3 Understand the effect of time lag on inputs 11.4 Understand the effect of deviating from standards.	Explain the effect of time lag on inputs. Explain the effect of deviating from standards. Develop an MIS.	Flip charts OHP connected to PC. Power point presentation of Lecture notes. On line lecture notes. White board.	• Develop a simple MIS	To assist student in developing a simple MIS	OHP connected to PC. Networked PC laboratory, with internet access loaded with MIS packages.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 212)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	20
Practical	To be assessed by the teacher	60
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: MANAGEMENT INFORMATION SYSTEMS 7TH EDITION
AUTHOR/PUBLISHER: JAMES A. O'BRIER, GEORGE MARAKAS/MC.GRAW-HILL/IRWIN.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **STRUCTURED QUERY LANGUAGE II**				***COURSE CODE:*** **CSE 222**	**CONTACT HOURS: 1 – 0 – 3**	
GOAL: **TO QUERIED STUDENTS WITH THE TOOLS AND PRACTICAL EXPERIENCE NEEDED TO PERFORM STRUCTURED QUERY LANGUAGE TASKS**						
COURSE SPECIFICATION: **THEORETICAL CONTENTS:**				**PRACTICAL CONTENTS:**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE IMPORTANCE OF SQL SERVER INTEGRATION SERVICES**			***GENERAL OBJECTIVE*****: CARRY OUT THE PROCEDURES FOR BUILDING SIMPLE PACKAGES**		
Week	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**
1 – 2	1.1 Explain the use of packages. 1.2 State the uses of a packages features and control flows, data flows and connections. 1.3 Explain business intelligence development studio.	Discuss the Features of control Flows, data Flows and Connections	Magic Board Internet Textbooks PC loaded with SQL Software and connected to OHP.	• Import data from Access. • Export a table to Excel.	Assist students in carrying out practical	PC loaded with SQL Software in a networked laboratory.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE FUNCTIONS OF BACKUP AND RECOVERY**			***GENERAL OBJECTIVE 2:*** **CARRY OUT THE FUNCTIONS OF BACKUP AND RECOVERY**		
3 – 4	2.1 Describe the features of transaction log architecture 2.2 Explain the concept of backup and recovery.	Discuss the relevance of backup and recovery	PC loaded with SQL server and connected to OHP. Magic Board	• Choose a recovery model. • Perform fully log and differentiate backup. • Recover system and user database.	Assist students to implement backup and recovery	PC loaded with SQL Server in a networked laboratory.
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE PROCEDURES FOR IMPLEMENTING DATABASE MIRRORING.**			***GENERAL OBJECTIVE 3:*** **CARRY OUT THE PROCEDURES FOR IMPLEMENTING DATABASE MIRRORING.**		
5 – 7	3.1 Explain the implementation of database mirroring.	Discuss database mirroring and its implementation	Textbooks Magic Board PC loaded with SQL Software and connected to OHP	• Select a mirroring architecture. • Configure the mirror and witness server. • Monitor database mirroring. • Take snap shot of the mirror.	Guide the Students carrying out Practical	Networked PC loaded with SQL Software.

Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE OPERATIONS OF SQL SERVER AGENT**			***GENERAL OBJECTIVE 4:*** **UNDERSTAND THE OPERATIONS OF SQL SERVER AGENT**		
8 – 10	4.1 Describe how to configure agent. 4.2 Describe the set-up of database mail. 4.3 Explain the use of alerts and operators.	Discuss the operations of SQL Server agent.	PC loaded with SQL Software and connected to OHP	• Configure Agent. • Set-up database mail • Define jobs to handle routine tasks. • Create alerts and operators. • Associate alerts with jobs.	Assist students to Configure agent, set-up database mail. Demonstrate how to create alerts and operators.	Networked PC loaded with SQL Software.
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE CONCEPT OF REPLICATION**			***GENERAL OBJECTIVE 5:*** **UNDERSTAND THE PROCEDURES FOR MANAGING TRANSACTIONAL REPLICATION**		
11 – 13	5.1 State the features of public/subscribe metaphor. 5.2 Describe replication types. 5.3 Describe replication agents. 5.4 Describe replication models.	Explain Snapshot replication, merge replication and transactional replication.	PC loaded with SQL Software and connected to OHP. Textbooks Magic Board	• Configure Publisher and distribution. • Create publications. • Subscribe to Publications.	Guide students in carrying out practical	Networked PC loaded with SQL Software
Week				***GENERAL OBJECTIVE 6:*** **UNDERSTAND SQL SERVER MONITORY**		
14 – 15	6.1 Explain in detail various components of SQL Server monitory 6.2 Describe health and history tool in SQL Server **6.3** Describe the features of repository	Discuss component of SQL Server Discuss the features of repository and explain the health of history tool.	PC loaded with SQL Software and Connected to OHP Smart/white Board.	• Identify bottlenecks in SQL Server. • Deploy SQL server health and history tool. • Schedule data collection. • Interrogate the repository.	Demonstrate the use of SQL Server health and history tool	Networked PC loaded with SQL Software

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 222)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: SQL SIMPLIFIED
AUTHOR/PUBLISHER: CECELIA ALLISON/AUTHOR HOUSE

PROGRAMME: **NATIONAL INNOVATIVE DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **RELATIONAL DATA BASE MANAGEMENT II**				***COURSE CODE:*** **CSE 232**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL: **TO EMPOWER STUDENTS WITH PRACTICAL EXPERIENCE NEEDED TO PERFORM ORACLE DATABASE ADMINISTRATION TASK**						
COURSE SPECIFICATION: **THEORETICAL CONTENTS:**				**PRACTICAL CONTENTS:**		
	GENERAL OBJECTIVE 1: **UNDERSTAND THE PROCEDURES FOR MANAGING UNDO DATA**			***GENERAL OBJECTIVE 1:*** **UNDERSTAND THE PROCEDURES FOR MANAGING UNDO DATA**		
Week	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**	**Specific Learning Objective**	**Teachers Activities**	**Learning Resources**
1	1.1 Describe the relationship between undo and transactions	Discuss the relationship between Undo and transactions	PC loaded with Oracle Software and Connected to OHP	• Monitor and administer undo. • Configure undo retention. • Size the undo table space.	Guide students in their practical work.	Networked PC Lab. Loaded with Oracle Software.
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND THE PROCEDURES FOR IMPLEMENTING ORACLE DATABASE SECURITY.**			***GENERAL OBJECTIVE 2:*** **APPLY THE PROCEDURES FOR IMPLEMENTING ORACLE DATABASE SECURITY.**		
2 – 3	2.1 Describe the types of failure that may occur in an Oracle Database. 2.2 Explain the importance of checkpoints, redo log files, and archived log files	Explain the principle of least Privilege.	Textbooks Internet PC loaded with Oracle Software and Connected to OHP	• Apply the principle of least privilege. • Audit database activity. • Implement Fine – Grained Auditing.	Guide student in their practical work.	Networked PC Lab. Loaded with Oracle Software.
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND THE PROCEDURES FOR CONFIGURING THE ORACLE NETWORK ENVIRONMENT**			***GENERAL OBJECTIVE 3:*** **CARRY OUT PROCEDURES FOR CONFIGURING THE ORACLE NETWORK ENVIRONMENT**		
4 – 5	3.1 Describe database Control. 3.2 Explain the Significance of database Control. 3.3 Describe Oracle net service aliases. 3.4 State the difference between shared servers and dedicated servers.	Discuss 3.1 – 3.4 and give Practical examples where necessary	PC loaded with Oracle Software and connected to OHP Textbooks	• Use database control to create additional listeners. • Use database control to create Oracle Net service aliases. • Control Oracle Net Listeners. • Identify when to use shared servers versus dedicated	Demonstrate the use of database control. Guide students in their practical work.	Networked PC Laboratory loaded with appropriate Oracle Software.

				servers.		
Week	***GENERAL OBJECTIVE 4:* UNDERSTAND PROACTIVE MAINTENANCE**			***GENERAL OBJECTIVE 4:* CARRY OUT PROACTIVE MAINTENANCE**		
6 – 7	4.1 Describe the Automatic Workload Repository (AWR). 4.2 State the Significance of AWR. 4.3 Describe the Automatic Database Diagnostic Monitor (ADDM) 4.4 State the Significance of ADDM.	Using examples discuss 4.1 – 4.4	PC loaded with appropriate Oracle Software. Textbooks Magic Board	• Gather optimizer statistics • Manage the Automatic Workload Repository • Use the Automatic Database Diagnostic Monitor (ADDM). • Set warning and critical alert thresholds. • React to Performance issues.	Demonstrate and Guide Students in their practical work	PC loaded with Oracle Software in a networked laboratory
Week	***GENERAL OBJECTIVE 5:* UNDERSTAND PERFORMANCE MANAGEMENT**			***GENERAL OBJECTIVE 5:* CARRY OUT PERFORMANCE MANAGEMENT**		
8 – 9	5.1 State the use of enterprise manager. 5.2 Describe SQL tuning advisor. 5.3 State the significance of SQL tuning advisor. 5.4 Describe memory advisor.	Explain the function of enterprise manager. Explain the importance of SQL tuning advisor and memory advisor.	PC loaded with Oracle Software and Connected to OHP Textbooks	• Use enterprise manager to view performance. • Tune SQL by using SQL tuning advisor. • Use automatic shared memory management. • Use the memory advisor to size memory buffer.	Demonstrate the use of enterprise manager, SQL tuning advisor and memory advisor	PC loaded with Oracle Software in a networked Lab.
Week	***GENERAL OBJECTIVE 6:* UNDERSTAND BACKUP AND RECOVERY CONCEPTS**			***GENERAL OBJECTIVE 6:* CARRY OUT BACKUP AND RECOVERY CONCEPTS**		
10 – 11	6.1 Describe the types of failure that may occur in an Oracle Database. 6.2 Explain the importance of checkpoints, redo log files, and archived log files	Discuss the concert of backup and recovery.	Textbooks, Smart Board, PC loaded with Oracle Software and Connected to OHP	• Carryout tuning instance recovery • Configure a database for recoverability. • Configure ARCHIVELOG	Guide students in their practical work	PC loaded with appropriate Oracle Software in a networked Lab.

				mode.		

Week	*GENERAL OBJECTIVE 7:* **UNDERSTAND PROCEDURE FOR PERFORMING DATABASE BACKUPS AND DATABASE RECOVERY**			*GENERAL OBJECTIVE 7:* **PERFORM PROCEDURE FOR PERFORMING DATABASE BACKUPS AND DATABASE RECOVERY**		
12 – 13	7.1 State the significance of backup. 7.2 Explain the concept of database recovery. 7.3 State the importance of database recovery.	Use appropriate examples to explain 7.1 – 7.3	PC loaded with appropriate Oracle Software and Connected to OHP Textbooks Smart Board	• Create consistent database backups. • Backup your database without shutting it down. • Create incremental backups • Auto mate database backups. • Backup a control File to trace. • Monitor flash recovery area. • Recover from loss of a control file, Redo log file, System – critical data file and non system-critical data file.	Guide students in their practical work	Networked PC Laboratory loaded with appropriate Oracle Software.
Week	*GENERAL OBJECTIVE 8:* **UNDERSTAND PROCEDURE FOR PERFORMING FLASHBACK AND MOVING DATA**			*GENERAL OBJECTIVE 8:* **PERFORM PROCEDURE FOR PERFORMING FLASHBACK AND MOVING DATA**		
14 – 15	8.1 Describe flashback database. 8.2 Describe the general architecture of data Pump 8.3 Describe Flashback transaction query. 8.4 Describe SQL loader.	Discuss 8.1 – 8.4 with appropriate examples	Textbooks PC loaded with appropriate Oracle Software and Connected to OHP	• Restore the table contents to a specific point in time. • Recover from a dropped table. • Use Flashback Query to view the contents of the database as of any single point of time. • View transaction history or row with Flashback transaction query.	Carry out Practical and guide students	Networked OC Lab. Loaded with appropriate Oracle Software.

				• Use data pump export and import to move data between Oracle databases. • Load data with SQL Loader. • Use external tables to move data.		

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 232)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	20
Test	At least 2 progress tests for feed back.	10
Practical	To be assessed by the teacher	70
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: EXPERT ORACLE DATABASE ARCHITECTURE
AUTHOR/PUBLISHER: THOMAS KYTE, TONY DAVIS/APRESS L.P.

TITLE: ORACLE PL/SQL PROGRAMMING 4TH EDITION
AUTHOR: STEVEN FEVERSTEIN, BILL PRIBYL/O'BEILLY MEDIA, INC.

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **SOFTWARE PROJECT MANAGEMENT**				***COURSE CODE:*** **CSE 242**	***CONTACT HOURS:*** **1 – 0 – 3**	
GOAL:						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **UNDERSTAND SOFTWARE ARCHITECTURE**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 2	1.1 Explain software architecture 1.2 Explain the goals and importance of software architecture 1.3 Explain Object-oriented analysis 1.4 Explain component-oriented technology 1.5 Describe client server architecture and layers 1.6 Explain system integration 1.7 Describe making of business cases and model driven architecture	Describe software architecture in the object oriented and component oriented model	OHP/LCD connected to PC loaded with appropriate software	• Carry out practical on the covered topics • Use software architecture in the object oriented and component oriented sample model.	Oversee practical application of covered topics	Networked PC loaded with relevant software
Week	***GENERAL OBJECTIVE 2:*** **UNDERSTAND SOFTWARE DEVELOPMENT LIFECYCLE (SDLC)**					
3 – 4	2.1 Outline software development life cycle from requirement specification gathering to final development phase. 2.2 Explain various approaches to SDLC with respect to V/model, waterfall model.	Explain the various phases in development of enterprise software.	OHP/LCD connected to PC loaded with appropriate software	• Illustrate the phases in development of enterprise software.	Assist student to develop enterprise software	Networked PC loaded with relevant software

	2.3 Explain software reliability and quality metrix. 2.4 Explain the following: • Object oriented analysis • Design and programming • Component based solutions					
Week	***GENERAL OBJECTIVE 3:*** **UNDERSTAND PERFORMANCE MANAGEMENT**					
5 – 6	3.1 Explain performance goals of an enterprise application. 3.2 Explain user activity profile and target audience/users 3.3 Describe how to monitor application performance with usage of system, object, counters and instance monitors 3.4 Explain performance modelling, prediction and evaluation.	Explain how to monitor the performance of all units of a software system	OHP/LCD connected to PC loaded with appropriate software	• Illustrate how to monitor the performance of all units of software. • Demonstrate how to monitor the performance of an application	Assist student in the practical work.	Networked PC loaded with relevant software
Week	***GENERAL OBJECTIVE 4:*** **UNDERSTAND PROJECT DESIGN PATTERNS AND METHODOLOGIES.**					
7 – 8	4.1 Explain the following: • Interface • Class • Object adapters • Facade • Refactoring • Composites	Explain how to approach complex software designs	OHP/LCD connected to PC loaded with appropriate software	• Demonstrate how to approach complex software designs • Illustrate with inter-relationship diagrams, software development	Assist student in the practical work.	Networked PC loaded with relevant software

	4.2 Explain the following concepts: • Singletons and threads • Observer • Model-view-controller • Paradigm • Graphical User Interface (GUI) mediators			completion.		
9 – 10	4.3 Explain the following: • Tree diagrams • Prioritisation matrices • Process decision programme chart (PDPC) • Activity diagram 4.4 Explain steps for intelligent housekeeping, verification, validation, testing and evaluation of software system. 4.5 Explain software integration, extension and maintenance.	Describe various tree diagrams and activity diagram.	OHP/LCD connected to PC loaded with appropriate software	• Illustrate steps for intelligent housekeeping, verification and validation. • Evaluate steps for testing and evaluation of software system.	Assist student in the practical work.	Networked PC loaded with relevant software
Week	***GENERAL OBJECTIVE 5:*** **UNDERSTAND PROJECT MANAGEMENT PROCESS.**					
11 – 12	5.1 Explain project plans, approach and perspectives (binary, business or engineering perspectives). 5.2 Explain customer research, abuses and process of planning	Explain with examples project plans, project specifications and critical path assessment.	OHP/LCD connected to PC loaded with appropriate software Sample of project plans	• Design sample project plan	Check student performance in the project plan design.	Networked PC loaded with relevant software

	5.3 Explain the 'who', 'when' and 'how' of drafting project specifications, decision, decision-sizing, model questions and conflicts. 5.4 Explain critical path assessment, coding pipeline, measurement and control.					
13	5.5 Explain drafting, reviewing and revising of project vision and goals. 5.6 Explain good and bad idea scrutinization, idea management and building prototypes. 5.7 Outline the seven capability maturity model integration (CMMI) process: • Project planning • Project monitoring and control • Requirement management • Configuration management • Supplier agreement management • Measurement and analysis • Process and product quality assurance	Explain the CMMI process	OHP/LCD connected to PC loaded with appropriate software Sample of project plans	• Illustrate CMMI process with a sample project.	Assist student to carry out sample project	Networked PC loaded with relevant software

Week	*GENERAL OBJECTIVE 6:* **UNDERSTAND REQUIREMENT SPECIFICATION ANALYSIS**					
14 – 15	6.1 Explain data design modelling using: • Entity-relationship and object models • Normalisation • Entity relationship model validation • Data flow diagrams 6.2 Explain activity using: • Unified Modelling Language (UML) activity diagrams • Class diagrams • State transition diagrams • Sequence diagrams 6.3 Explain problem domain using customer interview, actors and use-cases 6.4 Explain timing and motivation using: • Scope of delivery • Business owner's view • Architect view 6.5 Explain people/organisation and location using: • Business owner's view • Human system and geographical span/network of solution deployment.	Explain with examples data models, activities and problem domains.	OHP/LCD connected to PC loaded with appropriate software Sample of project plans	• Analyse requirement specification with various diagrams and models.	Illustrate the requirement specification using all models.	Networked PC loaded with relevant software

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 242)	WEIGHTING (%)
Examination	Final Examination (written) to assess knowledge and understanding	40
Test/Assignment	At least 2 progress tests for feed back.	10
Practical	To be assessed by the teacher	50
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

TITLE: DESIGN FOR TRUSTWORTHY SOFTWARE: TOOLS, TECHNIQUES AND METHODOLOGY OF ROBUST SOFTWARE

AUTHOR/PUBLISHER: BIJAY K. JAYASUAL; PETER C. PATTON/PRENTICE HALL

PROGRAMME: **NATIONAL INNOVATION DIPLOMA IN COMPUTER SOFTWARE ENGINEERING**						
COURSE: **PROJECT**				***COURSE CODE:*** **CSE 252**	***CONTACT HOURS:*** **0 – 0 – 4**	
GOAL: **TO STIMULATE THE TECHNIQUES INVOLVED IN PLANNING AND IMPLEMENTATION OF A SUSTAINED PROJECT**						
COURSE SPECIFICATION: **THEORETICAL CONTENT**				**PRACTICAL CONTENT**		
	GENERAL OBJECTIVE 1: **WORK IN A TEAM TO INTEGRATE AND APPLY THE LEARNING OUTCOMES FROM THE PROGRAMME TO THE LATER STAGES OF A SUSTAINED PROJECT.**					
Week	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**	**Specific Learning Outcomes**	**Teacher's activities**	**Resources**
1 – 12				• Implement a client-based project in a professional manner. • Use appropriate techniques to plan the implementation of a sustained project requiring the allocation and management of multiple resources.	Provide a minimum of four hours supervision each week.	Requirements Document for a client-based project. Signed-off by the client. Project management software.
13 – 15				• Make a formal presentation of a final product to clients. • Obtain client acceptance of the implementation. • Justify their decisions, assess the results and learn from reflecting on the process in a written report.	Observe presentation and viva students.	Presentation software and projector.

ASSESSMENT STRUCTURE

TYPE OF ASSESSMENT	PURPOSE AND NATURE OF ASSESSMENT (CSE 252)	WEIGHTING (%)
Project Plan	To be assessed by the teacher	20
Project	To be assessed by team of invigilators	80
TOTAL		**100**

RECOMMENDED TEXTBOOKS & REFERENCES

ALL RELEVANT BOOK MATERIALS AND RESOURCES IN THE LIBRARY

LIST OF MINIMUM RESOURCES

The list below is required as minimum for teaching the **National Innovation Diploma Computer Software Engineering**.

TEACHING EQUIPMENT

I) 20 computer with at least 10 no. Networked terminals or workstations.
II) 2 Dot-matrix printers
III) 15kva UPS.
IV) Over Head Projector (OHP)/LCD

BASIC MAINTENANCE EQUIPMENT

I) Digital Multimeter
II) Set of Screw Drivers
III) Soldering Iron
IV) Oscilloscope Dual 100MHZ
V) I.C. Board
VI) Error Diagnostic Package
VII) Probe
VIII) Cleaning Kit

LICENCED SOFTWARE

I) MS VB.NET
II) JAVA/JAVA Development Beans (JDB)
III) C LANGUAGE / ASSEMBLER
IV) Relational Data Base Management System (RDBMS)
V) SQL
VI) C, C++

PACKAGES

I) Word processing
II) Spread sheet
III) Statistical
IV) Graphical
V) Educational

LIST OF RECOMMENDED BOOKS

S/N	COURSE	TITLE	AUTHOR/PUBLISHER
1	Introduction to Computers	Using Information Technology	Williams, Sawyer, Hutchinson Irwin McGraw-Hill
2	Introduction to Programming	Introduction to Java Programming: Fundamentals First, 6th Edition	Daniel Armstrong Prentice Hall
		System Software: An introduction to systems Programming	Ejame Stroustrup Addison Wesley
3	Introduction to Digital Systems	Digital Systems 6th Edition Principles & Applications	Ronald J. Tocci/Prentice Hall of India
4	Computer Packages	Using Information Technology	Williams, Sawyer, Hutchinson/Irwin McGraw-Hill
		Mastering Microsoft Office 2000 Professional Edition	Gini Courter, Annette Marquis/SYBEX
5	Introduction to System Analysis	System Analysis & Design Methods	Jeffrey L. Whitten, Lonnie D. Bentley/McGraw-Hill Companies
6	Logic and Linear Algebra	Further Mathematics	C. O. Oroge/Clemol Publishers
7	Introduction to Statistics	Statistics	Frank Owen & Ron Jones/Pitman Publishing
8	English and Communication	English Grammar for schools and colleges	Gbenga Fakuade/Paraclete Publishers
		Real Writing with Reading	Susan Anker/BED FORD/ST. MARTIN'S
9	Data Structures and Algorithm	Data Processing and Information Technology 10th Edition	Oliver & Chapman's/Martins the Printers Ltd
10	PC Upgrade and Maintenance	Upgrading and Repairing PCs 17th Edition	Scott Mueller/Wiley, John & Sons, Inc.
11	File Organisation & Management	Using Information Technology	Williams, Sawyer, Hutchinson/Irwin McGraw-Hill
12	Computer System Troubleshooting	Computer Repair with Diagnostic Flowchart: Troubleshooting, PC Hardware Problems from Boot Failure to Poor Performance	Morris Rosenthal/Foner Books
13	Computer and Society	Using Information Technology	Williams, Sawyer, Hutchinson/Irwin McGraw-Hill
14	Basic Hardware Maintenance	Computer Repair with Diagnostic Flowchart	Morris Rosenthal/Foner Books
15	Calculus	Further Mathematics	C. O. Oroge/Clemol Publishers.
16	Introduction to Systems Programming	System Software: An Introduction to Systems Programming	Ejame Stroustrup/Addison Wesley
17	Computer Programming Using O O BASIC	Object – Oriented Programming with Visual Basic.NET	Michael McMillan Cambridge University Press
18	Structure Querry Language	SQL Simplified	Cecelia Allison/Author house

19	ORACLE	Expert Oracle Database Architecture	Thomas Kyte, Tony Davis/Apress L.P
		Oracle PL/SQL Programming 4th Edition	Steven Feverstein, Bill Pribyl/O'Beilly Media, Inc
20	Entrepreneurship Development	Small Business Management	Soji Olokayo/Ola Jamon Printers & Publisher
21	System Programming Concept (C++)	The C++ Programming Language Special Edition	Ejame Stroustrup/Addison Wesley
		C Programming Language	Brian W. Kemighan, Dennis M. Ritchie/Pearson Education
22	Scientific Programming Language using Object Oriented JAVA	Introduction to JAVA Programming: Fundamentals First, 6th Edition	Daniel Armstrong/Prentice Hall
		CORE JAVA 2 (VOL 1 &2)	Cay S. Horstmann & Garry Cornell/ Prentice Hall
23	Management Information System	Management Information Systems 7th Edition	James A. O'Brier, George Marakas /Mc.Graw-Hill/Irwin
24	Software Project Management	Design for Trustworthy Software: Tools, Techniques and Methodology of Robust Software	Bijay K. Jayasual; Peter C. Patton /Prentice Hall

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