		Theory	Practical		
Week	Lect. day	Topic (Including assignment / test)	Pract. Day	Topi c	
1st	1st	<b>1. Introduction</b> a) Distinction between analog and digital signal.	1st	Verification and interpretation of truthtables for AND, OR, NOT gates	
	2nd	b) Applications and advantages of digital signals.	2nd	Verification and interpretation of truth tables for AND_OR_NOT gates	
	3rd	<ul><li>2. Number System</li><li>a) Binary, octal and hexadecimal number</li><li>system: Conversion from decimal to binary</li></ul>	3rd	Verification and interpretation of truthtables for AND, OR, NOT gates	
2n d	1st	Conversion from hexadecimal to binary	1st	Verification and interpretation of truthtables for NAND, NOR gates	
	2nd	Conversion from binary to decimal	2nd	Verification and interpretation of truth tables for NAND, NOR gates	
	3rd	Conversion from binary to hexadecimal	3rd	Verification and interpretation of truthtables for Exclusive OR (EXOR) gate	
3rd	1st	b) Binary addition and subtraction including binary points. 1's and 2's complement method of addition/subtraction.	1st	Verification and interpretation of truthtables for Exclusive OR (EXOR) gate	
	2nd	<ul><li>3. Codes and Parity</li><li>a) Concept of code, weighted and non-weighted codes</li></ul>	2nd	Verification and interpretation of truthtables for Exclusive OR (EXOR) gate	
	3rd	Examples of 8421, BCD,Excess-3 and Gray code.	3rd	Verification and interpretation of truth tables forExclusive NOR(EXNOR) gate	
4th	1st	b) Concept of parity, single and double parity, Error detection	1st	Verification and interpretation of truth tables forExclusive NOR(EXNOR) gate	
	2nd	<ul> <li>4. Logic Gates and Families</li> <li>a) Concept of negative and positive</li> <li>logic NOT, AND, OR, NAND, NOR,</li> <li>EXOR Gates</li> <li>b) Definition, symbols and truth tables of</li> </ul>	2nd	Verification and interpretation of truth tables forExclusive NOR(EXNOR) gate	
	3rd	NAND & NOR as universal (c) Introduction to TTL and CMOS gates.logic families	3rd	Realisation of logic functions with the helpof NAND gate	
5th	1st	<ul><li>5. Logic Simplification</li><li>a) Postulates of Boolean algebra, De Morgan's Theorems.</li></ul>	1st	Realisation of logic functions with the help of NAND gate	
	2nd	Implementation of Boolean (logic) equation with gates	2nd	Realisation of logic functions with the helpof NOR gate	
	3rd	Implementation of Boolean (logic) equation with gates	3rd	Realisation of logic functions with the helpof NOR gate	
6th	1st	Karnaugh map (2 variables) and simple application in developing combinational logic circuits	1st	To design a half adder using XOR gate and verification of its operation	
	2nd	Karnaugh map (3 variables) and simple application in developing combinational logic circuits	2nd	To design a half adder using XOR gate and verification of its operation	
	3rd	Karnaugh map (4 variables) and simple application in developing combinational logic circuits	3rd	To design a half adder using NAND gate and verification of its operation	
7th	1st	Karnaugh map (4 variables) and simple application in developing combinational logic circuits	1st	To design a half adder using NAND gate and verification of its operation	
	2nd	6. Arithmetic circuits Half adder circuit, design and implementation.	2nd	Construction of a full adder circuit using XOR gate and verify its operation	
	3rd	Full adder circuit, design and implementation.	3rd	Construction of a full adder circuit using NAND gate and verify its	
				n operatio	

8th		4 bit adder circuit		Construction of a full adder
	1st		1st	circuit using NAND gate and
				verify its
				operatio
				n
		7. Decoders, Multiplexeres, De Multiplexeres and Encoder		Verification of truth table for
	2nd	a) Four bit decoder circuits for 7 segment display and decoder/driver ICs.	2nd	positive edgetriggered IC flip-
				flops of D latch
	2.1	b) Basic functions and block diagram of MUX with different Ics	2.1	Verification of truth table for
	3rd		3rd	positive edgetriggered IC of D
				flip-flop
9th	1 et	b) Basic functions and block diagram of DEMUX with different Ics	1 et	Verification of truth table for
	150		150	positive edge
				triggered IC of JK flip-flops.
	2nd	c) Basic functions and block diagram of Encoder	2nd	Verification of truth table for
				Negative
				latch
		8. Latches and flip flops		Verification of truth table for
	3rd	a) Concept and types of latch with their working and applications	3rd	negativeedge triggered IC of D
				flip-flop
10th		b) Operation using waveforms and truth tables of RS & T flip flops.		Verification of truth table for
	1st		1st	negativeedge triggered IC of
				JK flip-flops.
	and	Operation using waveforms and truth tables of D & Master/Slave flip flops.	and	Verification of truth table
	2110		2110	for level triggered IC flip-
				flops of D latch
	3rd	Operation using waveforms and truth tables of JK flip flops. c) Difference	3rd	Verification of truth table
	510	between a latch and a flip flop	510	for leveltriggered IC of D
				flip-flop
11th	1st	9. Counters	1st	Verification of truth table for
	100	a) introduction to Asynchronous and Synchronous counters	100	triggered IC of JK flip-flops.

	2nd	b) Binary counters	2nd	Verification of truth table for encoder Ics
	3rd	c) Divide by N ripple counters, Decade counter	3rd	Verification of truth table for decoder ICs
12th	1st	Ring counter	1st	Verification of truth table for Mux
	2nd	<b>10. Shift Register</b> Introduction and basic concepts including shift left and shift right.	2nd	Verification of truth table for DeMux
		a) Serial in parallel out, serial in serial out		To design a 4 bit SISO shift
	3rd		3rd	registers usingJK/D flip flops and
				verification of their operation.
13th		Parallel in serial out, parallel in parallel out.		To design a 4 bit SIPO shift
	1st		1st	using JK/D flip flops and verification of their operation.
		b) Universal shift register		To design a 4 bit PISO shift
	2nd		2nd	using JK/D flip flops and
				verification of their operation.
	3rd	11. A/D and D/A Converters		To design a 4 bit PIPO shift
		Working principle of A/D and D/A converters	3rd	registers using JK/D flip
				flops and verification of
				their operation.
14th	1 of	Brief idea about different techniques of A/D conversion Study of	1 ct	To design a 4 bit ring counter and
	150	Stair step Ramp A/D converter	180	verify itsoperation.
	2nd	Dual Slope A/D converter	2nd	To design a 4 bit ring counter and
		Successive Approximation A/D Converter	210	its operation
		Detail study of :		To design a 4 bit ring counter
	3rd	Binary Weighted D/A converter	3rd	and verifyits operation
	ora	• R/2R ladder D/A converter	514	
15th	1st	• K/2R ladder D/A converter Applications of A/D and D/A converter.	1st	Use of Asynchronous Counter ICs (7490or 7493)
		12. Semiconductor Memories		Use of Asynchronous Counter
	2nd	Memory organization, classification of semiconductor memories (RAM, ROM, PROM, EPROM, EEPROM)	2nd	ICs (7490or 7493)
	3rd	Static and dynamic RAM, Introduction to 74181 ALU IC	3rd	Use of Asynchronous Counter
	510		510	ICs (7490or 7493)

## Govt. Polytechnic, Jhajjar Lesson Plan (DBMS)

Name of the Faculty Discipline Semester				Harish Kumar Kaushik Computer Engg. 3rd		
Subject	:		DBMS			
Lesson	Plan Dura	tion	15 weeks			
Work L	oad (Lectu	re/Practical) per week (In hour)	Lecture-02,	Practical-08		
		Theory		Practical		
Week	Lecture	Topic (Including Assignment & Test)	Practical	Торіс		
	Day		Day			
1	1	Database Systems; Database and its purpose,	1	Exercises on creation and modification		
		Characteristics of the database approach, Advantages and		of structure of tables.		
		disadvantages of database systems.	2	Continue Previous Practical		
	2	Classification of DBMS Users; Actors on the scene, Database	3	Continue Previous Practical		
		Administrators, Database Designers, End Users, System Analysts	4	File Preparation and Checking		
2	1	Application Programmers, Workers behind the scene	1	Exercises on inserting and deleting values		
		(DBMS system designers and implementers, tool		from tables		
		developers, operator and maintenance personnel)	2	Continue Previous Practical		
	2	Data models, schemas, instances, data base state	3	Continue Previous Practical		
			4	File Preparation and Checking		
3	1	DBMS Architecture; The External level, The conceptual level. The internal level. Mappings.	1	Exercises on querying the table (using select command).		
			2	Continue Previous Practical		
	2	Data Independence; Logical data Independence, Physical	3	Continue Previous Practical		
		data Independence. Database Languages and Interfaces;	4	File Preparation and Checking		
		DBMS Language, DBMS Interfaces.				
4	1	Classification of Database Management Systems-	1	Practicing Practical 1-4		
		Centralized, Distributed, parallel and object based.	2	Continue Previous Practical		
	2	Revision	3	Continue Previous Practical		
			4	Continue Previous Practical		
5	1	Data Models Classification; File based or primitive models,	1			
		traditional data models, semantic data models. Entities and		Exercises on using various types of joins		
		Attributes, Entity types and Entity sets	2	Continue Previous Practical		
	2	Key attribute and domain of attributes, Relationship among	3	Continue Previous Practical		
		entities, Database design with E/R model	4	File Preparation and Checking		
6	1	Relational Model Concepts: Domain, Attributes, Tuples	1	Practicing Practical 5 again		
		cardinality, keys (Primary, Secondary, foreign, alternative	2			
		keys) and Relations		Continue Previous Practical		
	2	Relational constraints and relational database schemes;	3	Continue Previous Practical		
		Domain constraints, Key constraints and constraints on	4	File Preparation and Checking		
		Null				
7	1	Relational databases and relational database schemes,	1	Exercises on using functions provided by		
		Entity integrity, referential integrity and foreign key.		database package		
		Comparison b/w E/R model and Relational model.	2	Continue Previous Practical		
	2	Revision	3	Continue Previous Practical		
			4	File Preparation and Checking		
8	1	Non-loss decomposition and functional dependencies	1	Practicing Practical 5 again		
			2	Continue Previous Practical		
	2	First, Second and Third normal forms, Boyce/Codd normal	3	Continue Previous Practical		
		form, denormalization.	4	File Preparation and Checking		
9	1	Creating and using indexes, creating, and using views.	1	Exercises on commands like Grant, Revoke, Commit and Rollback etc		
			2	Continue Previous Practical		
	2	Database security, process controls, Database protection,	3	Continue Previous Practical		
		grant and revoke	4	File Preparation and Checking		
10	1	Revision	1	Practicing Practical 4-6		
	1	1	2	Practicing all Practical		

10	2	SQL* DDL (Data Definition Languages): Creating Tables, Creating a table with data from another table	3	Practicing all Practical
			4	File Preparation and Checking
11	1	Inserting values into a table, updating columns of a Table, Deleting Rows, Dropping a Table	1	Design of database for any application
			2	Continue Previous Practical
	2	DML (Data Manipulation Language): Database Security and	3	Continue Previous Practical
		Privileges, Grant and Revoke Command	4	File Preparation and Checking
12	1	Maintaining Database Objects, Commit and Rollback	1	Design of database for any application
			2	Practicing SQL Commands
	2	various types of select commands	3	Practicing SQL Commands
			4	Practicing SQL Commands
13	1	various types of select commands	1	Practicing SQL Commands
			2	Practicing SQL Commands
	2	various types of joins	3	Practicing SQL Commands
			4	Practical test 1
14	1	sub query, aggregate functions	1	Practical test 2
			2	Practical test 3
	2	Challenges of My SQL.	3	Practical test 4
			4	Practical test 5

## Lesson Plan

Name of the Faculty: Smt Rekha Jangir

Semester:3RD

Subject:Programming in C

Lesson	esson plan duration: 15 weeks						
	Theory						
Week	Days	Syllabus	Practi	Practical			
				Programming exercises on executing and			
	1		G1	editing a C program.			
	Ţ	Steps in development of a		Programming exercises on executing and			
		program,	G2	editing a C program.			
1							
-	2	Flow charts, Algorithm		Programming exercises on defining variables			
		development	G1	and assigning values to variables.			
	3			Programming exercises on defining variables			
		Programme Debugging,	G2	and assigning values to variables.			
				Programming exercises on defining variables			
	1		G1	and assigning values to variables.			
	-						
2		I/O statements, Constants,		Programming exercises on defining variables			
2		variables and data types	G2	and assigning values to variables.			
	2			Programming exercises on arithmetic and			
		Operators & Expressions,	G1	relational operators.			
	3			Programming exercises on arithmetic and			
	5	Operators & Expressions,	G2	relational operators.			
	1			Programming exercises on arithmetic			
			G1	expressions and their evaluation.			
	-	Unformatted and Formatted		Programming exercises on arithmetic			
		IOS, Data Type Casting	G2	expressions and their evaluation.			
3							
	2	Unformatted and Formatted		Programming exercises on arithmetic			
		IOS, Data Type Casting	G1	expressions and their evaluation.			
		Decision making with IF –					
	3	statement, IF – Else and Nested		Programming exercises on arithmetic			
		1F	G2	expressions and their evaluation.			
				_			
	1	Decision making with IF –		Programming exercises on formatting			
		statement, IF – Else and Nested	G1	input/output using print f and scan f and their			
		IF	G2	return type values.			
4							
	2			Programming exercises on formatting			
		While and do-while, for loop,	G1	input/output using print f and scan f and their			
	3						
	-	while and do-while, for loop,	G2	return type values.			
	1		G1	Programming exercises using if statement.			

	-	Break. Continue, goto and		
5		switch statements	G2	Programming exercises using if statement.
	2	Break. Continue, goto and		
	2	switch statements	G1	Programming exercises using if – Else.
	3	Revision	G2	Programming exercises using if – Else.
			G1	Programming exercises on switch statement.
	1	Introduction to pointers,		
		Address operator and pointers	G2	Programming exercises on switch statement.
6		Declaring and initializing		
	2	pointers, Single pointer,	G1	Programming exercises on switch statement.
		Introduction to functions,		
	3	Function Declaration, calling,		
	-	definition	G2	Programming exercises on switch statement.
		Introduction to functions.		
	1	Function Declaration. calling.		Programming exercises on do – while.
	-	definition	G1	statement.
		Parameter Passing. Call - by		
	2	value/reference. Global and		Programming exercises on do – while.
7	-	Local Variables	G2	statement.
			-	
		Parameter Passing, Call - by	G1	Programming exercises on for – statement.
	3	value/reference. Global and	-	
		Local Variables	G2	Programming exercises on for – statement.
			-	
	1		G1	Programming exercises on for – statement.
		Introduction to Arrays Array		
8		Declaration. Length of array	G2	Programming exercises on for – statement.
-		Single and muti dimensional		
	2	array	G1	Simple programs using pointers.
	3	Arrays of characters	G2	Simple programs using pointers.
	1	Introduction of Strings.String	G1	Programs on one-dimensional array.
		declaration and definition	G2	Programs on one-dimensional array.
9		String related function i.e.		
-	2	strlen. strcpy, strcmp	G1	Programs on two-dimensional array.
	3	Passing an array to function	G2	Programs on two-dimensional array.
	-		G1	Programs on two-dimensional array.
	1	Pointers to an array and strings.	G2	Programs on two-dimensional array.
				Programs for putting two strings together. (ii)
10	2	Revision	G1	Programs for comparing two strings.
				Programs for putting two strings together. (ii)
	3	Declaration of structures	G2	Programs for comparing two strings.
	1	Accessing structure members	G1	Simple programs using functions
11	2	Structure Initialization.	G2	Simple programs using functions
			G1	Simple programs using functions
	3	Pointer to a structures UNION	G2	Simple programs using functions
			G1	Simple programs using structures.
	1	Opening and Closing of File	G2	Simple programs using structures
12	2	Revision	G1	Simple programs using structures
			<u> </u>	

	3	Revision	G2	Simple programs using structures.
	1		G1	Simple programs using union.
12		Modes of Accessing Files	G2	Simple programs using union.
15	2	Revision	G1	Simple programs using union.
	3	Revision	G2	Simple programs using union.
	1		G1	Program on Reading and Writing data to a file.
14		Reading and Writing in the File	G2	Program on Reading and Writing data to a file.
14	2	Revision	G1	Program on Reading and Writing data to a file.
	3	Revision	G2	Program on Reading and Writing data to a file.
	1		G1	Revision
45	1	Revision	G2	Revision
15	2	Revision	G1	Revision
	3	Revision	G2	Revision