

COMP102 Introduction to Database

MODULE DETAILS

Course Location	: Freetown-Sierra Leone
Examiner	: Alhassan Mohammed Kamil
Contact details (email)	: alhassan.mmohammed@limkokwing.edu.sl
Co-Examiner	: Alhassan Mohammed Kamil
Pre-requisite	: NIL
Credits Amount	: 3 credits
Contact hours per week	: 3 hours (2 hours lecture & 1 hour tutorial)
No. of weeks	: 12 weeks contact + 1 mid semester break + 2 weeks final examination
No. of assignments	: 1
No. of written test+ exam	: 2 (1 Test + 1 Final Examination)
Portfolio	: N/A

Prepared by: Alhassan Mohammed Kamil

Approved by: AQA

Signature : 

Date: 15th October 2019

Signature:

Date:



Verified by : Oluwatosin Ayorinde

Signature : _____ Date _____

This document comprises the following:

- Essential Information
- Specific Module Information
- Module Rules & Regulations
- Grades
- Plagiarism
- Module Introduction
- Module Aims & Objectives
- Learning Outcome
- Specific Generic Learning Skills
- Syllabus + Lecture Outline
- References
- Assignment Schedule
- Assessment Criteria
- Specific Criteria

Other documents as follows will be issued to you on an ongoing basis throughout the semester:

- Handouts for Assignments
- Submission Requirements + Guidelines

1.0 MODULE INTRODUCTION

This module covers database design and the use of database management systems for applications. It introduces the concept of data management in an organization through relational database technology. Entity Relationship Diagrams (ERD's) and the Structured Query Language (SQL) as well as the complete Database Life Cycle (DBLC) will be covered.

2.0 MODULE AIMS AND OBJECTIVES

In this module students will be:

1. Introduced with basic concepts of database system – design, implementation and management.
2. Guided through different types of Database models
3. Introduced Metadata to describe the implementation of the ERD/EERD using an appropriate DBMS
4. Exposed ERD/EERD model to represent data storage
5. Taught basic SQL queries
6. Exposed to design and develop databases through database life cycle
7. Introduced with basics of Microsoft Access

3.0 LEARNING OUTCOME

At the end of this course, students will be able to:

1. Identify the motivations behind the development of database management systems
2. Compare non-relational database models and the relational database model.
3. Describe the underlying theoretical basis of the relational database model and apply the theories into practice
4. Demonstrate a Normalized database
5. Create SQL queries that meet user requirements
6. Develop a database based on a sound database design
7. Identify the components of the Microsoft Access

4.0 SPECIFIC GENERIC LEARNING SKILLS

At the end of the module, students are expected to acquire the following skills:

- To create and manipulate document files with Microsoft Access
- To create and manipulate document files with SQL

5.0 ESSENTIAL INFORMATION

- All modules other than electives are '**significant modules**'.

- As an indicator of workload one credit carries an additional 1- 2 hours of self-study per week. For example, a module worth 3 credits require that the student spends an additional 6 hours per week, either reading, completing the assignment or doing self-directed research for that module.
- Submission of **ALL** assignment work is compulsory in this module. A student cannot pass this module without having to submit **ALL** assignment work by the due date or an approved extension of that date.
- All assignments are to be handed on time on the due date. Students will be penalised **10 percent** for the first day and **5 percent** per day thereafter for late submission (a weekend or a public holiday counts as one day). Late submission, after the date Board of Studies meeting will not be accepted.
- Due dates, compulsory assignment requirements and submission requirements may only be altered with the consent of the majority of students enrolled in this module at the beginning/early in the program.
- Extensions of time for submission of assignment work may be granted if a medical certificate accompanies the application for extension.
- Overseas travel is not an acceptable reason for seeking a change in the examination schedule.
- Only the Head of Faculty can grant approval for extension of submission beyond the assignment deadline.
- Re-submission of work can only receive a **50%** maximum pass rate.
- Supplementary exams can only be granted if the level of work is satisfactory **AND** the semester work has been completed.
- Harvard referencing and plagiarism policy will apply on all written assignments.

6.0 SPECIFIC MODULE INFORMATION

- Attendance rate of **80%** is mandatory for passing module at the end of the semester.
- All grades are subject to attendance and participation.
- Absenteeism at any scheduled presentations will result in zero mark for that presentation.
- Visual presentation work in drawn and model form must be the original work of the student.
- The attached semester program is subject to change at short notice.

7.0 MODULE RULES AND REGULATIONS

Assessment procedure:

- These rules and regulations are to be read in conjunction with the **UNIT AIMS AND OBJECTIVES**
- All assignments/projects must be completed and presented for marking by the due date.
- Marks will be deducted for late work and invalid reasons.
- The student in person must deliver all assignments to the lecturer concerned. No other lecturer is allowed to accept students' assignments.
- All tests/examinations are compulsory.
- Students must sit the test/examination on the notified date.
- Students are expected to familiarise themselves with the test/examination timetable.
- Students who miss a test/examination will not be allowed to pass.
- **Students who miss TESTS or ASSIGNMENTS without a genuine reason WILL NOT be allowed to sit for the EXAMINATION, resulting in them repeating the module.**
- Any scheduling of tutorials, both during and after lecture hours, is **TOTALLY** the responsibility of each student. Appointments are to be proposed, arranged, confirmed, and kept, by each student. Failure to do so in a professional manner may result in penalty of grades. Tutorials **WITHOUT** appointments will also **NOT** be entertained.
- Note that every assignment is given an ample time frame for completion. This, together with advanced information pertaining deadlines gives you NO EXCUSE not to submit assignments on time.

8.0 PLAGIARISM, COPYRIGHT, PATENTS, AND OWNERSHIP OF WORK: STUDENT MAJOR PROJECT, THESES & WORKS

See LIMKOKWING, HIGH FLYERS HANDOUT, pg. 12

9.0 REFERENCES

- **Prescribed texts (Main Reading):** W. Stallings (2000), Data & Computer Communication. 6th Ed. Prenti **C. Coronel/Morris**, Database Systems Design, Implementation & Management, 11th Edition. Course Technology, 2014
- **Thomas Connolly ,Carolyn Begg** Database Systems: A Practical Approach to Design, Implementation, and Management 6th Edition , 2014
- **J. J. Adamski, K. T. Finnegan**,New Perspectives on Microsoft Access 2013, Comprehensive Enhanced Edition (Microsoft Office 2013 Enhanced Editions), 2015

10.0 ASSIGNMENT SCHEDULE

Assignment description	issue date	due date	%
Individual Assignment	week 2	week 4	10%
Exercise	week 6	week 6	5%
Mid Term Test	week 7	week 7	20%
Group Project	Week 4	week 12	20%
Attendance & Submission	week 1	week 14	5%
REVISION/FINAL EXAMINATION	week 13	week 16	40%

11.0 ASSIGNMENT CRITERIA

- Each assignment will be handed out with the project brief and will vary, depending on the teaching and learning objectives of the specific assignment.
- Each student will receive a completed assessment sheet back with their marks, thereby giving student feedback on each set criterion and the project as a whole.
- All submission must be made directly to the lecturer-in-charge.

12.0 GRADES

In the assessment of all student works, the grading system is standardized for all subjects in all programmes. The grading system used is as follows;

Marks	Grade	GPA& CGPA	Description
90-100	A+	4.00	Pass with distinction
85-89	A	4.00	
80-84	A-	4.00	
75-79	B+	3.67	Pass with Merit
74-70	B	3.33	
65-69	B-	3.00	
60-64	C+	2.67	Pass
55-59	C	2.33	
50-54	C-	2.00	
0-49	F	0.00	Fail



Grade	GPA& CGPA	Description
PX	1.00	Pass (supplementary work submitted)
PC	1.00	Pass Conceded
EXP	0.00	Exempted
X	0.00	Outstanding Supplementary Assessment
DNC	0.00	Did not Complete
DEF	0.00	Deferred
GNS	0.00	Grade Not Submitted
ANN	0.00	Result Annulled to Misconduct

13.0 ASSESSMENT CRITERIA

Process of grading and criteria used to determine the grades, passes and high distinctions.

90-100, A+, Publishable. Assignment is of sufficient substance and style to be submitted to a referred journal for publication or public presentation.

85-89, A, Outstanding. Superior understanding of the subject matter. Evidence of original thinking and an extensive knowledge base. Careful, concise, critical analysis with a clear and well-argued hypothesis based on the material. Shows a capacity to analyze, synthesize, and evaluate material. Shows a grasp of all the scholarly issues involved. Shows evidence of learning being extended beyond the initial learning situation. Clear thesis and conclusion. Well-researched and documented. Stylistically flawless.

80-84, A-, Excellent. Superior understanding of the subject matter. A careful analysis with some precision and attention to the details of the material. Shows some critical capacity and analytic ability and some original thinking. Needs a bit of fine-tuning of the details. Clear thesis and conclusion. Good research and documentation. Stylistically flawless.

75-79, B+, Very Good. Solid understanding of the subject matter. Good analysis and some critical reasoning. Reasonable understanding of relevant issues and familiarity with the material. Demonstrates a solid understanding of the relationship or connections among the basic concepts. Needs to be more concise or precise in details and more careful in forming arguments. Stylistically sound.

70-74, B, Good. Generally accurate account of the subject matter with acceptable analysis and some critical reasoning. Some interaction with relevant material. Demonstrates some understanding of the relationship or connection among the basic concepts. Needs more precision and attention to details and greater precision in the use of arguments. Some careless stylistic errors.

65-69, B-, Fine. Generally accurate description of the subject matter and an adequate grasp of the critical issues and ideas involved. Demonstrates rudimentary understanding of the relationship or connection among the basic concepts. Needs more attention to detail and better use of arguments. Some careless stylistic errors.

60-64, C+, Average. Acceptable treatment of the subject matter. Demonstrates an understanding of the basic facts, vocabulary, details, and elemental concepts. Shows an ability to deal with simple issues arising out of the material. Needs to explore the subject matter more fully and formulate ideas more clearly. Closer attention should be given to stylistic elements including sentence structure and paragraph organization.

55-59, C, Adequate. Generally acceptable treatment of the subject matter and issues. Demonstrates an awareness of the basic facts, vocabulary, details, and elemental concepts. Impressionistic or vague at points. Shows that the learning experience was profitable. Lacks clarity in formulating the issues and shows little or no evidence of critical reflection on the issues or data. Closer attention should be given to grammar, spelling, and punctuation.

50-54, C-, Minimally Acceptable. Adequate understanding and treatment of the data and issues, but imprecise, impressionistic or vague. Lacks clarity in expressing the issues and shows no evidence of critical reflection on the issues or data. Major problems related to issues of style.

0-49, F, Inadequate. Sloppy, imprecise or careless discussion of the material with little or no evidence of critical reflection. Stylistically flawed.

X Grade, In the case of a student who is granted supplementary work/s submission by the faculty, a grade X should be entered. An S grade is an interim grade until the supplementary work/s is/are submitted and assessed at the earliest possible timeframe. After a student has passed the supplementary work/s, the student shall be awarded with a normal grade. This is limited to 'C' band.

DNC (Did Not Complete), In the case of a student who has registered, is on a class list, has attended some classes, but has not submitted any work, a grade of DNC should be entered. A 0.00 grade point is attached to this grade.

GNS (Grade Not Submitted), In the case of an emergency or unforeseen circumstances and grade/s is/are yet to be submitted at time of Senate eg waiting for Internship to be completed, a GNS should be entered.

DEF (Deferred), In the case of a student who has registered, is on a class list, but has decided to drop the module after the approved dropped date ie. Week 4, a grade of DEF should be entered. There is no grade point attached to this grade.

EXP (Exempted), Refer to Section Exemption of Modules or Advance Standing and Credit Transfer in Academic Quality Assurance Manual.



UNIT SYLLABUS + LECTURE OUTLINE:

Week: 1

LECTURE 1:

Lecture Synopsis:

INTRODUCTION TO DATABASE MANAGEMENT

Introducing the Database
The Historical Roots of the Database
A File System Critique
Database Systems
Database Models

Week: 2

LECTURE 2:

Lecture Synopsis:

DATABASE ENVIRONMENT

A Logical View of Data
Entities and Attributes
Tables and Their Characteristics
Keys
Integrity Rules
The Data Dictionary
Relationships within the Relational Database
Data Redundancy

2 lecture and 1 hr lab



Issue:

Assignment 1

Week 3

LECTURE 3:

DBMS ARCHITECTURE

Understanding DBMS Architecture
Types of DBMS Architecture
Database Systems
The Database System Components
Database Systems and Organizational Factors

Week: 4

LECTURE 4:

Lecture Synopsis:

ENTITY RELATIONSHIP (E-R) MODELLING

Basic Modelling Concepts
The Entity Relationship Model
Developing an E-R Diagram
A Comparison of E-R Modelling System
E-R Diagrams

3 hrs lecture

Week: 5

LECTURE 5:

Lecture Synopsis:

DATABASE DESIGN (DATABASE LIFE CYCLE + DBA)

The Database Initial Study
Database Design
Implementation and Loading
Testing and Evaluation
Operation
Maintenance and Evolution

3 hrs lecture

Due:

Assignment 1



Week: 6

LECTURE 6:

Lecture Synopsis:

NORMALIZATION OF DATABASE TABLES

Database Tables and Normalization
Normalization and Database Design
Higher-Level Normal Forms
DE normalization
Creating and Printing a Form

A Quick Tour [Microsoft Access]

Starting Access
Opening an Existing Database
Opening an Access Table
Printing a Table
Creating and Printing a Query
Creating and Printing a Form
Creating, Previewing, and Printing a Report

Week: 7:

MIDTERM TEST

Week: 8

MID SEMESTER BREAK

Week 9

LECTURE 9:

QUERYING A DATABASE

Lecture Synopsis: Creating and Running a Query
Defining Table Relationships
Sorting Data in a Query
Filtering Data
Defining Record Selection Criteria for Queries
Defining Multiple Selection Criteria for Queries

CREATING FORMS AND REPORT

Lecture Synopsis: Creating a Form using the Form Wizard
Navigating a Form

Finding Data Using a Form
Creating a Form with a Main Form and a Sub-form
Creating a Report Using the Report Wizard
Inserting a Picture in a Report

Week: 10

LECTURE 10:

Lecture Synopsis:

STRUCTURED QUERY LANGUAGE (SQL)

Introduction to SQL
Data Definition Commands
Basic Data Management
Queries
Advanced Data Management Commands
More Complex Queries and SQL Functions.



3hrs lab

Issue:

Group Project

Week: 11

PROJECT PRESENTATION

Due Date:

Group Project (Presentation and Submission)

Week: 13

FINAL REVISION (MS ACCESS)

Week: 14/15

FINAL EXAMINATION WEEK (Date to be announced)
