

Core Course
CC-114 Database Systems (Practicals)

Course Introduction:

The course is aimed to make students acquainted with the features of database tools. It aims to give emphasis on basic as well as advance features of MS Access by illustrating the features of various tools using sample problems.

Objectives:

- 1) To gain the knowledge of various tools of MS Access.
- 2) To develop skills for effective use of the MS Access tools
- 3) To make students familiar with basic as well as advance features of MS Access
- 4) To understand how to use the database in day to day life.

No. of Credits: 3

Practical Sessions per week: 3

Teaching Hours: 40 hours

| UNIT | TOPICS / SUBTOPICS | TEACHING HOURS |
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| 1 | Introduction to MS Access | 10 hours |
| | <ul style="list-style-type: none"> • Introduction to DBMS & Access <ul style="list-style-type: none"> ○ Creating a new Database in Access | 1 hrs |
| | <ul style="list-style-type: none"> • Tables <ul style="list-style-type: none"> ○ Introduction to table structure ○ Creating tables in Access (Through Wizard, Entering data and Design View) | 1 hrs |
| | <ul style="list-style-type: none"> • Data types of MS Access | 3 hrs |
| | <ul style="list-style-type: none"> • Fields <ul style="list-style-type: none"> ○ Concept of Primary key ○ Field Properties | 5 hrs |
| 2 | Tables, Relationships and Queries | 10 hours |
| | <ul style="list-style-type: none"> • Working with Datasheet view of table <ul style="list-style-type: none"> ○ Sorting and Searching ○ Filters – Filter by Selection, Advanced Filters | 1 hrs |
| | <ul style="list-style-type: none"> • Relationships in MS Access <ul style="list-style-type: none"> ○ Concept ○ Types of Relationship (one-to-one, one-to-many and many-to-many) ○ Necessary condition to create relationships in access ○ Concept of Foreign Key(Parent Table, Child Table) ○ Referential Integrity, Cascade Update, Cascade Delete | 4 hrs |

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| | <ul style="list-style-type: none"> • Queries(Design View) <ul style="list-style-type: none"> ○ Simple queries on single table ○ Adding calculated/derived fields using expression builder ○ Parameter Queries ○ Action Queries(Make Table, Append, Update and Delete) ○ Simple Queries on Multiple table(Joins: Inner,Left Outer, Right Outer) | 5 hrs |
| 3 | Advanced Queries and Forms | 10 hours |
| | <ul style="list-style-type: none"> • Queries(Design View) <ul style="list-style-type: none"> ○ Summary Queries(Queries using group function: SUM, MAX, MIN, COUNT, AVG) ○ Crosstab Queries ○ Find Duplicates Query Wizard and Find Unmatched Query Wizard | 3 hrs |
| | <ul style="list-style-type: none"> • Forms(Design View) <ul style="list-style-type: none"> ○ Sections on a form ○ Controls on a form (Label, Textbox, Combo box, List box, Command Button, Option Group, Tab Control, Option Button, Check box, Toggle Button) ○ Designing forms for multiple tables using Subform control | 7 hrs |
| 4 | Reports, Macros and Switchboard | 10 hours |
| | <ul style="list-style-type: none"> • Reports(Design View) <ul style="list-style-type: none"> ○ Simple Reports, Adding Calculated / Derived Controls ○ Simple Parameter Report ○ Label Report (Wizard) ○ Simple Group Reports ○ Advanced Group Reports on Fields with Text, Number, Date / Time datatypes. ○ Form based parameter report | 5 hrs |
| | <ul style="list-style-type: none"> • Macros <ul style="list-style-type: none"> ○ Simple Macro, Macro Groups, Autokeys Macro and Autoexec Macro | 5 hrs |
| | <ul style="list-style-type: none"> • Switchboard Manager | 1 hrs |
| | <ul style="list-style-type: none"> • Sample Project (Any one) <ol style="list-style-type: none"> 1. Payroll <ul style="list-style-type: none"> - Department (Deptno, Dept_Name, Location) - Employee_Master (Empno, Empname, Designation, DOB, DOJ, Gender, Salary and Deptno) - Employee_Detail (Empno, Salary_Date, Basic, DA, HRA, TA, PF, TAX) | 3 hrs |

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| <p>2. Inventory</p> <ul style="list-style-type: none"> - Customer (Cust_no, Cust_name, City) - Item (Item_no, Name, Price, Stock, Mfg_date) - Order_Master (Order_no, Cust_no, Order_Date, Vendor_Name) - Order_Details (Order_no, Item_no, Quantity) | |
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Note: Practicals and examination can be conducted using MS Access 2003 / MS Access 2007 interchangeably.

Following type of sample application can be asked in the final examination:

1. Create the following tables and create appropriate relationship among these tables.

- Customer (cid, name, address, city)
- Product (pid, name, desc, rate)
- Order(cid, pid, oid, odate, qty, amt)

Create a form for data entry of all the tables

Create a macro from which it should open the customer table, a beep sound, and msgbox Saying “BYE!!!!”

2. Create the following tables and create appropriate relationship among these tables

- Studentmaster(rno, name, age, address, phoneno, city)
- Studentdetail(rno, exam, m1, m2, total , percentage)

Create a form for data entry of student detail

Create a report having group by on rno. Each rno should display its exam details and calculate the sum of all the students in each exam.

Create a switchboard from which user can run report and form

3. Create the following tables and create appropriate relationship among these tables

- Invoice(Invoice_no, Invoice_date, Cust_code)
- Invoice_details(Invoice_no, Product_no, Quantity)

Create a parameterized report such it displays the records of a specific customer code.

Create a form for data entry of invoice.

Create a macro from which it should open the data entry form.

4. Create a database with following tables. Give appropriate data types, create primary key, foreign key and established relationship between the two tables.

- Employee (emp_code, emp_name, department, designation, salary)
- Leavetable(emp_code, leave_startdate, leave_type, no_of_leave)

The employee number should be displayed as EC001 (first character E, followed by C and then a 3 digit code)

The default value of the department should be sales

The leave type should be PL, SL or CL

Create the following queries:

List the details of employees who have taken PL or SL between 5/7/2010 and 31/12/2010.

List the employees who are in the sales or marketing department and get salary between 20000 to 30000.

Create a parameter query to display the details for a particular leave start date.

Create report which groups the record on the Department and the leave type and finds the total number of leave types for each department.

5. Create the tables for the following data set primary key, foreign key and field properties.
 - Sales (Item_code, Description, Price, quantity)
 - Supplier (Item_code, Supp_code, Supp_name, order_date, status, quantity_ord)
 - Default value of quantity should be 10 and the value entered should not be more than 5000.
 - Status should be P or C for pending and complete.
 - Supplier name should be in capital.

Create an update query which will update the description of item_code I101.

Create a report containing the fields and find the total price of item.

Create a macro which will run the update query automatically.

6. Create table for the following data set primary key, relationship and field properties
 - Product (Product_code, Prod_description, Price, Tot_stock)
 - Supplier (Product_code, Supp_code, Supp_name, order_date, status, quantity_ord)
 - Product code should start with PC followed by three numbers.
For eg:- PC005.
 - Description should only be: Ball Pen, cellotape, sharpeners, fountain pen, erasers and these should be entered using a pull down menu in the tables.
 - Supplier name should be in capital.

Create a form with all the fields. Also add a button to navigate from one record to other.

Create a report containing the field's product_code, Price, Description, Supp_name, status, order date and quantity grouped on the description field and find the total price of products and the total quantity ordered.

Create a switch board from which user can run report and form

Textbook:

New Perspectives on Microsoft Office Access 2007, Introductory

Publisher : CENGAGE Publications

By Joseph J. Adamski and Kathleen T. Finnegan

Reference Books:

1. Plain and Simple Access 2007

Publisher: PHI Publication

By Curtis Frye