C. U. Shah University, Wadhwan City
Faculty of Computer Science
Name of Program: Bachelor of Science (Information Technology)
(B.Sc.IT)
Semester : II
W.e.f. June – 2016
Teaching & Evaluation Scheme

Sr. No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester							Total Marks
								Theory				Practical			
			Th	Tu	Pr	Total		Sessional Exam		University Exam		Internal		Uni.	
								Marks	Hrs	Marks	Hrs	Pr	TW	Pr	
5	4CS02IDB2	Database Concepts with MS-Access	4	-	2	6	5	30	1.5	70	3	40	10	-	150

Objectives: Students will be able to:
- Create a simple relational databases using MS-Access
- Understand fundamental concepts of database, table, record, field and data type
- Create different objects like query, forms, reports, charts and modules.
- Insert, update and delete the records in the table.
- Retrieve the data using Select queries.

Pre-requisites: No prior knowledge of Access is required. Student should have reasonable general PC skills.

Course outline:

Sr. No.	Chapter Name	Course Contents	Lect. Hours
1	Overview	1.1 Data, Information. 1.2 Database, DBMS, RDBMS concept 1.3 Purpose and advantages of DBMS, 1.4 Various components of a DBMS, 1.5 DBMS V/s RDBMS	5

2	DataModel and Data Dictionary	2.1 The Hierarchical Model
		2.2 The Network Model
		2.3 The Relational Model
		2.4 Relational Structure
		    tables (relations), rows (tuples), domains, columns (attributes),
		    Entity, attributes, Types of entities, Relationships (all types)
		2.5 E-R Diagram with any one example.
		2.6 Introduction to data dictionary, Dr.E.F.Codd's rules
			10

3	Concept of database and its Objects	3.1 Introduction of Access Database and Objects : Table, Query, Form, Reports, Macros, Modules	3
4	Table Concept	4.1 Creating tables: design view, datasheet view, 4.2 Understanding field properties : field size, format,indexed, Required, Allow zerolength, Validation rule , Validationtext, Caption, Default value	5

5	Manipulation of Table Data	5.1 Working with Data Working with data including inserting, modifying and deleting records, Displaying records, Access Table data types 5.2 Working with key Primary keys, foreign key, composite key and candidate key, Defining relationship and setting up the referential integrity (Cascade update and Cascade Delete)	6
6	Queries	6.1Understanding and creating different queries, using select, Action (append, delete, update, make table)using wizard, Parameter query. 6.2 Understanding and implementing calculative functions and aggregate functions in queries, 6.3Use of wildcard and LIKE operator inquery.	10
7	Forms	7.1Understanding forms and its properties 7.2Creating forms: using wizard and design view 7.3Understanding and implementing necessary controls and their properties available in access 7.4Use of calculated controls in form	6
8	Reports	8.1Understanding Reports basics, 8.2 Creating reports through wizard and design view 8.3Sorting and grouping the report 8.4Adding calculated controls into report	6
9	Module	9.1 Concept of module 9.2Class module	3
		TOTAL	**55**

Learning Outcomes:

·Successful completion of this course will enable students to convert data and information into manageable and informative reports and analysis.

·By learning the basics of Microsoft Access, student can get grips with how to store that data effectively so that make it easy to update, query and report on it for a range of outputs.

Books Recommended:

1, "*Access 2013 Bible",* Michael Alexander, Wiley Publication.

2, "*2013Microsoft® Office System Step by Step*",Joyce Cox, Joan Preppernau Microsoft Press.

3, "*Microsoft Access 2013 Inside out",*Jeff Conrad, Microsoft Press

4, "*Microsoft Access 2013 New Perspectives*", Adamski, Cengage Learning.

5, "*No experience required Access*" Robinson, BPB Publication.

LAB – PRACTICAL LIST

DBMS Concept using MS-ACCESS (2013)

1. **Create STUDENT table with following structure.**

No.	Field Name	Data type	Remark
1	Rno	Number	Primary key
2	Sname	Text	
3	Address	Text	
4	City	Text	
5	Pincode	Number	
6	Gender	Text(1)	
7	Category	Text	Sc, st, open, sebc

a) Input 10 records in above table.
b) Display all data for rno> 5
c) Display all data for city="wadhwan"
d) Display all data for gender="m"
e) Display all data for pincode=363001
f) Display sname for city="wadhwan"
g) Display sname for gender="f"
h) Display all data for gender="M" and city="limbdi"
i) Display all data for rno=6
j) Display all data for category="sebc"
k) Display all data for gender="m" and category="open"
l) Display all data for category="st" or city="wadhwan"
m) Add new field "BirthDate" with data type date/time
n) Insert birthdate for all records.
o) Update all record with city="limbdi" for city="wadhwan"
p) Update all record with rno=100 for rno=2;
q) Update all record with sname="Ram" for rno=5
r) Update all record with sname="Sita" for category="sc"
s) Update all record with city="wadhwan" to city="limbdi"
t) Delete record for rno=100
u) Delete record for category="st"
v) Delete record for city="limbdi"
w) Delete record for rno=5 and city="wadhwan"
x) Delete record for sname="Ram"
y) Delete record for sname="sita" and category="open"
z) Delete record for category="sc"
aa) Create parameter query to input rno and display all records of entered rno using student table.

2. Create EMPLOYEE table with following structure.

No.	Field Name	Data type	Remark
1	Eno	Number	Primary key
2	Ename	Text	
3	Address	Text	
4	City	Text	
5	Pincode	Number	
6	Salary	Number	
7	Dept	Text	Sales, marketing, office, account

a) Input 10 records in above table.
b) Display all data for eno> 3
c) Display all data for city="wadhwan"
d) Display all data for salary>10000
e) Display all data for pincode=363001
f) Display ename for city="wadhwan"
g) Display ename for dept="office"
h) Display all data for dept="sales" and city="limbdi"
i) Display all data for eno=6 or dept="account"
j) Display all data for salary=15000
k) Display all data for city="wadhwan" and dept="marketing"
l) Display all data for salary=8000 or dept="office"
m) Add new field "designation" with data type Text
n) Insert data for designation field like "Manager", "Clerk", "accountant" for all records.
o) Update all record with city="limbdi" for city="wadhwan"
p) Update all record with eno=100 for eno=2;
q) Update all record with ename="Raj" for eno=5
r) Update all record with ename="Shalini" for dept="office"
s) Update all record with city="wadhwan" to city="limbdi"
t) Delete record for eno=100
u) Delete record for dept="sales"
v) Delete record for city="limbdi"
w) Delete record for eno=5 and city="wadhwan"
x) Delete record for ename="Raj"
y) Delete record for sname="shalini" and salary>5000
z) Delete record for salary=10000 or dept="accountant"
aa) Create parameter query to input ename and display all records of entered rno. Employee table.

3. Create STUD table with following structure.

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINT
RNO	NUMBER	3	PRIMARY KEY
SNAME	Text	25	
SURNAME	Text	25	
CITY	Text	12	
STREAM	NUMBER	25	
SEM	NUMBER	1	
GRADE	Text	20	
BISSUE	Text	3	

Queries:
1. Create table with necessary constraint attach to a specific field or columns.
2. Insert 10 records in all fields.
3. Change the size of city column to 25 using appropriate command.
4. Add new field 'STATE' and 'MOBILE' to student table.
5. Display all the details of student according to sem-wise [Either ascending or descending]
6. Display name, stream of student who is living in 'SURAT' and also securing either 'DISTINCTION' or 'FIRST CLASS'.
7. Display total no. of student by surname-wise.
8. Display total no. of student by stream-wise.
9. Display student name who is using book published by 'TATAMCGRAWHILL'
10. Display all the details of student securing 'DISTINCTION' in BCA stream.

4. Create BOOK table with following structure.

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINT
BNO	NUMBER	3	
RNO	NUMBER	3	FOREIGN KEY
BNAME	Text	25	
BAUTHOR	Text	25	
BPUB	Text	25	
BPRICE	NUMBER	5	
BQTY	NUMBER	5	
BTAMT	NUMBER	10	

Queries:
1. Create table with necessary constraint attach to a specific fields or columns.
2. Insert 10 records in all fields except [BTAMT].
3. Display total books available which is written by 'BALAGURUSWAMY' and having publication 'PHI'.
4. Display total books available whose starting letter of author is 'A' and having any of the publication 'PHI','BHARAT','ATUL'
5. Display all the details where book price is greater than 3500 and less than 8500
6. Display all the details where book price is greater than 3500 and less than 8500 and also having quantity greater than 100.
7. Display total no. of books by publication-wise.

8. Display all the details according to book price in descending order.
9. Display all the details according to alphabetical order of book name.
10. Display only author name which is not repeated.

5. Create TEACHER table with following structure.

Table: Teacher

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINT
TNO	NUMBER	3	
BNO	NUMBER	3	FOREIGN KEY
TNAME	Text	25	
TEXP	Number	2	
TDEG	Text	15	

Queries:
1. Display teacher name having experience greater than 5
2. Display teacher name having experience greater than 15 and must also be holding 'Ph.D' degree
3. Display student name, book name, teacher name who is using book of 'PHI' publication and student is studying in 'BCA' stream. [use join syntax]
4. Display teacher name who are taking subject in 'INFORMATION TECHNOLOGY' stream [use subquery].
5. Display teacher name, book author and city of student who belongs to 'MUMBAI', 'AHMEDABAD', 'RAJKOT' city [use join syntax]
6. Display name, stream of student who is living in 'SURAT' and also securing either 'DISTINCTION' or 'FIRST CLASS'.
7. Display student name who is using book published by either 'ATUL' or 'BHARAT' publication and teacher must be having experience greater than 4 and must be 'Ph.D' holder.
8. Display name of student who is using book having title 'ANSI C'
9. Display teacher not taking subject in 'B Com', 'M Com' and must be having post graduate degree.[use join syntax]
10. Display name of book which is maximum issued by student along with his/her name.

6. Create a form using Student table with wizard.
7. Create a form using Employee table with wizard.
8. Create a report to display all records of student table using wizard.
9. Create a report to display all records of employee table using wizard.
10. Create a report to display all records of Book table using design view.