



IYA ABUBAKAR COMPUTER CENTRE AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

Where Professionalism is Excellent



Diploma in Computer Science (Year II)

COURSE COVERAGE SYLLABUS: DCS210 – Introduction to Database Management (II)

1. Course Description:

“Introduction to Database Management (II)” is a practical-oriented course designed to help students learn how to properly design and develop complete data-driven software applications using relational database concepts. Students are expected to have been properly grounded in the fundamental principles of relational databases, especially with respect to the concepts of entities, entity attributes, entity relations, E-R modeling as well as some basic understanding of structured query language (SQL) as covered in DCS209.

2. Prerequisites:

Students are assumed to have acquired creditable knowledge and understanding of the course contents covered in DCS 105, DCS106 and DCS209.

3. Course Objective:

The course is designed to provide Diploma Students with basic-to-intermediate practical knowledge and skills required for successfully designing and building a complete, marketable database-driven software application that can serve the requirements of any individual or organization. Visual Basic 6.0 will be used to handle the graphical front-end and business logic; while Microsoft Access will serve as the back-end to store the data.

4. Course Coverage Outline:

The course is organized into four key areas of coverage, namely:

(a) Database normalization:

Database normalization is a process of systematically breaking a complex database table into simpler ones so as to efficiently organize data in that database. Students have been doing this all along in DCS209; but now they will get properly grounded in the formal theory and practices of database normalization.

(b) Introduction to programming with VB6.0:

- Students will learn about the basics of Visual Basic 6.0 programming language, how to design forms and the various elements, how to connect to a Microsoft Access database in VB6 and exchange data with the database, etc. Previous mastery of DCS105 and DCS106 will be an added advantage.

(c) Standard GUI application design with VB6.0 (course case study):

- Here, students will review the case study started in last semester's DCS209 and begin to design the graphical user interfaces of the application. You will recollect that the case study in point is on how to build a database-driven application for managing students' records at I.A.C.C., A.B.U. Zaria.

(d) Standard GUI application coding with VB6.0 (course case study):

- Here, students will begin to write serious codes for the GUI application in (c) above.

5. **Expected Learning Outcomes:**

Upon successful completion of this course, students will be able to:

- (i) Explain the concept of database normalization and normal forms.
- (ii) Design and develop Visual Basic GUI forms to capture the essence of a Windows application.
- (iii) Write correct Visual Basic codes to connect an application to Microsoft Access database.
- (iv) Write correct Visual Basic codes to perform required application functionalities.
- (v) Design and wrote codes to take advantage of report generation facilities built into Visual Basic 6.0.

6. **Detailed Lab Coverage:**

Week	Topics to Cover	Assignments Given	Assignments Due
1	General introduction to database normalization concepts.	Assignment #1	
2	General introduction to Visual Basic 6.0. Building simple applications with VB6: Simple ASCII Codes Generator, Vowels Counting Application, Simple Random Password Generator.	Assignment #2	Assignment #1 Due
3	General introduction to Visual Basic 6.0 continues with Fibonacci Series Generator, Quadratic Equations Solver.	Assignment #3	Assignment #2 Due
4	Database programming with VB6.0: Writing codes to connect to a data base, writing codes to read from a database table and display on VB forms, writing codes to send data from VB to database.		Assignment #3 Due
5	Revisions and first C.A. Test		
6 – 13	Course Case Study Design the main GUI forms of the case study project.		Last day to turn in all assignments!
	Writing codes for all the functionalities of the case study project.		
	Working on the reports generation aspects of the case study project.		
	General Revisions		
	Final Exam		

7. **Textbooks:**

Bespoke lecture notes shall be prepared by the Instructor and made available free-of-charge to the students. The lecture notes shall be in pdf format, and can be downloaded and printed from this url on the world wide web: <http://www.auwalgene.com/mystudents/lecturenotes>. Students are **strongly advised** to always go to that url to get the latest study materials and resources.