Bachelor of Commerce

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

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

Title of the Paper	Cr	L	Р/Т	D (EE)	EE (Theory)	EE (Practical)	IE	т
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 :	Objective :					
The student should develop skills and understanding in:	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: 	 the design methodology for databases and verifying their structural correctness implementing databases and applications software primarily in the relational model using querying languages, primarily SQL, and other database supporting software applying the theory behind various database models and query languages implementing security and integrity policies relating to databases 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: have a broad understanding of database concepts and database management system software have a high-level understanding of major DBMS components and their function Explain the basic concepts of relational data model, entity-relationship model, relational database design, and SQL. Design ER-models to represent simple database application scenarios 					
	relational database and formulate SQL queries on data					

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

structure/ overall architecture of DBMS 2. Data model (Introduction) a. Model b. Data model c. Domain, Attribute, Tupies, Relationshi, degree, Tupies, Relations constraint, Domain constraint, Domain constraint, Futity c. Categories of Model d. Overview of Network e. Overview of Network e. Overview of Relational 3. Database Design a. Overview of Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set			 	 	
overall Attributes, Key architecture attributes, Value set of DBMS (Domain) of attribute, Relationship, degree, b. Relational bara Model (Introduction) c. Domain, Attribute, Tuples, Relations c. Domain of attribute, Constraint, Domain c. Costraint, Domain C. Categories of integrity, Referential Model integrity, Referential Model integrity, Key d. Overview of integrity, Key Network e. Overview of Relational regrets 3. Database Design Design, E-R diagram, ettributes, Key set, Entity types, Logical, Physical, Strong, Weak, Key attributes, Value set	structure/	Strong, Weak,			
architecture attributes, Value set (Domain) of attribute, of DBMS Relationality, degree, Relationality, degree, 2. Data model b. Relational Data Model Data Model a. Model constraint, Domain Data Model b. Data model constraint, Domain Data Model c. Categories of integrity, Referential Integrity, Key d. Overview of Integrity, Key Integrity, Key d. Overview of Integrity, Key Integrity, Key a. Database Design Integrity, Key b. Database Design, E-R Integrity, Key d. Overview of Integrity, Key Integrity, Key b. Database Design, E-R Integrity, Key gargam, Entity, Entity Strong, Weak, trity, Entity Strong, Weak, Integrity, Integrity, Integrity, Integrity, Key Yalue set Integrity, Key Integrity, Integrit	overall	Attributes, Key			
of DBMS (Domain) of attribute, Relationship, degree, Image: Comparison of the second of the sec	architecture	attributes, Value set			
2. Data model Relationship, degree, (Introduction) b. Relational Data Model a. Model c. Domain, Attribute, b. Data model constraint, Domain c. Categories of integrity, Referential Model integrity, Referential Model integrity, Key d. Overview of network e. Overview of network e. Overview of network g. Overview of network e. Overview of network g. Overview of network e. Overview of network g. Overview of network b. Database Design Design, E-R diagram, diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	of DBMS	(Domain) of attribute,			
2. Data model (Introduction) b. Relational Data Model a. Model c. Domain, Attribute, Tuples, Relations b. Data model constraint, Domain c. Categories of integrity, Referential Model integrity, Referential Model integrity, Key d. Overview of Hierarchical f. Overview of Relational Relational Storay Database Design Design, E-R diagram, Entity, Entity set, Entity set, Entity set, Entity set, Entity set, Entity set, Strong, Weak, Key attributes, Key attributes, Key attributes, Value set		Relationship, degree,			
(Introduction) c. Domain, Attribute, Tuples, Relations a. Model constraint, Domain b. Data model constraint, Domain c. Categories of Model integrity, Referential integrity, Referential integrity, Key integrity, Referential integrity, Key d. Overview of Network overview of Relational integrity, Referential integrity, Key integrity, Referential integrity, Key 3. Database Design overview of Relational integrity, Referential integrity, Key integrity, Referential integrity, Key a. Overview of Relational overview of Relational integrity, Referential integrity, Key integrity, Referential integrity, Key batabase Design overview of Relational integrity, Referential integrity, Key integrity, Referential integrity, Key a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set integrity, Referential integrity, Key	2. Data model	b. Relational Data Model			
a. Model Constraint, Domain b. Data model constraint, Domain c. Categories of integrity, Referential Model integrity, Referential Model integrity, Key d. Overview of response Network e e. Overview of response Hierarchical response f. Overview of response Relational response 3. Database pesign a. Overview of response Design, E-R diagram, Entity, Entity set, Entity set, Entity set, Entity yes, Logical, physical, Strong, Weak, strong, Weak, Attributes, Key attributes, Key value set set	(Introduction)	c. Domain, Attribute,			
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, Value set	. ,	Tuples, Relations			
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 set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	a. Model	constraint. Domain			
c. Categories of Model 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	b. Data model	constraint. Entity			
Model integrity, Key d. Overview of Network integrity, Key e. Overview of Hierarchical integrity, Key f. Overview of Relational generative state 3. Database Design generative state Design, E-R generative state diagram, Entity, Entity generative state set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set generative state	c. Categories of	integrity. Referential			
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, Key attributes, Value set	Model	integrity. Key			
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	d. Overview of				
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	Network				
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	e. Overview of				
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	Hierarchical				
Relational Relational S. Database Design a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	f. Overview of				
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	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					
Design a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	3. Database				
a. Overview of Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	Design				
Database Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	a. Overview of				
Design, E-R diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	Database				
diagram, Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	Design, E-R				
Entity, Entity set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	diagram.				
set, Entity types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	Entity. Entity				
types, Logical, Physical, Strong, Weak, Attributes, Key attributes, Value set	set. Entity				
Physical, Strong, Weak, Attributes, Key attributes, Value set	types. Logical.				
Strong, Weak, Attributes, Key attributes, Value set	Physical.				
Attributes, Key attributes, Value set	Strong, Weak,				
Key attributes, Value set	Attributes,				
attributes, Value set	Kev				
Value set	, 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								
11	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

d. Data types in		f. Create, Desc, Insert,			
SQL		Select, Delete, Update,			
e. Commands		Alter, Rename			
f. Create, Desc,					
Insert, Select,		2. Aggregate functions			
Delete,		Average, Min, Max, Count,			
Update, Alter,		Count (*), Greatest, Least,			
Rename		Sum			
2. Aggregate		3. Character functions			
functions		Lower, Upper, Instr, Ltrim,			
Average. Min.		Rtrim, Rpad, Lpad, Substar,			
Max. Count.		Length			
Count (*).					
Greatest, Least.		4. Numeric functions			
Sum		Abs. Power, Round, Ceil.			
•••••		Floor, Sart, Trunc, Mod. Sign			
3. Character					
functions		loin queries			
Lower Unner					
Instr I trim		5 Declarative constraint			
Rtrim Rnad		Primary key Null Check			
Inad Substar		Default Not null Foreign key			
Longth		Derualt, Not hall, Foreigh key			
Length		6 Transaction control			
4 Numeric		command			
functions		Commit Boll back Save point			
Abs Power		commit, Non back, save point			
Round Ceil		7 Triggers (introduction)			
Floor Sart		Concept How they are used			
Trunc Mod Sign		Parts of trigger Types of			
Trutic, Widu, Sigil		Trigger Insert Doloto			
		Lindato triggoro			
uoni queries		Opuale inggers			

5. Declarative		8. Security specifications			
constraint		Grant, Revoke			
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					

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