Bachelor of Commerce

Syllabus for Vocational Computer Applications Paper – IX (English Medium) - Semester VI

Old Syllabus	Proposed Syllabus
Title of the Paper: **Introduction To Database Management System**	Title of the Paper : **Introduction To Database Management System**
Subject Code **605918**	Subject Code

Title of the Paper	Cr	L	P/T	D (EE)	EE (Theory)	EE (Practical)	IE	T
Introduction To Database Management System	4	2	4	2 hrs.	50	25	25	100

#L=Lectures per week, Cr=Credits, P/T=Practical/Tutorials, D=External Exam Duration, EE=External Examination, IE=Internal Examination, T=Total Marks

Old Syllabus	Proposed Syllabus
Objective : The student should develop skills and understanding in: I) the design methodology for databases and verifying their structural correctness II) implementing databases and applications software primarily in the relational model III) using querying languages, primarily SQL, and other database supporting software IV) applying the theory behind various database models and query languages V) implementing security and integrity policies relating to databases VI) the basic principles behind data warehousing and preparation for data analytics **Learning Outcomes**:	**Objective :** The student should develop skills and understanding in: 1. the design methodology for databases and verifying their structural correctness 2. implementing databases and applications software primarily in the relational model 3. using querying languages, primarily SQL, and other database supporting software 4. applying the theory behind various database models and query languages 5. implementing security and integrity policies relating to databases 6. the basic principles behind data warehousing and preparation for data analytics **Learning Outcomes**: At the end of the course the students will be able to: 1. have a broad understanding of database concepts and database management system software 2. have a high-level understanding of major DBMS components and their function 3. Explain the basic concepts of relational data model, entity-relationship model, relational database design, and SQL. 4. Design ER-models to represent simple database application scenarios 5. Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data

Old Syllabus		Proposed Syllabus							
Unit	Topic and Details Old Syllabus	Module	Module Specific Objectives	Content	Weightage	Instruction Time	Credits	Evaluation	
								IE Weightage	EE Weightage
I	**Introduction to Database Management System** **1. Data Base System** a. Data Information, Database, Database system, Database management system b. Application of DBMS c. Characteristics of DBMS d. Users of DBMS e. Advantage of DBMS f. Database Administrator, Functions of DBA, g. Database system	**Module I:** **Introduction to Database Management System**	To understand and evaluate the role of database management systems in information technology applications	**1. Data Base System** a. Data Information, Database, Database system, Database management system b. Application of DBMS c. Characteristics of DBMS d. Users of DBMS e. Advantage of DBMS f. Database Administrator, Functions of DBA, g. Database system structure/ overall architecture of DBMS **2. Data model (Introduction)** a. Model b. Data model c. Categories of Model d. Overview of Network e. Overview of Hierarchical f. Overview of Relational **3. Database Design** a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical,	50	30	2	10	30

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structure/ overall architecture of DBMS **2. Data model (Introduction)** a. Model b. Data model c. Categories of Model d. Overview of Network e. Overview of Hierarchical f. Overview of Relational **3. Database Design** a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set			Strong, Weak, Attributes, Key attributes, Value set (Domain) of attribute, Relationship, degree, b. Relational Data Model c. Domain, Attribute, Tuples, Relations constraint, Domain constraint, Entity integrity, Referential integrity, Key					

	(Domain) of attribute, Relationship, degree, b. Relational Data Model c. Domain, Attribute, Tuples, Relations constraint, Domain constraint, Entity integrity, Referential integrity, Key								
II	**SQL** **1. Structured query language** a. Introduction b. Features of SQL c. Components – DDL, DML, DCL	**Module II: SQL**	To know how to use Structured Query Language (SQL) to define and manipulate database information	**SQL** **1. Structured query language** a. Introduction b. Features of SQL c. Components – DDL, DML, DCL d. Data types in SQL e. Commands	50	30	2	15	45

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d. Data types in SQL e. Commands f. Create, Desc, Insert, Select, Delete, Update, Alter, Rename **2. Aggregate functions** Average, Min, Max, Count, Count (*), Greatest, Least, Sum **3. Character functions** Lower, Upper, Instr, Ltrim, Rtrim, Rpad, Lpad, Substar, Length **4. Numeric functions** Abs, Power, Round, Ceil, Floor, Sqrt, Trunc, Mod, Sign Join queries			f. Create, Desc, Insert, Select, Delete, Update, Alter, Rename **2. Aggregate functions** Average, Min, Max, Count, Count (*), Greatest, Least, Sum **3. Character functions** Lower, Upper, Instr, Ltrim, Rtrim, Rpad, Lpad, Substar, Length **4. Numeric functions** Abs, Power, Round, Ceil, Floor, Sqrt, Trunc, Mod, Sign Join queries **5. Declarative constraint** Primary key, Null, Check, Default, Not null, Foreign key **6. Transaction control command** Commit, Roll back, Save point **7. Triggers (introduction)** Concept, How they are used, Parts of trigger, Types of Trigger, Insert, Delete, Update triggers					

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5. Declarative constraint Primary key, Null, Check, Default, Not null, Foreign key **6. Transaction control command** Commit, Roll back, Save point **7. Triggers (introduction)** Concept, How they are used, Parts of trigger, Types of Trigger, Insert, Delete, Update triggers **8. Security specifications** Grant, Revoke				**8. Security specifications** Grant, Revoke				

Evaluation Scheme:

A. Internal Examination:

The internal testing should be continual and spread over the semester

The pattern of the internal exam would be as follows:

- 2 Class Test (Written) exam of 25 Marks

- Class Assignments of 25 Marks

Out of above three the average of best two will be considered as internal marks.

B. External Examination:

[Theory]

The pattern of the written exam would be as follows:

- The Theory exam of 50 Marks:

- Q. 1 will be compulsory (1 question from each unit will be asked for 20 marks)

- Any 2 questions from Q.2 to Q.5 should be answered, carrying 15 marks each.

[Practical]

- Practical exam of 25 marks

References:

A. **Essential Reading:**

   1. "Oracle – the complete reference", Bayross, Ivan: BPB Publications

   2. "Upgrade to oracle 8", Datapro Infoworld Ltd.

   3. "Database Design": Gio Widerhold.

B. **Additional Reading:**

   1. "Fundamentals of Database Systems": Elmarsi and Navathe.

   2. "Database System Concepts" : Korth, Siberschatz