

(CS102) Computer Architecture and Organization

COURSE OBJECTIVES:

1. Discuss the basic concepts and structure of computers.
2. Understand concepts of register transfer logic and arithmetic operations.
3. Explain different types of addressing modes and memory organization.
4. Learn the different types of serial communication techniques.
5. Summarize the Instruction execution stages.

COURSE OUTCOMES:

1. Understand the theory and architecture of central processing unit.
2. Analyze some of the design issues in terms of speed, technology, cost, performance.
3. Design a simple CPU with applying the theory concepts.
4. Use appropriate tools to design verify and test the CPU architecture.
5. Learn the concepts of parallel processing, pipelining and interprocessor communication.
6. Understand the architecture and functionality of central processing unit.
7. Exemplify in a better way the I/O and memory organization.
8. Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.

Unit wise Learning Objectives:

UNIT- I

1. Discuss the basic concepts and structure of computers.
2. Summarize the functional units of computer.
3. Analyze some of the design issues in terms of speed, technology, cost, performance.
4. Explain different types of logic gates.
5. Minimize the logic expressions.

UNIT-II

1. Explain different types of binary codes and its conversions.
2. Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
3. Understand concepts of register transfer logic.
4. Summarize the types of micro operations.
5. Design logic circuits for different micro operations.

UNIT-III

1. Summarize the Instruction execution stages.
2. Explain different types of addressing modes.
3. Understand concepts of Hardwired control and micro programmed control.
4. Discuss different types of computer arithmetic operations.
5. Differentiate between RISC and CISC.

UNIT-IV

1. Learn the concepts of parallel processing, pipelining.
2. Understand the architecture and functionality of central processing unit.

3. Discuss about different types of peripheral devices of computer.
4. Learn the different types of serial communication techniques.
5. Explain different pipelining processes.

UNIT-V

1. Learn the concept of memory hierarchy.
2. Discuss the concept of memory organization.
3. Explain the use of cache memory and virtual memory.
4. Understand the concept of memory management hardware.
5. Summarize the types of memory.

LESSON PLAN

Course Number : CS102
Program : B.Tech
Year / Semester : II / I

Course Name : CAO
Branch : CSE
Section : A,B & C

S.No.	Topic	Proposed Date	Actual Date
UNIT – I			
1	Digital Logic Circuits: Basic Logic Functions, Synthesis of Logic Functions Using AND, OR, and NOT Gates	12-06-2017 13-06-2017	
2	Minimization of Logic Expression	14-06-2017 15-06-2017	
3	Synthesis with NAND and NOR Gates	16-06-2017 19-06-2017	
4	Flip-Flops, Registers and Shift Registers	20-06-2017 21-06-2017	
5	Counters, Decoders, Multiplexers	22-06-2017 23-06-2017	
6	Programmable Logic Devices (PLDs)	28-06-2017 29-06-2017	
7	Basic Structure of Computers: Functional units, Basic operational concepts, Bus structures	30-06-2017 03-07-2017	
8	Software, Performance, multiprocessors and multicomputers	04-07-2017 05-07-2017	
Content beyond the syllabus			
	Encoders	06-07-2017	
	DeMultiplexers	07-07-2017	
	Programmable Logic Arrays (PLAs)	11-07-2017	
UNIT – II			
1	Data Representation: Data types, Complements	12-07-2017 13-07-2017	
2	Other binary codes, Error Detection codes	14-07-2017 17-07-2017	
3	Register and Micro operations: Register Transfer language, Register Transfer Bus and memory transfers	18-07-2017 19-07-2017	
4	Arithmetic Micro operations, logic micro operations	20-07-2017 21-07-2017	
5	Shift micro operations, Arithmetic logic shift unit	24-07-2017 25-07-2017	
Content beyond the syllabus			
	Gray code, Excess-3 code	26-07-2017	
	Circuits for all micro operations	27-07-2017	
UNIT – III			
1	Processing Unit: Instruction Codes, Computer Registers	28-07-2017 31-07-2017	

2	Computer Instructions, Instruction Cycle, Memory Reference Instructions	01-08-2017 02-08-2017	
3	Hardwired Control, Micro Programmed Control	04-08-2017 07-08-2017	
	I- Mid Examination	08-08-2017 To 10-08-2017	
4	Register organization, Stack organization, Instruction formats	11-08-2017 16-08-2017	
5	Addressing modes, Data Transfer and manipulations, RISC, CISC	17-08-2017 18-08-2017	
6	Computer Arithmetic: Addition, subtraction, multiplication and division operations, Floating point Arithmetic operations	21-08-2017 22-08-2017	
	Content beyond the syllabus		
	Types of instruction formats	23-08-2017	
	Control unit	24-08-2017	
	UNIT – IV		
1	Input-Output Organization: Peripheral Devices, Input-Output Interface	28-08-2017 29-08-2017	
2	Asynchronous data transfer, Modes of Transfer	30-08-2017 31-08-2017	
3	Priority Interrupt, Direct memory Access	01-09-2017 04-09-2017	
4	Input-Output Processor, Serial communication.	05-09-2017 06-09-2017	
5	Parallel and Vector Processing: Parallel processing, Pipelining	07-09-2017 08-09-2017	
6	Arithmetic pipeline, Instruction pipeline, RISC Pipeline	11-09-2017 12-09-2017	
7	Vector Processing, Array Processors	13-09-2017 14-09-2017	
	Content beyond the syllabus		
	Modes of data transfer	15-09-2017	
	SIMD, MIMD	18-09-2017	
	UNIT – V		
1	Memory Organization: Memory Hierarchy, Main memory	19-09-2017 21-09-2017	
2	Auxiliary memory, Associative memory	22-09-2017 25-09-2017	
3	Virtual memory, Cache memory	26-09-2017 03-10-2017	
4	Memory management hardware	04-10-2017 05-10-2017	
	Content beyond the syllabus		
	Types of memory	06-10-2017 09-10-2017	

	RAM,ROM secondary memory	10-10-2017 11-10-2017	
	II- Mid Examination	12-10-2017 To 16-10-2017	

Text Books:

1. M. Moris Mano, "Computer Systems Architecture", 4th Edition, Pearson/PHI, ISBN:10:0131755633
2. Carl Hamacher, Zvonko Vranesic, Safwat Zaky, "Computer Organization", 5th Edition, McGraw Hill.

Reference Book:

1. John L. Hennessy and David A. Patterson, "Computer Architecture a quantitative approach", 4th Edition Elsevier, ISBN:10:0123704901
2. William Stallings, "Computer Organization and Architecture", 6th Edition, Pearson/PHI, ISBN:10:0-13-609704-9
3. Donald e Givone, "Digital Principles and Design", TMH.
4. A.Anandkumar, "Fundamentals of digital circuits", 4th edition, PHI.

(CS103) DATABASE MANAGEMENT SYSTEMS

COURSE OBJECTIVES:

Students will be able to

1. Describe the basic concepts of database systems, ER modeling.
2. Comprehend the concepts of relational model, relational algebra and relational calculus.
3. Apply SQL queries to perform various operations on databases.
4. Apply the concepts of normalization and analyze the concept of transaction management in databases.
5. Compare and contrast various file organization and indexing techniques.

COURSE OUTCOMES:

At the end of the course, the students will develop ability to

1. Define the basic concepts of DBMS,
2. Design entity relationship models.
3. Explain relational model, integrity constraints.
4. Apply SQL to insert, delete and retrieve data from databases.
5. Convert entity relationship diagrams into RDBMS and formulate SQL queries on respective data.
6. Apply normalization to remove anomalies from databases.
7. Synthesize the concepts of transaction management, concurrency control and recovery.
8. Compare various file organization and indexing techniques.

Unit wise Learning Objectives:

UNIT- I

1. Describe the basic concepts of database systems.
2. Design entity relationship models.
3. Analyze the data models.
4. Comprehend database languages.
5. Analyze the architecture of DBMS.

UNIT-II

1. Comprehend the concepts of relational model, relational algebra and relational calculus.
2. Apply the relational algebra concepts.
3. Apply the relational calculus concepts.
4. Compare Tuple relational calculus and domain relational calculus.
5. Analyze the importance of views in database.

UNIT-III

1. Comprehend basic SQL queries.

2. Analyze the nested and correlated queries.
3. Analyze the importance of triggers while designing the database.
4. Apply SQL queries to perform various operations on databases.
5. Construct Outer and inner Joins.

UNIT-IV

1. Identify the problems caused by redundancy.
2. Differentiate the various Normal forms.
3. Analyze the lossless join decomposition.
4. Apply normalization to remove anomalies from databases.
5. Analyze functional dependency.

UNIT-V

1. Analyze ACID properties.
2. Synthesize the concepts of transaction management, concurrency control and recovery.
3. Compare and contrast various file organization and indexing techniques.
4. Analyze the RAID levels and disk space management.
5. Identify deadlock scenario .

LESSON PLAN

Course Number : CS103
Program : B.Tech
Year/Semester : II / I

Course Name : DBMS
Branch : CSE
Section : A, B & C

S.No.	Topic of the Lecture	Proposed Date	Schedule Date
UNIT-I			
1	Data base System Applications, data base System VS file System, View of Data – Data Abstraction	12/06/2017	
2	Instances and Schemas – data Models, ER Model	13/06/2017	
3	Relational Model – Other Models	14/06/2017	
4	Database Languages – DDL – DML, database Access for applications Programs	15/06/2017	
5	Data base Users and Administrator	16/06/2017	
6	Transaction Management, data base System Structure	19/06/2017	
7	History of Data base Systems, Data base design and ER diagrams	20/06/2017	
8	Beyond ER Design, Entities, Attributes and Entity sets	20/06/2017	
9	Relationships and Relationship sets,	21/06/2017	
10	Additional features of ER Model	22/06/2017	
11	Concept Design with the ER Model	23/06/2017	
UNIT-II			
12	Introduction to the Relational Model	28/06/2017	
13	Integrity Constraint Over relations	29/06/2017	
14	Enforcing Integrity constraints	30/06/2017	
15	Querying relational data – Logical data base Design	3/07/2017	
16	Introduction to Views - Destroying /altering Tables and Views.	4/07/2017	
17	Relational Algebra – Selection and projection	5/07/2017	
18	set operations – renaming	6/07/2017	
19	Joins – Division – Examples of Algebra overviews –	7/07/2017	
20	Relational calculus	11/07/2017	
21	Tuple relational Calculus	12/07/2017	
22	Domain relational calculus	13/07/2017	
23	Expressive Power of Algebra and calculus	14/07/2017	

	UNIT-III		
24	Form of Basic SQL Query, Examples of Basic SQL Queries	20/07/2017	
25	Introduction to Nested Queries,	21/07/2017	
26	Correlated Nested Queries	24/07/2017	
27	Set – Comparison Operators - Aggregative Operators,	25/07/2017	
28	NULL values – Comparison using Null values	26/07/2017	
29	Logical connectivity's – AND, OR and NOT,	27/07/2017	
30	Impact on SQL Constructs – Outer Joins	28/07/2017	
31	Disallowing NULL values, Complex Integrity Constraints in SQL	31/07/2017	
32	Triggers and Active Data bases	01/08/2017	
33	Schema refinement	02/08/2017	
34	Problems Caused by redundancy – Decompositions,	04/08/2017	
35	Problem related to decomposition - reasoning about FDS	07/08/2017	
	I - Mid Examination	08/08/2017 to 10/08/2017	
36	FIRST, SECOND Normal forms	11/08/2017	
37	THIRD Normal forms	16/08/2017	
38	BCNF Normal forms	17/08/2017	
39	Lossless join Decomposition – Dependency preserving Decomposition	18/08/2017	
40	Schema refinement in Data base Design	21/08/2017	
41	Multi valued Dependencies – FOURTH Normal Form	22/08/2017	
	UNIT-IV		
42	Transaction Concept, Transaction State	28/08/2017	
43	Implementation of Atomicity and Durability	29/08/2017	
44	Concurrent – Executions	30/08/2017	
45	Serializability , Recoverability	01/09/2017	
46	Implementation of Isolation – Testing for Serializability	04/09/2017	
47	Lock –Based Protocols,	05/09/2017	

48	Timestamp Based Protocols	06/09/2017	
49	Validation- Based Protocols	07/09/2017	
50	Recovery and Atomicity, Log – Based Recovery	08/09/2017	
51	Recovery with Concurrent Transactions	11/09/2017	
51	Buffer Management	12/09/2017	
52	Failure with loss of nonvolatile storage	13/09/2017	
53	Advance Recovery systems - Remote Backup systems	14/09/2017	
	UNIT-V		
54	Data on External Storage	18/09/2017	
55	File Organization and Indexing	19//09/2017	
56	Cluster Indexes,	21/09/2017	
57	Primary and Secondary Indexes	22/09/2017	
58	Index data Structures – Hash Based Indexing	23/09/2017	
59	Tree base Indexing	25/09/2017	
60	Comparison of File Organizations	26/09/2017	
61	Indexes and Performance Tuning-	05/10/2017	
62	Storing data :Disks and Files	06/10/2017	
63	Indexed Sequential Access Methods (ISAM)	07/10/2017	
64	B+ Trees: A Dynamic Index Structure.	09/10/2017	
	II - Mid Examination	12/10/2017 to 16/10/2017	

TEXT BOOKS:

1. Raghurama Krishnan, Johannes Gehrke “Data base Management Systems” TATA McGrawHill 3rd Edition.
2. Silberschatz, Korth “Data base System Concepts” McGraw hill, V Edition.

REFERENCE BOOKS:

1. Peter Rob and Carlos Coronel “Data base Systems design, Implementation, and Management” 7th Edition.
2. Elmasri Navrate “Fundamentals of Database Systems” Pearson Education

WEB LINKS:

1. <http://nptel.iitm.ac.in>
2. http://highered.mheducation.com/sites/0072465638/student_view0/index.html

(CS101) MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

COURSE OBJECTIVES:

1. Interpreting the mathematical logic with concepts of truth tables, normal forms and quantifiers.
2. Inferring the predicates and rules of inference for automatic theorem proving, set theory and lattice systems.
3. Organizing the algebraic structures, elementary combinatory for making proofs for the mathematical principles.
4. Executing the recurrence relations and its characteristics.
5. Explaining the concepts of Graph Theory

COURSE OUTCOMES:

1. Analyze the problem and identify the structures required to generate the mathematical solution.
2. Apply the mathematical logic, predicate rules to design an abstract system for theorem proof.
3. Apply mathematical foundations, algorithmic principles in modeling and design in computer based system.
4. Find out the co-efficient for a polynomial
5. Design and develop the logic based systems.
6. Apply the concepts of Graph Theory in solving practical engineering problems
7. Solve problems involving recurrence relations and generating functions
8. Visualize and simplify situations using graphs and trees as tools

Unit wise Learning Objectives:

UNIT- I

1. Understand the logic of mathematical logic
2. Evaluate the formula using the logical connectives.
3. Construct the truth tables.
4. Complete the normal forms.
5. Compile and decide the validity of arrangements or premises

UNIT-II

1. Recall the concepts of sets and its operations.
2. Define and identify the properties of relations.
3. Complete and test the equivalence relations and partial ordering relations.
4. Define and construct hasse diagram.
5. Evaluate lattice and its properties.

UNIT-III

1. Recall the concepts of functions and its types
2. Compute counting techniques problems using permutations and combinations
3. Apply pigeon hole principle
4. Define and apply principle of inclusion – exclusion
5. Analyze and classify the algebraic structures.

UNIT-IV

1. Outline generating functions.
2. Explain sequences of generating functions.
3. Calculating co-efficient of generative functions.
4. Solve recurrence relations.
5. Evaluating solutions of inhomogeneous recurrence relations

UNIT-V

1. Define the concepts of graphs.
2. Discuss the types of graphs and its properties.
3. Compute chromatic number of graphs.
4. Build DFS, BFS.
5. Construct minimal spanning tree

LESSON PLAN

Course Number : CS101
Program : B.Tech
Year / Semester : II/I

Course Name : MFCS
Branch : CSE
Section : A&B

S.No	Topic	Proposed Date	Actual Date
	UNIT – I		
	Mathematical Logic:		
	Statements and notations	12&13-06-17	
	Connectives	14&15-06-17	
	Well formed formulas, Truth tables	16&19-06-17	
	Tautology	20-06-17	
	Equivalence implication	21-06-17	
	Normal Forms	22-06-17	
	Predicates :		
	Predicative logic	23-06-17	
	Free & Bound variables	28-06-17	
	Rules of inference	29&30-06-17	
	Consistency, Proof of contradiction	1&3-07-17	
	Automatic Theorem Proving.	4-07-17	
	Content Beyond the Syllabus		
	Minimal set, Functionally Complete set		
	UNIT – II		
	Set Theory:		
	Introduction, Sets and Elements, Subsets	5-07-17	
	Venn Diagrams, Set Operations	6-07-17	
	Power Sets, Partitions	7-07-17	
	Relations :		
	Introduction, Product Sets	11-07-17	
	Relations, Pictorial Representatives of Relations, Composition of Relations	12&13-07-17	
	Types of Relations, Closure Properties, Equivalence Relations, compatibility	14&17-07-17	
	Partial Ordering Relations	18&19-07-17	

	Ordered Sets:		
	Ordered Sets, Hasse Diagrams of Partially Ordered Sets	20&21-07-17	
	Supremum and Infimum	24-07-17	
	Isomorphic (Similar) Ordered Sets, Well-Ordered Sets	25&26-07-17	
	Lattices and its Properties	27-07-17	
	Content Beyond the Syllabus		
	Equivalence classes, Partitions, Blocks		
	UNIT – III		
	Functions:		
	Introduction, Functions, One-to-One, Onto and Bijective Functions	28&31-07-17	
	Invertible Functions, Recursive Functions	1&2-08-17	
	Techniques of Counting:		
	Introduction, Basic Counting Principles	3-08-17	
	Permutations	4&7-08-17	
	I- Mid Examination	08-08-17 To 10-08-17	
	Combinations	11-08-17	
	The Pigeonhole Principle and its applications, The Inclusion–Exclusion Principle	16&17-08-17	
	Combinations with Repetitions	18-08-17	
	Binomial and Multinomial Theorems	21-08-17	
	Algebraic structures:		
	Algebraic systems Examples and general properties	22&23-08-17	
	Semi groups, Monoids, Groups, Ring and Fields	24&28-08-17	
	sub groups' homomorphism, Isomorphism	29-08-17	
	Content Beyond the Syllabus		
	Real time counting problems		
	UNIT – IV		
	Recurrence Relation:		
	Generating Functions, Function of sequences	30-08-17	
	Calculating Coefficient of generating function	31-08-17	
	Recurrence relations	1-09-17	
	Solving recurrence relation by substitution and	4-09-17	

	Generating functions		
	Characteristics root solution of In homogeneous Recurrence Relation	5-09-17	
	Content Beyond the Syllabus		
	Conversion of Generating Functions and Function of sequences		
	UNIT – V		
	Graph Theory :		
	Representation of Graphs, Basic Concepts	6&7-09-17	
	Basic types of Graphs and their Properties	8&11-09-17	
	Isomorphism and Sub graphs, Multi graphs	12&13-09-17	
	Euler circuits	14&15-09-17	
	Hamiltonian graphs	18&19-09-17	
	Chromatic Numbers	21&22-09-17	
	DFS, BFS	25&26-09-17	
	Trees, Spanning Trees	3&4-10-17	
	Planar Graph	5&6-10-17	
	Prim's and Kruskal's Shortest Path	9&10-10-17	
	Content Beyond the Syllabus		
	Usage of equivalence classes concept for Prim's program implementation		
	II- Mid Examination	12th,13th &16th Oct - 2017	

TEXT BOOKS:

1. Seymour Lipschutz, Lipson Marc, "Discrete Mathematics", Tata Mcgraw Hill, ISBN-100070669120
2. Trembly J.P. and Manohar .P, "Discrete Mathematical Structures with Applications to computer Science", TMH, ISBN-10: 0074631136

REFERENCE BOOKS:

1. Ralph. P.Grimaldi "Discrete and Combinational Mathematics- An Applied Introduction", 5th Edition Pearson Education,ISBN:9780201726343
2. Bernand Kolman, Roberty C. Busby, Sharn Cutter Ross, "Discrete Mathematical Structures", Pearson Education / PHI.
3. J.L. Mott, A. Kandel, T.P. "Discrete Mathematics for Computer Scientists and Mathematicians", Baker Prentice Hall.

WEB LINKS:

1. <http://nptel.iitm.ac.in>
2. <http://www.math.northwestern.edu/~mlerma/courses/cs310-05s/>
3. http://highered.mheducation.com/sites/0073383090/student_view0/applications_of_discrete_mathematics.html
4. <http://www.mhhe.com/math/advmath/rosen/r5/student/ch01/weblinks.html>

Name of the Course: (Object Oriented Programming Concepts)

Course Objectives:

1. To understand the various features of object oriented programming.
2. To learn the features of OOP specific to Java programming.
3. To understand the components involved in designing web pages through Java programming.
4. To understand the various components of event mechanism.
5. To understand the major components of network programming through java swings.
6. To understand the major key contributing components to enable web based applications through Java programming.

Topics:**Unit-I**

Object Oriented Thinking: Need for OOP paradigm, OOP Principles, **Java Basics** History of Java, Java buzzwords, data types, variables, scope and life time of variables, arrays, operators, expressions, control statements, type conversion and costing, simple java program, classes and objects – concepts of classes, objects, constructors, methods, access control, this keyword, garbage collection, overloading methods and constructors, parameter passing, recursion, string handling.

Unit-II

Inheritance: Hierarchical abstractions, Base class object, subclass, subtype, substitutability, forms of inheritance- specialization, specification, construction, extension, limitation, combination, benefits of inheritance, costs of inheritance. Member access rules, super uses, using final with inheritance, polymorphism- method overriding, abstract classes. **Packages and Interfaces:** Defining, Creating and Accessing a Package, Understanding CLASSPATH, importing packages, differences between classes and interfaces, defining an interface, implementing interface, applying interfaces, variables in interface and extending interfaces. **I/O Streams.**

Unit-III

Exception Handling and Multithreading: Concepts of exception handling, benefits of exception handling, Termination or resumptive models, exception hierarchy, usage of try, catch, throw, throws and finally, built in exceptions, creating own exception sub classes. Differences between multithreading and multitasking, thread life cycle, creating threads, synchronizing threads, daemon threads, thread groups.

Unit-IV

Applets: Concepts of Applets, differences between applets and applications, life cycle of an applet, types of applets, creating applets, passing parameters to applets.

Event Handling: Events, Event sources, Event classes, Event Listeners, Delegation event model, handling mouse and keyboard events, Adapter classes, inner classes. The AWT class hierarchy,

user interface components- labels, button, canvas, scrollbars, text components, check box, check box groups, choices, lists panels – scrollpane, dialogs, menubar, graphics, layout manager – layout manager types – boarder, grid, flow, card and grib bag.

Unit-V

Swings: Introduction, limitations of AWT, MVC architecture, components, containers, exploring swing- JApplet, JFrame and JComponent, Icons and Labels, text fields, buttons – The JButton class, Check boxes, Radio buttons, Combo boxes, Tabbed Panes, Scroll Panes, Trees, and Tables.

Course Outcomes:

At the end of the course, the student will get ability to:

- a) Design the framework and architecture for MVC's.
- b) Apply all OOP features and design Object based applications.
- c) Apply event handling mechanism to design an effective user interface.
- d) Apply, analyze and design effective web enabled applications.

Text Books:

1. Herbert schildt “Java the complete reference”, 7th Edition, TMH,ISBN:0072263857
2. T.Budd “Understanding OOP with Java” updated Edition, pearson eduction, ISBN:10:0201612739

References:

1. Y. Daniel Liang “Introduction to Java programming” 6th Edition, pearson education, ISBN:10:0132221586
2. R.A. Johnson-An introduction to Java programming and object oriented application development, Thomson, ISBN:-10:0619217464

LESSON PLAN**Name of the Faculty: T. Sampath Kumar****Academic Year: 2017 - 2018****Subject with Code:****Branch : Computer Science & Engg.****Year / Semester: II / II****Section: CSE**

L.No	Topic of the Lecture	Schedule Date DD/MM/YYYY	Actual Date
	UNIT-I		
1	Need for OOP paradigm, OOP Principles	07/6/2017	
2	Java Basics History of Java, Java buzzwords	08/6/2017	
3	data types, variables, scope and life time of variables,	10/6/2017	
4	arrays, operators	11/6/2017	
5	expressions, control statements	14/6/2017	
6	type conversion and costing, simple java program	15/6/2017	
7	classes and objects – concepts of classes, objects	17/6/2017	
8	constructors, methods, access control, this keyword	18/6/2017	
9	garbage collection, overloading methods and constructors	21/6/2017	
10	parameter passing, recursion	22/6/2017	
11	string handling.	28,29/6/2017	
	UNIT-II		
	Inheritance: Hierarchical abstractions, Base class object, subclass, subtype, substitutability,	31/6/2017	
	forms of inheritance- specialization, specification, construction, extension.	01,02/07/2017	
	limitation, combination, benefits of inheritance, costs of inheritance	04/07/2017	
	Member access rules, super uses,	07,08/07/2017	
	using final with inheritance	09/07/2017	
	polymorphism- method overriding,	10/07/2017	
	abstract classes.	11/07/2017	
	Packages and Interfaces: Defining, Creating and Accessing a Package,	12/07/2017	
	differences between classes and interfaces, defining an interface, implementing interface,	13/07/2017	
	applying interfaces, variables in interface and extending interfaces.	14/07/2017	
	I/O Streams.	15,16/01/2017	

I MID Examinations		
UNIT-III		
Exception Handling and Multithreading: Concepts of exception handling, benefits of exception handling, Termination or resumptive models,	22/07/2017	
exception hierarchy, usage of try, catch, throw,	23,24/07/2017	
throws and finally,	26/07/2017	
built in exceptions, creating own exception sub classes.	27/07/2017	
Differences between multithreading and multitasking, thread life cycle	28,29/07/2017	
creating threads, synchronizing threads	1/08/2017	
Daemon threads, thread groups.	2,3/08/2017	
UNIT-IV		
Applets: Concepts of Applets, differences between applets and applications	4/08/2017	
life cycle of an applet, types of applets,	5,6/08/2017	
Creating applets, passing parameters to applets.	7/08/2017	
Event Handling: Events, Event sources,	9,10/08/2017	
Event classes, Event Listeners	11/08/2017	
Delegation event model, handling mouse events	12,13/08/2017	
keyboard events, Adapter classes, inner classes	14,15/08/2017	
The AWT class hierarchy, user interface components- labels, button	16/08/2017	
canvas, scrollbars, text components, check box,	17/08/105	
check box groups, choices, lists panels – scrollpane,	19/08/2017	
dialogs, menubar, graphics,	20,21/08/2017	
layout manager – layout manager types – boarder, grid, flow,	23,24/08/2017	
card and grib bag layout.	26/08/2017	
UNIT-V		
Swings: Introduction, limitations of AWT, MVC architecture	01/09/2017	
components, containers, exploring swing- JApplet, JFrame	2,3/09/2017	
Icons and Labels, text fields,	4/09/2017	
The JButton class, Check boxes,	5,6/09/2017	
Radio buttons, Combo boxes, Tabbed Panes	7,8/09/2017	
Scroll Panes, Trees, and Tables.	/9,10/09/2017	
II MID Examinations		

Monday		Thursday	
Tuesday		Friday	
Wednesday		Saturday	

(CS103) DATABASE MANAGEMENT SYSTEMS LABORATORY

COURSE OBJECTIVES:

1. Define the basic concepts of Database Systems.
2. Develop ER Diagrams for database design.
3. Apply various integrity constraints to develop Relational Model
4. Apply SQL Queries, to perform various operations on databases.
5. Synthesize the development of procedures, cursors and Triggers for effective database design.

COURSE OUTCOMES:

1. Define the basic concepts of DBMS,
2. Design Entity Relationship Models.
3. Apply various Integrity Constraints on the databases.
4. Apply SQL to insert, delete and retrieve data from databases.
5. Apply normalization to remove anomalies from databases.
6. Implement the concepts of procedures, cursors and Triggers.
7. Implement other database objects such as Views.
8. Design the real world database applications.

LESSON PLAN**Name of the Faculty :****Academic Year:** 2016 - 2017**Course Number :** CS103**Course Name:** DBMS**Program :** B.Tech**Branch:** CSE**Year/Semester :** II/ I**Section:** A, B & C

Week	Task	Schedule Date
1	Creation, altering and dropping of tables and inserting rows into a table (use constraints while creating tables) examples using SELECT command.	12/06/2017
2	Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSET, Constraints. Example:- Select the roll number and name of the student who secured fourth rank in the class.	19/06/2017
3	Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.	03/07/2017
4	Queries using Conversion functions (to_char, to_number and to_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next_day, add_months, last_day, months_between, least, greatest, trunc, round, to_char, to_date)	13/07/2017
5	i)Creation of simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found) ii)Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.	17/07/2017
6	Develop a program that includes the features NESTED IF, CASE and CASE expression. The program can be extended using the NULLIF and COALESCE functions.	24/07/2017
7	Program development using WHILE LOOPS, numeric FOR LOOPS, nested loops using ERROR Handling, BUILT –IN Exceptions, USE defined Exceptions, RAISE- APPLICATION ERROR.	31/07/2017
8	Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES.	21/08/2017
9	Program development using creation of stored functions, invoke functions in SQL Statements and write complex functions.	28/08/2017
10	Program development using creation of package specification, package bodies, private objects, package variables and cursors and calling stored packages.	04/09/2017
11	Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.	11/09/2017

12	Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers.	18/09/2017
13	Roadway Travels Database	25/09/2017
	Lab Internal	09/10/2017

TEXT BOOKS:

1. Raghurama Krishnan, Johannes Gehrke “Data base Management Systems” TATA McGrawHill 3rd Edition.
2. Silberschatz, Korth “Data base System Concepts” McGraw hill, V Edition.

REFERENCES:

1. Peter Rob and Carlos Coronel “Data base Systems design, Implementation, and Management” 7th Edition.
2. Elmasri Navrate “Fundamentals of Database Systems” Pearson Education

WEB LINKS:

1. <http://nptel.iitm.ac.in>
2. http://highered.mheducation.com/sites/0072465638/student_view0/index.html

COURSE OBJECTIVES AND PROGRAM OUTCOMES**Name of the Course: (Object Oriented Programming Concepts lab)****Course Objectives:**

7. To understand the OOP features to develop Object based programs.
8. To learn how effective Java programs can be made.
9. To understand the plugins, Applets to run web applications using browsers.
10. To know the techniques for developing effective robust, reusable software.
11. To learn how to develop GUI's.
12. To understand the features of OOP specific to Java programming, which will be applied to develop web based applications.

COURSE OUTCOMES:

- a) The student will be able to
- b) Develop the applications through Java programming
- c) Design web based applications
- d) Expose the internet based programming
- e) Develop, Design applications of OO nature

LESSON PLAN**Name of the Faculty: T.Sampath Kumar****Academic Year: 2017 - 2018****Subject with Code: (CS109)****Branch : Computer Science & Engg.****Year / Semester: II / I****Section: A/B/C**

L.No	Topic of the Lecture	Schedule Date DD/MM/YYYY
	WEEK-1	
1	Write a Java program that prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. If the discriminant ($b^2 - 4ac$) is negative, display a message stating that there are no real solutions.	13,15/06/2017
2	The Fibonacci sequence is defined by the following rule: The first two values in the sequence are 1 and 1. Every subsequent value is the sum of the two values preceding it. Write a Java program that uses both recursive and non recursive functions to print the nth value in the Fibonacci sequence.	13,15/06/2017
	WEEK-2	
1	Write a Java program that prompts the user for an integer	20,23/06/2017

	and then prints out all prime numbers up to that integer.	
2	Write a Java program to multiply two given matrices.	20,23/06/2017
3	Write a Java Program that reads a line of integers, and then displays each integer, and the sum of all the integers (Use StringTokenizer class of java.util).	20,23/06/2017
	WEEK-3	
1	Write a Java program that checks whether a given string is a palindrome or not. Ex: MADAM is a palindrome.	27,30/06/2017
2	Write a Java program for sorting a given list of names in ascending order.	27,30/06/2017
3	Write a Java program to make frequency count of words in a given text	27,30/06/2017
	WEEK-4	
1	Write a Java program that reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.	04,07/07/2017
2	Write a Java program that reads a file and displays the file on the screen, with a line number before each line.	04,07/07/2017
3	Write a Java program that displays the number of characters, lines and words in a text file.	04,07/07/2017
	WEEK-5	
1	Write a Java program that: <ul style="list-style-type: none"> i. Implements stack ADT. ii. Converts infix expression into Postfix form iii. Evaluates the postfix expression 	11,14/07/2017
	WEEK-6	
1	Develop an applet that displays a simple message.	18,21/07/2017
2	Develop an applet that receives an integer in one text field, and computes its factorial Value and returns it in another text field, when the button named "Compute" is clicked.	18,21/07/2017
	WEEK-7	
1	Write a Java program that works as a simple calculator. Use a grid layout to arrange Buttons for the digits and for the +, -, *, % operations. Add a text field to display the result.	25,28/07/2017
	WEEK-8	
1	Write a Java program for handling mouse events.	1,4/08/2017
	WEEK-9	
1	Write a Java program that creates three threads. First thread displays "Good Morning" every one second, the second	8,11/08/2017

	thread displays “Hello” every two seconds and the third thread displays “Welcome” every three seconds.		
2	Write a Java program that correctly implements producer consumer problem using the concept of inter thread communication.	8,11/08/2017	
WEEK-10			
1	Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the textfields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a NumberFormatException. If Num2 were Zero, the program would throw an Arithmetic Exception Display the exception in a message dialog box.	14,18/08/2017	
WEEK-11			
1	Write a java program that simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green. When a radio button is selected, the light is turned on, and only one light can be on at a time No light is on when the program starts.	22,25/08/2017	
2	Write a Java program that allows the user to draw lines, rectangles and ovals.	22,25/08/2017	
WEEK-12			
1	A demonstration of the ProgressMonitor toolbar. A timer is used to induce progress.	29/08/2017 01/09/2017	
2	This example also shows how to use the UIManager properties associated with progress monitors sample Swing application that manages several internal frames. This is the main class for working with the SiteFrame and PageFrame classes.	29/08/2017 01/09/2017	
Monday		Thursday	
Tuesday	yes	Friday	yes
Wednesday		Saturday	

(BS111) COMPUTATIONAL MATHEMATICS LAB**COURSE OBJECTIVES:**

Students will be able to

1. Understand the basics of spreadsheet applications to engineering problem solving
2. Use Excel and MATLAB for engineering computing and data visualization
3. Apply skills of modeling and generate engineering models
4. Illustrate scientific documentation tools
5. Apply MATLAB for solving problems in numerical methods and curve fitting

COURSE OUTCOMES:

At the end of the course, the students will develop ability to

1. Create and format spreadsheets in Excel
2. Compare different solutions to engineering problems using the scenario analysis
3. Represent program modules in terms of a flowchart and pseudocode and use MATLAB for interactive computing
4. Write and test programs in MATLAB using flow controls (if-else, for, and while)
5. Manipulate matrices and perform matrix algebra in Excel and MATLAB
6. Solve simultaneous equations in Excel and MATLAB
7. Perform numerical integration and differentiation in Excel and MATLAB
8. Construct appropriate graphs or plots in Excel and MATLAB for data analysis and prediction

LESSON PLAN

Name of the Faculty: Academic Year: 2017 - 2018

Course Number: BS111 Course Name: COMPUTATIONAL MATHEMATICS LAB

Program: B. Tech Branch: CSE

Year/ Semester: II/I Section: A

SL. No.	Topic of the Lecture	Scheduled Date	Completion Date
1.	EXCEL Week 1: Introduction to Excel: Formatting and Layout, Page orientation, Size, Breaks, Header/Footer, Headings, Font, Height and Width, Color, Lines, Alignment, Merge, Wrap, Sheets titles, Fill, Sort, Absolute and Relative referencing	12/06/17	
2.	Week 2: Simple plots, Graphing with error and trend lines	19/06/17	
3.	Week 3: Solving system of equations using matrix methods and the solver	03/07/17	
4.	Week 4: Numerical integration and differentiation from data and from equation	17/07/17	
5.	Week 5: Finding roots of a polynomial - Goal seek, Finding maximum and minimum of function -	24/07/17	

	solver, Finding the results for different scenarios		
6.	MATLAB Week 6: Flowcharting,Pseudocode and Documentation – Basic building blocks of flowchart, Translating flowchart to pseudocode, Basics of documentation	31/07/17	
7.	Week 7: Introduction to MATLABenvironment, writingsimple programs with branching and loop statements	07/08/17	
8.	Week 8: Creating plots with MATLAB	21/08/17	
9.	Week 9: Manipulating matrices and solving system of equations using matrix methods	28/08/17	
10.	Week 10: Using programmer's toolbox (input/output/plotting..) - Finding roots, Maximum and minimum values of a function	04/09/17	
11.	Week 11: Numerical integration and differentiation	11/09/17	

Time Table:

Monday	:	√	Thursday	:	
Tuesday	:		Friday	:	
Wednesday	:		Saturday	:	