



SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,

NANDED [M.S.]

Choice Based Credit System

(CBCS Pattern)

Faculty of Science and Technology

Syllabus of B.Sc. Software Engineering S. Y.

Effective from Academic Year (2016-2017)

Under Graduate (UG) Program

Semester	Subject Code	Course Name	Credit		Total Credits
			Internal	External	
Semester – III	S3.AEC.1	1. Language Aptitude	1	3	4
	S3.CC.2	2. Object Oriented Concepts	1	3	4
	S3.CC.3	3. Data Communications.	1	3	4
	S3.CC.4	4. Data Structure	1	3	4
	S3.CC.5	5. Elective 1) Computer Algorithms 2) Theory of Computation 3) Internet Technologies with PHP Programming	1	3	4
	S3.Lab 1	6. Lab Course – 1 (OOC)	-	2	2
	S3.Lab 2	7. Lab Course – 2 (Data Structure)	-	2	2
	S3.Lab 3	8. Lab Course – 3 (Elective)		2	2
	S3.SEC.1	9. 1. Programming in SCILAB 2. PC Installation 3. Office Automation Tools			
		TOTAL			26
Semester – IV	S4.CC.1	1) Logical Reasoning	1	3	4
	S4.CC.2	2) Operating System	1	3	4
	S4.CC.3	3) Java Programming	1	3	4
	S4.CC.4	4) Relational Database Management System	1	3	4
	S4.CC.5	5) Elective 1) Computer Graphics 2) Compiler Designing 3) Computer Architecture and Microprocessor	1	3	4
	S4.Lab 1	6) Lab Course – 1 (Java Programming)	-	2	2

	S4.Lab 2	7) Lab Course – 2 (RDBMS)	-	2	2
	S4.Lab 3	8) Lab Course – 3 (Elective)		2	2
	S4.SEC-1	9) 1. MySQL(SQL/PL-SQL) 2. Multimedia and Applications 3. XML Programming			
		TOTAL			26

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Language Aptitude
Subject Code	S3.AEC.1

UNIT – I

1.	Grammar in day-to-day use	Lecturers Required	Ref. No.
a)	Common errors in the use of English. i) Noun ii) Pronoun iii) Adverb iv) Verb v) Preposition vi) Article vii) Conjunctions viii) Tenses	15	1,2,3,4
b)	Transformation of the sentences i) Voice ii) Simple, compound and complex sentences	05	1,2,3,4
c)	Clauses i) Adjective Clause & its function ii) Adverb Clause & its usage. iii) Noun Clause & its usage.	05	1,3,4

References:

Sr. No.	Name of the Book	Author	Publication
1.	English Grammar & Composition.	Rajendra Pal & Suri	Sultan Chand & Sons
2.	Objective General English	R. S. Agrawal	S Chand
3.	Macmillan foundation English	R.K. Dwivedi A. Kumar	Macmillan
4.	A Practical English Grammar	A.J. Thomson	Oxford

UNIT–II

2.	Vocabulary	Lecturers Required	Ref. No.
a)	Vocabulary building: Active & Passive vocabulary	02	1,2,3
b)	Idioms & Phrases	02	1,2,3
c)	Synonyms & Antonyms (Advanced level)	01	1,2,3
d)	Misspelt words	02	1,2,3

References:

Sr. No.	Name of the Book	Author	Publication
1.	Objective General English-	R. S. Agrawal	S Chand
2.	Personality Development and Communicative English	T. Bharathi	Neelkamal Publication PVT LTD
3.	Word Power Made Easy	Norma Levis (Recent Editions)	-

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UNIT – III

3	Language Aptitude	Lecturers Required	Ref. No.
	a) Para-jumbles	03	1,2,3,4,5,6
	b) Reading Comprehension (RC)	02	1,2,3,4,5,6
	c) Sentence Correction	02	1,2,3,4,5,6
	d) Completing Statements	02	1,2,3,4,5,6
	e) Verbal Analogy	02	1,2,3,4,5,6
	f) Spotting Errors	01	1,2,3,4,5,6

References:

Sr. No.	Name of the Book	Author	Publication
1.	Objective English	Arahant Publication	ARIHANT
2.	Objective General English	R. S. Agrawal	S Chand
3.	A Practical English Grammar	A.J. Thomson	Oxford
4.	English Grammar & Composition	Rajendra Pal & Suri	Sultan Chan & sons
5.	English For Competitive Examination	Gupta	
6.	Macmillan foundation English	R.K. Dwivedi A. Kumar	Macmillan

UNIT–IV

4.	Practical English	Lecturers Required	Ref. No.
	a) Interview Preparation and Mock Interview	02	1,2,3,4
	b) Group Discussion	02	1,2,3,4
	c) Seminars and Oral Presentations	01	1,2,3,4
	d) Individual and Group Activities on different situations in English	01	1,2,3,4

References:

Sr. No.	Name of the Book	Author	Publication
1.	R. Gupta's Group Discussion and Interview	Anand Ganguly	Ramesh Publishing House
2.	Developing of Communication Skills	Krishna Mohan & Meera Banerji	MackMillan India LTD
3.	Spoken English for You	G. Radhakrishna Pillai and K. Rajivan	Emrald Publiction
4.	Group Discussion for Admissions and Jobs	Anand Ganguly	Pustak Mahal

UNIT – V

5.	Soft Skills and Professional Ethics	Lecturers Required	Ref. No.
	a) Interpersonal Skills	01	1,2
	b) Working in a tem	01	1,2
	c) Problem Solving Skills	01	1,2
	d) Time Management	01	1,2
	e) Stress Management	01	1,2
	f) Professional Ethics	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Soft Skills	K Alex	-
2.	Personality Development and Communicative English	Dr. T. Bharti	Neelkamal Publiction PVT LTD

Unit – VI

5.	Writing Skills	Lecturers Required	Ref. No.
	a) Resume Building	01	1,2,3
	b) Preparing CV	01	1,2,3
	c) Business Email Writing and useful tips	01	1,2,3
	d) Essay writing Techniques - Writing Essay	01	1,2,3

References:

Sr. No.	Name of the Book	Author	Publication
1.	English Grammar & Composition	Rajendra Pal & Suri	Sultan Chand & Sons
2.	Soft skills	by K. Alex	-
3.	Developing of Communication Skills	Krishna Mohan & Meera Banerji	MACMilan India LTD

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	OBJECT ORIENTED CONCEPT
Subject Code	S3.CC.2

UNIT – I

1.	Introduction to OOP's	Lecturers Required	Ref. No.
a)	Object Oriented Programming	02	1,2
b)	Basic concepts of OOPS	02	1,2
c)	Benefits of OOPs.	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

UNIT– II

2.	Introduction to C++	Lecturers Required	Ref. No.
a)	Tokens Identifiers Keywords	02	1,2
b)	Constant variable data types	02	1,2
c)	Scope Resolution Operator	01	1,2
d)	I/O statements Structure of C++ program	01	1,2
e)	Control statements Looping	01	1,2
f)	Type casting · Arrays, Pointer, References	02	1,2
g)	Structure and Unions	01	1,2
h)	Function: Call by value, Call by reference	01	1,2
i)	Inline function, Default arguments	01	1,2
j)	Function Overloading	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

UNIT – III

3	Class & Object	Lecturers Required	Ref. No.
a)	Define Class	01	1,2
b)	Members Object	01	1,2
c)	Visibility modes	01	1,2
d)	Static members	02	1,2
e)	Pointer to members	01	1,2
f)	Pointer to objects	01	1,2
g)	Constructors & Destructors	01	1,2
h)	Friend Function	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

UNIT-IV

4.	Operator Overloading & Type Conversions	Lecturers Required	Ref. No.
a)	Concept of Operator Overloading	02	1,2
b)	Unary & Binary operator overloading	02	1,2
c)	Rules for Overloading	01	1,2
d)	Type conversions – Basic to Class	02	1,2
a) e)	Class to basic Class to Class	02	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

UNIT - V

5.	Inheritance & Polymorphism	Lecturers Required	Ref. No.
a)	Concept of Inheritance	01	1,2
b)	Types of Inheritance	01	1,2
c)	Polymorphism	01	1,2
d)	Virtual Base Classes	02	1,2

e)	Pointer to Derived class	01	1,2
f)	Virtual functions	01	1,2
g)	Rules for Virtual function	01	1,2
h)	Pure Virtual functions	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

Unit – VI

5.	C++ I/O System	Lecturers Required	Ref. No.
a)	C++ Streams Stream classes	02	1,2
b)	Unformatted I/O operations	02	1,2
c)	Formatted I/O operations	01	1,2
d)	Manipulators	01	1,2
e)	Opening and closing file	01	1,2
f)	file modes	01	1,2
g)	Updating file	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	OBJECT ORIENTED PROGRAMMING WITH C++	E. BALGURUSWAMI	BPB Publication
2.	C++ COMPLETE REFERENCE	H. SHEILD	BPB Publication

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Data Communication
Subject Code	S3.CC.3

Unit – I

1.	Data Communication Concepts	Lecturers Required	Ref. No.
	a) A Communication model	02	1, 2
	b) Data Communication Task	01	1, 2
	c) Networks:- LAN, WAN	03	1, 2
	d) Wireless LAN Client Server model Peer to Peer Network Analog Signal Digital Signal	05	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Data and Computer Communications	William Stallings	Pearson Education India
2.	Local Area Network	Gerd Keiser	Tata McGraw-Hill

Unit – II

2.	Protocol Architecture / Multiplexing	Lecturers Required	Ref. No.
	a) The need for protocol architecture Network architecture OSI Model TCP/IP Reference Model	04	1, 2
	b) Multiplexing FDM TDM	03	1, 2
	c) Connection Oriented & Connectionless	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Data and Computer Communications	William Stallings	Pearson Education India

2.	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India
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Unit- III

3.	Transmission Media and Network Topology		Lecturers Required	Ref. No.
	a)	Transmission Media- Magnetic media. Twisted Pair Coaxial cable Fiber optics	04	1, 2
	b)	Topologies with advantages & disadvantages:- Bus, Ring, Star, Tree, Mesh.	03	1, 2
	c)	Infrared. Microwave.	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Network	Gerd Keiser	Tata McGraw-Hill
2.	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India

Unit- IV

4.	Ethernet & Circuit Switching and Packet Switching:		Lecturers Required	Ref. No.
	a)	Switching Circuit Switching Packet Switching Message Switching	04	1, 2
	b)	Ethernet Overview of Ethernet	03	1, 2
	c)	CSMA/CD	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Data and Computer Communications	William Stallings	Pearson Education India

2.	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India
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Unit V

5.	Network Devices & Protocol		Lecturers Required	Ref. No.
	a)	Network Devices Hub, Switch , Repeaters Router , Gateway ,Bridge	04	1, 2
	b)	Protocol: FTP, HTTP, SMTP , DNS	03	1, 2
	c)	IP address	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Network	Gerd Keiser	Tata McGraw-Hill
2.	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India

Unit VI

6.	Internet & Other Technologies		Lecturers Required	Ref. No.
	a)	Internet Internet & Intranet Internet Service Providers E-Mail	04	1, 2
	b)	ISDN, Token Ring FDDI	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Network	Gerd Keiser	Tata McGraw-Hill
2.	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Data Structure
Subject Code	S3.CC.4

Unit I

1	Introduction	Lecturer Required	Ref no
	a Introduction	01	01
	b Basic terminology, elementary data organization	01	01
	c Data structure	01	01,02
	d Data structure operation	01	01
	e Algorithm complexity	01	01,02

References:

sr. no	Name of the book	Author	Publication
1	Data Structure	Seymour Lipschutz	MC GRAW-HILL
2	Data Structures And Algorithms Concepts, Techniques And Applications	G.A.V. Pai	MC GRAW-HILL

Unit II

2	Array, Records and Pointers	Lecturer Required	Ref no
	a Linear array	01	01
	b Representation of linear array in memory	01	01,02
	c Traversing linear array	01	01,02
	d Inserting and Deleting	02	01,02
	e Searching methods (Binary and linear search)	02	01,02
	f Sorting Method (selection sort, bubble sort and Insertion sort)	03	01,02

References:

sr. no	Name of the book	Author	Publication
1	Data Structure,	Seymour Lipschutz	MCGRAW HILL
2	Data Structures Through 'C' Language	Samiram Chattopadhyay Debabrata Ghosh Dastidar, Matangini Chattopadhyay	BPB PUBLICATIONS

Unit III

3	Linked List	Lecturer Required	Ref no
	a Introduction	01	01
	b Linked list	01	01
	c Representation of Linked list in memory	01	01
	d Searching a linked list	02	01

	e	Memory allocation, Garbage collection	01	01
	f	insertion & Deletion into Linked List	02	01
	g	Two way Linked List	01	01

References:

sr. no	Name of the book	Author	Publication
1	Data Structure,	Seymour Lipschutz	MCGRAW HILL

Unit IV

4	Stack	Lecturer Required	Ref no
	a	Introduction	01
	b	stack	01,02
	c	Representation of stack (sequential & linked)	02
	d	Push & pop operation	01,02
	e	Arithmetic expression	01,02
	f	Infix, postfix & prefix	01,02
	g	Evaluation of postfix expression	01,02
	h	Recursion :factorial, Fibonacci	01

References:

sr. no	Name of the book	Author	Publication
1	Data Structure	Seymour Lipschutz	MCGRAW HILL
2	DATA STRUCTURE USING C	M. TENENBAUM, YEDIDYAH LANGSAM, MOSHE J. AUGENSTEN	AARON PEARSON PRENTICE HALL

Unit IV

5	Queue	Lecturer Required	Ref no
	a	Introduction	01
	b	Queues	01
	c	Memory Representation of Queue. (sequential & linked)	02
	d	Insertion & Deletion on Queue.	02
	e	D-queue	01
	f	Priority Queue	01

References:

sr. no	Name of the book	Author	Publication
1	Data Structure	Seymour Lipschutz	MCGRAW HILL

Unit VI

6	Tree & graph	Lecturer Required	Ref no
	a	Binary Tree	01

	b	Types of Binary tree	01	01,02
	c	Traversing of binary tree(pre-order, post-order, in-order)	02	01,02
	d	Header Nodes, Threads	01	01,02
	e	Graph	01	01,02
	f	Representation of graph	01	01,02
	g	Operations on graph	02	01,02

References:

sr. no	Name of the book	Author	Publication
1	Data Structure	Seymour Lipschutz	MCGRAW HILL
2	AN INTRODUCTION TO DATA STRUCTURE WITH APPLICATION	JEANPAUL, TREMBLAY PAUL, G. SORENSON	TATA MCGRAW HILL

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Computer Algorithms
Subject Code	S3.CC.5.1

Unit – I

1.	Introduction to data structure	Lecturers Required	Ref. No.
	a) Concepts of data and algorithm	02	1
	b) Time and space Complexity of a given	01	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Unit – II

2.	Divide and Conquer	Lecturers Required	Ref. No.
	a) General Method, Binary search	04	1
	b) Merge sort, Quick sort,	04	1
	c) Strassen’s matrix multiplication algorithm	04	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Unit – III

3.	The Greedy method	Lecturers Required	Ref. No.
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	a)	The general method	02	1
	b)	Knapsack problem	02	1
	c)	Optimal storage on tapes	02	1
	d)	Job sequencing with deadlines	02	1
	e)	Optimal merge pattern	02	1
	f)	Minimum spanning tree, Shortest path	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Unit – IV

4.	Dynamic Programming	Lecturers Required	Ref. No.
	a) The general method	02	1
	b) Multistage graphs	02	1
	c) Optimal binary search tree	02	1
	d) Reliability Design	02	1
	e) Travelling sales person problem	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Unit – V

5.	Basic search and traversal techniques	Lecturers Required	Ref. No.
	a) Binary tree traversal	02	1
	b) Breadth first search(BFS),	02	1
	c) Depth first search(DFS)	02	1
	d) Bi-connected components and DFS	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Unit – VI

5.	Basic search and traversal techniques	Lecturers Required	Ref. No.
	a) The general method	02	1
	b) The 8-Queens problem, Sum of subsets	02	1
	c) Graph coloring, Hamiltonian cycle	02	1
	d) Knapsack problem, Efficiency consideration	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Fundamentals of computer algorithm	Elis Horowitz, Sahani, Rajshekharan	Galgotia Publication, 2001, ISBN 81-7515-257-5

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Theory of Computation
Subject Code	S3.CC.5(2)

Unit I

1	Introduction		Lectures Required	Ref no
	A	Alphabet	01	
	B	Languages and grammars	01	
	C	Production rules and derivation of languages	01	
	D	Chomsky hierarchy of languages	01	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Computer Theory	Daniel I.A. Cohen	Wiley India, 2nd Edition
2	Introduction to Languages and the Theory of Computation;	Martin	Tata McGraw Hill, 3rd Edition

Unit II

2	Finite and Pushdown automata		Lecturers Required	Ref no
	A	Finite automata (deterministic and nondeterministic)	01	
	B	Minimization of finite automata	01	
	C	Pushdown automata	01	
	D	Introduction to Pushdown automata	02	
	E	Types (deterministic and nondeterministic)	02	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Languages and the Theory of Computation	Martin	Tata McGraw Hill, 3rd Edition
2	Theory of Automata and Formal Languages	Anand Sharma	Laxmi Publication
3	Automata Theory	Nasir and Srimani	Cambridge University Press

Unit III

3	Context free grammar		Lectures Required	Ref no
	A	Parse trees and derivations	02	
	B	Cook, Younger, Kasami, and Early's parsing algorithms	04	

	C	Ambiguity and properties of context free languages	03	
	D	Pumping lemma	02	
	E	closure properties of deterministic context free languages.	04	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Languages and the Theory of Computation	Martin	Tata McGraw Hill, 3rd Edition
2	Introduction to Formal Languages, Automata Theory and Computation	Kirthivasan, Rama R	Pearson Education
3	Introduction to the theory of computation	Michael Sipser	Cengage Learning

Unit IV

4	Linear Bounded Automata		Lectures Required	Ref no
	A	Introduction	02	
	B	Linear bounded automata	04	
	C	context sensitive languages	04	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Languages and the Theory of Computation	Martin	Tata McGraw Hill, 3rd Edition
2	Theory of Automata and Formal Languages	Anand Sharma	Laxmi Publication
3	Automata Theory	Nasir and Srimani	Cambridge University Press

Unit V

5	Recursive Languages		Lectures Required	Ref no
	A	Recursive and recursively enumerable sets	01	
	B	Decidable languages and undecidable problems	02	
	C	undecidable problems	02	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Languages and the Theory of Computation	Martin	Tata McGraw Hill, 3rd Edition
2	Introduction to Formal Languages, Automata Theory and Computation	K. Kirthivasan, Rama R	Pearson Education
3	Introduction to the theory of computation:	Michael Sipser,	Cengage Learning

Unit VI

6	Turing machine	Lectures Required	Ref no

	A	Turing machines and variation of Turing machine model	04	
	B	Turing computability	02	
	C	Turing computable functions	02	
	D	Church Turing hypothesis	02	
	E	Universal Turing machine	01	
	F	Turing Reducibility	01	
	G	Valid and invalid computations of Turing machines	04	

References

Sr. No.	Name of the book	Author	Publication
1	Introduction to Languages and the Theory of Computation	Martin	Tata McGraw Hill, 3rd Edition
2	Elements of Theory of Computation	Lewis	PHI

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Internet Technologies with PHP programming
Subject Code	S3.CC.5.3

UNIT – I

1.	Introduction to PHP	Lecturers Required	Ref. No.
a)	Basic Syntax, Lexical Structure of PHP	2	1,2
b)	Sending Data to the Web Browser	1	1,2
c)	Understanding PHP, HTML, and White Space	1	1,2
d)	Writing Comments, What Are Variables?	1	
f)	About Strings	1	
h)	About Numbers, About Constants	1	

References:

Sr. No.	Name of the Book	Author	Publication
1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition	Larry Ullman	
2.	Programming PHP	Rasmus Lerdorf, Kevin	

UNIT– II

2.	Programming with PHP	Lecturers Required	Ref. No.
a)	Creating an HTML Form	1	1,2
b)	Handling an HTML Form	1	1,2
c)	Managing Magic Quotes	1	1,2
d)	Conditionals and Operators	1	1,2
e)	Validating Form Data	1	1,2
f)	What Are Arrays?	4	1,2
g)	For and While Loops	1	1,2

References:

Sr. No.	Name of the Book	Author	Publication
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1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition	Larry Ullman	
2.	Programming PHP	Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre	

UNIT – III

3	String Manipulation and Regular Expression	Lecturers Required	Ref. No.
a)	Creating and accessing String, Searching & Replacing String	3	1,2
b)	Formatting, joining and splitting String, String Related Library functions	2	1,2
c)	Use and advantage of regular expression over inbuilt function	2	1,2
h)	Friend Function	1	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition	Larry Ullman	
2.	Programming PHP	Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre	

UNIT–IV

4.	Creating Dynamic Web Sites	Lecturers Required	Ref. No.
a)	Including Multiple Files	1	1,2
b)	Handling HTML Forms with PHP Redux	1	1,2
c)	Making Sticky Forms	1	1,2
d)	Creating and Calling Your Own Functions	2	1,2
e)	Variable Scope	1	1,2
f)	Date and Time Functions	1	1,2
g)	Sending Email	1	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide,	Larry Ullman	BPB Publication

2.	Programming PHP	Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre	BPB Publication
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UNIT – V

5.	Using PHP with MySQL	Lecturers Required	Ref. No.
a)	Connecting to MySQL and Selecting the Database	1	1,2
b)	Executing Simple Queries	2	1,2
c)	Retrieving Query Results	1	1,2
d)	Ensuring Secure SQL	2	1,2
e)	Counting Returned Records	1	1,2
f)	Updating Records with PHP	2	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition	Larry Ullman	
2.	Programming PHP	Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre	

Unit – VI

5.	Cookies and Sessions	Lecturers Required	Ref. No.
a)	Using Cookies	3	1,2
b)	Using Sessions	3	1,2
c)	Sessions and Cookies	1	1,2
d)	Improving Session Security	1	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition	Larry Ullman	

2.	Programming PHP	Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre	
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Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Lab Course -1 (OOC)
Subject Code	S3.Lab 1

List of Practical

- 1) Simple C++ program
- 2) Program on data types
- 3) Program for looping and branching statement
- 4) Program for Reference variable
- 5) Program for function overloading
- 6) Program for friend function and inline function
- 7) Program for static data member and function
- 8) Program for operator overloading
- 9) Program for Inheritance
- 10) Program for virtual function
- 11) Program for File handling
- 12) Program for Template

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Lab Course -2 (Data Structure)
Subject Code	S3.Lab 2

Sr.No	Title of program	Required Hour
1	Write a program traversing the array.	1
2	Write a program to insert the element into array at given position.	2
3	Write a program to delete the element from array.	1
4	Write program to search an element from array.	1
5	Write a program to find element in the array using binary search.	2
6	Write a program to sort the array using for bubble sort.	1
7	Write a program to perform insertion sort on array.	2
8	Write a program to implement the selection sort on array.	2
9	Write a program to implement stack using linked list.	1
10	Write a program to implement stack using array.	1
11	Write a program to perform push & pop operations on stack.	2
12	Write a program to convert an infix expression into postfix expression.	2
13	Write a program to evaluation of postfix expression using stack.	2
14	Write a program to implement queue using linked list.	1
15	Write a program to implement queue using array.	1
16	Write a program to perform queue operation	2
17	Write a program to create a linked list & performing traversing operation.	2

18	Write a program for insertion & deletion of linked list.	2
19	Write a program to simulate tree traversing techniques.	2

References

1	Data structures through C language	samiran chattopadhyay Debabrata Ghosh Dastidar matangini Chattopadhyay	BPB publication s
2	Data Structures Using C & C++	Yedidiah Langsam Moshe j.Augenstein Aaron M. Tenanbaum	PHI Learning

3	Data Structures, algorithms and applications In C++	Sartaj Sahni	MC Graw-Hill
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Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Elective-1 Practical
Subject Code	S3.Lab-3.1 (Computer Algorithm)

1	Program to demonstrate working of Merge Sort.
2	Program to demonstrate working of Quick Sort.
3	Program to demonstrate working of Binary Search.
4	Program to demonstrate working of graph coloring problem.
5	Program to demonstrate working of travelling sales person problem.
6	Program to demonstrate working of Single source shortest path.
7	Program to demonstrate working BFS.
8	Program to demonstrate working of DFS
9	Use C/C++/Java/Prolog/LISP to implement programs

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Elective-2 Practical
Subject Code	S3.Lab-3.2 (Theory of Computation)

1. STUDY of LEX and YACC TOOLS
2. TO CHECK WHETHER STRING BELONGS TO A GRAMMAR OR NOT
3. TO CALCULATE LEADING OF NON-TERMINALS
4. PROGRAM IS TO CALCULATE TRAILING FOR ALL THE NON TERMINALS OF THE GIVEN GRAMMMAR
5. PROGRAM FOR COMPUTATION OF FIRST
6. PROGRAM TO FIND THE NUMBER OF WHITESPACES AND NEWLINES CHARACTERS
7. TO IMPLEMENT STACK USING ARRAY
8. TO IMPLEMENT STACK AS LINKED LIST

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Lab Course 3 (Elective)
Subject Code	S3.Lab-3.3 (PHP)

Practical Assignments

1. Creating HTML FORM
2. Validating Form Data
3. Date and Time Functions
4. Sending Email.
5. Program based on arrays.
6. Program based on loops.
7. Making Sticky Forms
8. Creating and Calling Your Own Functions
9. Including multiple files.
10. Using the MySQL Client
11. Creating Databases and Tables
12. Connecting to MySQL and Selecting the Database , Executing Simple Queries , Retrieving Query Results , Ensuring Secure SQL , Counting Returned Records , Updating Records with PHP
13. Using Cookies
14. Using Sessions.

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	SciLab 1
Subject Code	S3.SEC.1(1)

Unit –I

Sr. No	Topic Name	Lecturers Required	Ref. No.
1.	Overview	2	
	1.1 Introduction to Scilab		1
	1.2 Installation on Windows & Linux		1
	1.3 Getting Help from Scilab		1
	1.4 Exercise		1
2	Getting Started Scilab	4	1
	2.1 The console		1
	2.2 The editor		1
	2.3 Docking		1
	2.4 Using exec		1
	2.5 Batch processing		1
	Exercise		1
3	Basic elements of the language	6	1
	3.1 Creating real variables		1
	3.2 Variable names		1
	3.3 Comments and continuation lines		1
	3.4 Elementary mathematical functions		1
	3.5 Pre-de_fined mathematical variables		1
	3.6 Booleans		1
	3.7 Complex numbers		1
	3.8 Integers		1
	3.9 Floating point integers		1
	3.10 The ans variable		1
	3.11 Strings		1
	3.12 Dynamic type of variables		1
4	Matrices	4	1
	4.1 Working with Matrix		1
	4.2 Multiplication of two vectors		1
	4.3 Comparing two real matrices		1
5	Looping	4	1
	5.1 The if statement		1
	5.2 The select statement		1
	5.3 The for statement		1
	5.4 The while statement		1
	5.5 The break and continue statements		1

Reference : 1 The Scilab Consortium. Scilab. <http://www.scilab.org>

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	PC Installation
Subject Code	S3.SEC.1.2

(PC Installation)

Sr. No.	Title of Programme	Required Hours
1)	Study of Hardware Component on Motherboard	4 hours
2)	Study of identifying RAM type and Installation of RAM SD, DDR, DDR1, DDR2, DDR3	2 hours
3)	Study of HDD Drive and installation of HDD	1 hours
4)	Study of Assemble a Computer System.	4 hours
5)	Study of Installing Windows 7 OS	2 hours
6)	Study of BIOS options	1 hour
7)	Study of Installing Windows 8 OS	2 hours
8)	Study of Installing Application Packages/Software – Microsoft Word, PDF reader, Browsing Software's	2 hours
9)	Study of Transmission Medias – Twisted Pair Cable, Co-ax Cable, Fiber-optic Cable.	1 hours
10)	Study of Crimping CAT-5 Straight Cable	1 hours
11)	Study of Crimping CAT-5 Cross over Cable	1 hours
12)	Study of Networking Devices – Hub, Switch, Router	1 hours
13)	Study of IP addresses- IPV4, IPV6.	2 hours
14)	Study of assigning IPV4 and IPV6 addresses to computer system	1 hour
15)	Study of Windows Firewall and Windows Defender	1 hour
16)	Troubleshoot to find connectivity problem	1 hour
17)	Performing another computer using Remote Desktop	1 hour
18)	Performing another computer using Team Viewer/Ammy Admin	1 hour
19)	Installing any Local Printer	1 hour
20)	To share a printer	1 hour
21)	To share a Folder/Map a Drive	1 hour

References:

Sr. No.	Name of the book	Author	Publication
1.	COMP INSTALL AND SERVICING	BALASUBRAMANIAN D	Tata McGraw Hill Edition
2.	PC Installation and LAN Setup	J.C.Shaikh	J S Publication
3.	https://en.wikibooks.org/wiki/How_To_Assemble_A_Desktop_PC/Software	Wikibooks	Website Link

Name of Course	B.Sc. SE SY
Semester	III Semester

Name of Subject	Office Automatuion
Subject Code	S3.SEC.1(3)

1. MS-Word

Opening screen of MS-Word 10, Formatting using different tools (font, paragraph, borders and shading, page setup, find and replace), working with tables, custom dictionary, mail-merge

2) MS-Excel

Opening screen of MS – Excel, working with formulas and functions, creating and formatting charts.

3) MS-PowerPoint

Opening screen of MS-PowerPoint, designing and applying animation effects.

4) MS-Access.

Creating tables in MS-Access, applying query, database connectivity

LIST FOR PRACTICALS

1. Study opening screen of MS-Word (title bar, menu-bar, tool box, status bar, standard tool bar, task bar)
2. Study of Font tool box.
3. Study of paragraph dialog box.
4. Study of basic Editing tools (cut, copy, paste, undo, redo).
5. Study of page setup (how to take the printouts).
6. Study of find and replace dialog box.
7. Study of creating custom dictionary.
8. Study of border and shading dialog box.
9. Study of Working with different styles in MS-Word.
10. Study of Working with tables.
11. Study of creating time table by the help of tables.
12. Study of Opening screen of MS-Excel.
13. Study of Data validation in MS-Excel.
14. Study of data sorting and data filtering in MS-Excel.
15. Study of goal seek and scenario manager in MS-Excel.
16. Working with formulas in MS-Excel (how to build formula, difference between function and formulas).
17. Study of different basic functions MS-Excel.
18. Study of string Functions.
19. Study of logical functions.
20. Creating mark sheet by using different functions.
21. Study of mathematical functions.
22. Study with financial functions
23. Study with date and time functions.
24. Creating charts in MS-Excel.
25. Study of exploring charts in MS-Excel.
26. Study of opening screen of MS-PowerPoint.

27. Study of design and animation effects in MS-PowerPoint
28. Study of making PowerPoint presentation (with different effects).
29. Study of opening screen of MS-Access.
30. Study of creating tables in MS-Access.
31. Study of applying query in MS-Access.
32. Study of database connectivity in MS-Access.

References:-

Sr. No.	Name of the Book	Author	Publication
1.	Microsoft office 2000	Complete	BPB Publication
2.	Mastering Word 2000	Mansfield	BPB Publication
3.	Essential MS-Word 2000	M-Marmel	BPB Publication
4.	MS-Access	Varsha Varma Shekhar	-
5.	Teach Yourself MS-Excel 2000 In 24 Hours	-	BPB Publication.

Semester	IV Semester
Name of Subject	Logical Reasoning
Subject Code	S4.CC.1

Unit I

1	Series, Analogy and Classification		Lectures Required	Ref no
	A	Series: Types of series, Alphabet series, Alpha numeric series, Examples on continues pattern series.	03	1
	B	Analogy: Completing the Analogous Pair, Direct/Simple Analogy, Choosing the Analogous Pair, Double Analogy, Number analogy, Alphabet analogy, Correlation between letters/numbers.	02	1
	C	Classification: Choosing the odd word, Choosing the odd numeral, Choosing the odd letter group.	02	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit II

2	Coding-Decoding		Lecturers Required	Ref no
	A	Coding-Decoding: Letter coding, Direct Letter Coding, Number/Symbol Coding.	03	1
	B	Substitution: Concept of substitution, Problem solving by using substitution.	01	1
	C	Deciphering: Deciphering messages word codes, Deciphering numbers/symbol codes for messages.	02	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit III

3	Blood Relation		Lectures Required	Ref no
	A	Introduction to relations	01	1
	B	Concepts of deciphering relations based problems	02	1
	C	Problems on deciphering jumbled up descriptions	01	1
	D	Relation puzzle	02	1
	E	Coded relations.	01	1

References

Sr. No.	Name of the book	Author	Publication
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1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications
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Unit IV

4	Seating or Placing Arrangement	Lectures Required	Ref no
A	Problems based on linear and circular based arrangement.	06	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit V

5	Direction Sense Test	Lectures Required	Ref no
A	Introduction	01	1
B	Problems based on angular changes in direction	02	1
C	Problems on Shadows	01	1
D	General Problems based on Pythagoras Theorem	01	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit VI

6	Syllogism and Data Sufficiency	Lectures Required	Ref no
A	Syllogism: Introduction of logic, Rules of syllogism, Two statement problem, Three statement problem	07	1
B	Data Sufficiency: Problems of Data sufficiency based on all Chapters.	03	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications
2	Test of Reasoning	<u>Edgar Thorpe</u>	McGraw Hill Education
3	www.practiceaptitudetests.com		
4	www.allindiaexams.in		

Name of Course	B.Sc. SE SY
Semester	IV Semester
Name of Subject	Operating System
Subject Code	S4.CC.2

Unit – I

1.	Introduction	Lecturers Required	Ref. No.
	a) What Operating System Do – 1) User View 2) System View 3) Defining OS	1	1
	b) Computer System Organization	2	1
	c) Computer System Architecture – 1) Single Processor System 2) Multiprocessor System	2	1
	d) Extended Machine Concept	1	2
	e) Operating System Structure	1	1
	f) An Operating System Resource Manager	2	2

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition
2	Operating Systems	Stuart E. Madnick, John J. Donovan	Tata McGraw-Hill Publishing Limited

Unit – II

	System Structure	Lecturers Required	Ref. No.
	a) Operating System Services	1	1
	b) User Operating System Interface – 1) Command Interpreter 2) GUI	1	1, 2
	c) System Boot	1	1, 2
	d) System Calls	1	1, 2
	e) Types of System Calls – 1) Process Control 2) File Management 3) Device Management 4) Information Maintenance 5) Communication 6) Protection	3	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – III

3.	Process Management	Lecturers Required	Ref. No.
	a) Process Concept – 1) The Process 2) Process States 3) Process Control Block	3	1, 2
	b) Process Scheduling – 1) Scheduling Queues 2) Schedulers 3) Context Switching	3	1, 2
	c) Scheduling Criteria	1	1
	d) Scheduling Algorithms – 1) FCFS 2) SJF 3) Priority Scheduling 4) Round-Robin Scheduling	4	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – IV

4.	Multithreaded Programming	Lecturers Required	Ref. No.
	a) Overview	1	1, 2
	b) Multithreading Models	2	1, 2
	c) Thread Libraries – pthreads	1	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – V

5.	Memory Management	Lecturers Required	Ref. No.
	a) Introduction	1	2
	b) Contiguous Memory Allocation 1) Memory Allocation 2) Fragmentation	2	1
	c) Paging 1) Basic Method 2) Hardware Support	2	1
	d) Segmentation 1) Basic Method 2) Hardware Support	3	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – VI

6.	File System	Lecturers Required	Ref. No.
	a) File concept	1	1
	b) Access Methods 1) Sequential 2) Direct	2	1
	c) Directory and Disk Structure 1) Directory Overview 2) Single Level Directory 3) Two Level Directory 4) Tree Structure Directory	3	1

	d)	Allocation Methods 1) Contiguous Allocation 2) Linked Allocation 3) Indexed allocation	3	1
	e)	Free Space Management 1) Bit Vector 2) Linked List 3) Grouping 4) Counting	2	1

Reference:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8 th Edition

Name of Course	B.Sc. (Software Engineering) Second Year
Semester	IV Semester
Name of Subject	Java Programming
Subject code	S4.CC.3

UNIT-I

Sr. No.	Introduction		Lectures Required	Ref. No
1	1.1	Java History	1	1,2,3,4
	1.2	Java Features	2	1,2,3,4
	1.3	How Java Differ from C and C++	2	1,2,3,4
	1.4	JVM	1	3,4
	1.5	Java Environment	1	4
	1.6	Java Programming Structure	1	4
	1.7	Installing and Configuring Java	1	4

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.
2	Java 2 programming black books	Steven Horlzner	DreamTech press
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press
4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi

UNIT-II

Sr. No.	Overview of Java Language		Lectures Required	Ref. No	
2)	2.1	Introduction, Types of Comment	1	1,2,3,4	
	2.2	Java Tokens - Reserve Keywords - Identifiers - Literals - Operators - Separators	7	1,2,3,4	
		2.3	Variables, Constant, Data Types, Array	3	1,2,3,4
		2.4	Type Casting	1	1,2,3,4
		2.5	Control Statement - Branching statement - Looping statement	3	1,4
			2.6	Jumping Statement - break, Continue	1

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.
2	Java 2 programming black books	Steven Horlzner	DreamTech press
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press

4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi
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UNIT-III

Sr. No.	Classes, Objects and Methods		Lectures Required	Ref. No
3)	3.1	Introduction, Defining Class - Fields Declaration - Methods Declaration - Creating Objects - Visibility Control	1	1,2,3,4
	3.2	Use of 'this' Keyword	1	1,2,3,4
	3.3	Method Parameters	1	1,2,3,4
	3.4	Method Overloading	1	1,2,3,4
	3.5	Constructor and Constructor Overloading	1	1,2,3,4
	3.6	Static Members	1	1,2,3,4
	3.7	Finalizer Method	1	1,2,3,4
	3.8	Inheritance and It's Types	1	1,2,3,4
	3.9	Method Overriding	1	1,2,3,4
	3.10	Final Variable, Method and Final Class	1	1,2,3,4
	3.11	Abstract Method and Abstract Class	1	1,2,3,4

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.
2	Java 2 programming black books	Steven Horlznr	DreamTech press
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press
4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi

UNIT-IV

Sr. No.	Interface, Package and Exception Handling		Lectures Required	Ref. No
4)	4.1	Defining and implementing interface	2	2,3,4
	4.2	Inner Classes	1	2,3,4
	4.3	Package - Create Package - Accessing Package	2	2,3,4
	4.4	Exception - Types of Error - Multiple catch statement - Creating User defined Exception - Finally clause	3	2,3,4

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.

2	Java 2 programming black books	Steven Horlzner	DreamTech press
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press
4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi

UNIT-V

Sr. No.	String, Stream and Files		Lectures Required	Ref. No
5)	5.1	Introduction	1	1,2,3,4
	5.2	String Classes	1	1,2,4
	5.3	StringBuffer Class	1	1,2,4
	5.4	Stream Classes	2	1,2,4
		- Types of Streams - Byte Stream Classes - Character Stream Classes		
5.5	File Classes	1	1,2,4	

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.
2	Java 2 programming black books	Steven Horlzner	
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press
4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi

UNIT-VI

Sr. No.	Applet Programming		Lectures Required	Ref. No
6)	6.1	Introduction	1	1,2,3,4
	6.2	Creating Applets	1	1,2,3,4
	6.3	Applet Life Cycle	1	1,2,3,4
	6.4	Applet Tag	1	1,2,3,4
	6.5	Passing Parameters to Applets	1	1,2,3,4
	6.6	Working with Graphics	1	1,2,3,4

References:

Sr. No	Name of Book	Writer	Publication
1	Complete Reference	Herbert Schildt	Tata McGraw-Hill publishing company Ltd.
2	Java 2 programming black books	Steven Horlzner	DreamTech press
3	Core Java Volume-I- Fundamentals Eighth Edition	Cay S. Horstmann, Gary Cornell, Prentice Hall	Sun Microsystems Press
4	Programming with Java	E Balagurusamy	The McGraw Hill Education Pvt. Ltd. New Delhi

Name of Course	B.Sc SE SY
Semester	IV Semester
Name of Subject	Relational Database Management System
Subject Code	S4.CC.4

Unit – I

1.	Introduction and Basic Concepts	Lecturers Required	Ref. No.
	a) Structure of DBMS	2	1
	b) Advantages and Disadvantages of DBMS	1	1
	c) Users of DBMS	1	1
	d) Relational Database: Entities, Attributes and Domains	1	1
	e) Tuples, Relations and their schemes.	1	1

References:

1)	"An Introduction to Database Systems": -by Bipin C Desai Revised Edition Galgotia Publication
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Unit – II

2.	SQL Statements & Working With Tables	Lecturers Required	Ref. No.
	a) What is SQL?	01	1
	b) Types of SQL Commands (DDL, DML, DQL, DCL, Transaction Control Commands)	03	1
	c) Data types in SQL	03	1
	d) Creating Tables	03	1
	e) Selecting from tables, WHERE Clause	01	1
	f) Selecting from tables, DISTINCT Clause, Column aliasing	03	1
	g) Manipulation Table data	03	1
	h) Altering Table structure	03	1
	i) Data Constraints: Unique, Not Null, Primary Key, Foreign Key, Check, Default Constraint	03	1

References :

1)	"Oracle Database 10g PL/SQL Programming" by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	"Oracle Database 10g The Complete Reference" By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Unit – III

3.	Operators & SQL Functions & Views	Lecturers Required	Ref. No.
	a) Arithmetic Operators, Relational Operators	1	1
	b) Comparison Operators BETWEEN , IN, LIKE, IS NULL	02	1
	c) LOGICAL Operators: AND OR NOT	01	1
	d) SQL Functions: Single, Multiple Row Functions	01	1
	e) Single Row Character , Single Row Number, Single Row Date, Single Row Conversion, Single Row General Functions	05	1
	f) Multiple Row Functions	03	1
	g) Views	02	

References:

1)	“Oracle Database 10g PL/SQL Programming” by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	“Oracle Database 10g The Complete Reference” By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Unit – IV

4.	Sorting & Grouping Data and Joining Tables & Subqueries in ORACLE	Lecturers Required	Ref. No.
	a) What is Sorting?	01	1
	b) ORDER BY & ORDER BY DESC Clauses	02	1
	c) GROUP BY & GROUP BY HAVING Clauses	02	1
	d) What is Join? Join Styles: Theta , ANSI , Using clause	01	1
	e) Types of Joins: Equi Joins, Non Equi Join, Outer Join: Left, Right, Full	04	1
	f) Self Join Cross Join, Joining three tables	03	1
	g) Subqueries & its types	03	

References :

1)	“Oracle Database 10g PL/SQL Programming” by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	“Oracle Database 10g The Complete Reference” By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Unit – V

5.	Introduction to PL/SQL		Lecturers Required	Ref. No.
	a)	PL/SQL Overview	02	1
	b)	Declarations Section	02	1
	c)	Executable Commands Section	02	1
	d)	Exception Handling Section	02	1

References :

1)	“Oracle Database 10g PL/SQL Programming” by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	“Oracle Database 10g The Complete Reference” By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Unit – VI

6.	Database Triggers & Cursors		Lecturers Required	Ref. No.
	a)	What are Triggers? Triggers Syntax	02	1
	b)	Types of triggers Row Level Statement Level, Before , After Instead of Triggers	03	1
	c)	Enabling and Disabling Triggers Replacing and Dropping Triggers	02	1
	d)	Working With Cursor % TYPE Variable % ROWTYPE Variable	02	1

References :

1)	“Oracle Database 10g PL/SQL Programming” by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	“Oracle Database 10g The Complete Reference” By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Name of Course	B.Sc SE SY
Semester	IV Semester
Name of Subject	Computer Graphics
Subject Code	S4.CC.5.1

UNIT I

1	Introduction to computer graphics		Lectures Required	Ref no
	a	Introduction	01	01
	b	Advantages of CG	01	01
	c	Applications of CG	01	01,02
	d	Display Devices	01	01
	e	Cathode ray tubes	02	01,02
	f	Color CRT monitors	01	01,02
	g	Direct View Storage Tube	01	01

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	Procedural elements for computer graphics	david f. Rogers	THM

UNIT II

2	Raster Scan graphics & Transformation		Lecturers Required	Ref no
	a	Line drawing algorithm	01	01,02
	b	Digital Differential Analyzers	02	01,02
	c	Bresenham`s Line algorithms	02	01,02

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	procedural elements for computer graphics	david f. Rogers	THM

UNIT III

3	Transformation		Lecturers Required	Ref no
	d	Two dimensional transformation	01	01,02
	e	Matrix representation	01	01,02
	f	Translation	01	01,02
	g	Rotation	01	01,02
	h	Scaling	01	01,02
	i	Reflection	01	01,02
	j	Shearing	01	01,02

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	procedural elements for computer graphics	david f. Rogers	THM

UNIT IV

4	Segmented Display Files		Lecturer Required	Ref no
	a	Segment table	01	01,02
	b	Functions for segmenting display file	01	01,02
	c	Posting & unposting segments	01	01,02
	d	Segment naming scheme	01	01,02
	e	Default error conditions	01	01,02
	f	Appending to segments	01	01,02

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	Computer graphics	-A.P.Gogse	

UNIT V

5	Clipping window & display file Compilation		Lecturer Required	Ref no
	b	2-D clipping	01	01,02
	c	Simple visibility algorithm	02	01,02
	d	End point codes	01	01,02
	e	Midpoint subdivision algorithm	01	01,02
	h	Display File Compiler	01	01,02
	i	Refresh concurrent with reconstruction	01	01,02
	j	Free storage allocation	01	01,02
	k	Display file structure	01	01,02

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	Computer graphics	-A.P.Gogse	

UNIT VI

6	Geometrics Model & Graphics package		Lecturer Required	Ref no
	b	Geometric modeling	01	01,02
	c	Symbols & instances	02	01,02
	d	Implementation of Instance transformation	02	01,02
	e	Ground rules for graphics s/w design	01	01,02
	f	Function domains	02	01,02
	g	Graphics primitives	02	01,02

References :

Sr.No.	Name of the book	Author	Publication
1	Principles of interactive computer graphics	William Newman & Robert Sproull	THM
2	procedural elements for computer graphics	david f. Rogers	THM

Name of Course	B.Sc SE SY
Semester	IV Semester
Name of Subject	Compiler Designing
Subject Code	S4.CC.5.2

Unit – I

1.	Introduction to Compiling		Lectures Required	Ref. No.
	a)	Compilers and Translators.	01	1
	b)	Need of translators	01	1
	c)	Phases of a compiler		
	d)	Lexical analysis		
	e)	Syntax analysis		
	f)	Intermediate code generation		
	g)	Optimization		
	h)	Code generation		
	i)	Compiler construction tools		
	j)	A simple one pass compiler		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Unit – II

2.	Programming languages		Lectures Required	Ref. No.
	a)	High - Level programming languages	01	1
	b)	Definitions of programming languages	01	1
	c)	The Lexical & syntactic structure of a language		
	d)	Data elements		
	e)	Data structures		
	f)	Operators, Assignment , Statements.		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Unit – III

3.	Lexical Analysis		Lectures Required	Ref. No.
	a)	Role of a Lexical analyzer,	01	1
	b)	input buffering,	01	1
	c)	Simple approach to the design of Lexical Analysis		
	d)	Regular Expression,		
	e)	finite automata,		
	f)	A language for specifying lexical analyzer.		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Unit – IV

4.	Syntax Analysis		Lectures Required	Ref. No.
	a)	Role of Parser,	01	1
	b)	Context free Grammar,	01	1
	c)	Capabilities of context-free grammars Top-down Parsing,		
	d)	Predictive parsers,		
	e)	Bottom-Up parsing,		
	f)	Operator precedence parsing		
	g)	LR,		
	h)	automatic construction of parser using YACC,		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Unit – V

5.	Syntax Directed Translation and intermediate code generation		Lectures Required	Ref. No.
	a)	Syntax directed definitions,	01	1
	b)	Implementation of Syntax directed translators,	01	1

	c)	Intermediate code Postfix Notation and Evaluation of Postfix Notation,		
	d)	Parse trees and syntax trees		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Unit – VI

6.	Error detection, recovery and Introduction to Code Optimization		Lectures Required	Ref. No.
	a)	Errors	01	1
	b)	Lexical-phase errors	01	1
	c)	Syntactic phase errors		
	d)	Semantic errors		
	e)	Sources of optimization		
	f)	Loop optimization		

References :

Sr.No.	Name of the book	Author	Publication
1	Compilers - Principles, Techniques and Tools	A.V. Aho, R. Shethi and J.D. Ullman	Pearson Education.
2	Compiler Construction	Dhamdere	Mc-Millan

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	Computer Architecture and Microprocessor
Subject Code	S4.CC.5.3

Unit – I

1.	Introduction to Processor Design		Lectures Required	Ref. No.
	g)	Processor level components.	01	1
	h)	Processor organization	01	1
	i)	Information representation	01	1
	j)	Instruction types: Depending on address, operation and design complexity.	03	1
	k)	Vector concepts	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Architecture and Organization	J.P. Hayes (MGH)	McGraw-Hill International editions

Unit – II

2.	Control Unit and Memory Organization		Lectures Required	Ref. No.
	a)	Hardwired control unit	03	1
	b)	Microprogrammed control unit	01	1
	c)	Virtual Memory	02	1
	d)	Memory: Hierarchies, Allocation and Segmentation.	03	1
	e)	High speed Memories: Interleaved and Associative memory	02	1

References:

Sr. No.	Name of the book	Author	Publication
1.	Computer Architecture and Organization	J.P. Hayes (MGH)	McGraw-Hill International editions

Unit – III

3.	8085 Microprocessor Architecture		Lectures Required	Ref. No.
	a)	Features of 8085 microprocessor	01	1
	b)	Block diagram of 8085 microprocessor	03	1
	c)	Pin diagram of 8085 microprocessor	02	1

	d)	De-multiplexing of address and data bus	01	1
	e)	Instruction cycle: Fetch and Executive cycle	01	1

References:

Sr. No.	Name of the book	Author	Publication
1.	Microprocessor 8085	B.RAM	Dhanpat Rai publications

Unit – IV

4.	Addressing modes of 8085 Microprocessor		Lecturers Required	Ref. No.
	a)	Register addressing mode	01	1
	b)	Direct addressing mode	01	1
	c)	Register indirect addressing mode	01	1
	d)	Immediate addressing mode	01	1
	e)	Implicit/Implied addressing mode	01	1

References:

Sr. No.	Name of the book	Author	Publication
1.	Microprocessor 8085	B.Ram	Dhanpat Rai publications

Unit – V

5.	Instruction set of Intel 8085 Microprocessor		Lecturers Required	Ref. No.
	a)	Data Transfer group of instructions	02	1
	b)	Arithmetic group of instructions	02	1
	c)	Logical group of instructions	02	1
	d)	Branch group of instructions	02	1
	e)	I/o and machine control group of instructions	02	1

References:

Sr. No.	Name of the book	Author	Publication
1.	Microprocessor 8085	B.Ram	Dhanpat Rai publications

Unit – VI

6.	Assembly Language Programming of 8085 Microprocessor		Lecturers Required	Ref. No.
	Assembly language programming		06	1

References:

Sr. No.	Name of the book	Author	Publication
1.	Microprocessor 8085	B.Ram	Dhanpat Rai publications

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	Lab-1 (Java Programming)
Subject Code	S4.Lab1

PRACTICAL List:

- 1) Program to demonstrate Constant Variable.
- 2) Program to demonstrate scope of Variable
- 3) Program to demonstrate branching statement
- 4) Program to demonstrate Looping statement
- 5) Program to demonstrate simple class
- 6) Program to demonstrate method parameter
- 7) Program to demonstrate method overloading
- 8) Program to demonstrate constructor
- 9) Program to demonstrate static member
- 10) Program to demonstrate Method overriding
- 11) Program to demonstrate Final variable, Method and Final Class.
- 12) Program to demonstrate Finilize method()
- 13) Program to demonstrate Array and It's types.
- 14) Program to demonstrate String class and it's method.
- 15) Program to demonstrate String Buffer and it's method.
- 16) Program to demonstrate inheritance and its Types
- 17) Program to demonstrate Abstract method and Abstract Class.
- 18) Program to demonstrate Multiple catch statement
- 19) Program to demonstrate finally clause
- 20) Program to demonstrate package
- 21) Program to demonstrate interface
- 22) Program to demonstrate Applet life cycle
- 23) Program to demonstrate param tag
- 24) Program to demonstrate Graphics class

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	Lab-2 (RDBMS)
Subject Code	S4.Lab2

PRACTICAL List:

Sr. No.	Title of Programme	Required Hours
1)	What is SQL? Types of SQL Commands	3 hours
2)	Study of Datatypes in ORACLE	3 hours
3)	Creating Tables & Retrieving , Manipulating Data from tables	3 hours
4)	Study of Altering Tables IN ORACLE	3 hours
5)	Study of Data Constraints in ORACLE	3 hours
6)	Study of Operators	3 hours
7)	Study of SQL Functions	3 hours
8)	Study of Views in ORACLE	3 hours
9)	Study of Joining Tables in ORACLE	3 hours
10)	Study of Subqueries in ORACLE	3 hours
11)	Study of in PL/SQL Blocks in ORACLE	3 hours
12)	Study of in Triggers in ORACLE	3 hours
13)	Study of in Cursors in ORACLE	3 hours

References:

1)	“Oracle Database 10g PL/SQL Programming” by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.
2)	“Oracle Database 10g The Complete Reference” By Kevin Loney, Bob Bryla Oracle Press (TATA McGraw Hill Edition) ISBN-13:978-0-07-059425-8, ISBN-10: 0-07-059425-2
3)	SQL, PL/SQL the programming language of ORACLE 4 th Edition by Ivan Bayross ISBN-81-7656964-X

Name of Course	B.Sc. SE SY
Semester	IV Semester
Name of Subject	Elective-2 Practical
Subject Code	S4.Lab-3.1 (Computer Graphics)

1.	Study of Graphics Library Function in C
2.	Program to draw a line, circle, rectangle etc.
3.	Program to draw multiple shapes using loops.
4.	Program to implements DDA algorithm.
5.	Program to implements Bresenhams, Algorithms.
6.	Program to implements Integer Bresenhams Algorithms.
7.	Program to implements General Bresenhams Algorithms.
8.	Program to implements Simple Visibility mode.
9.	Program to implements Mid-Point sub division algorithm.
10.	Program to implements Translation Transformation.
11.	Program to implements Rotation Transformation
12.	Program to implements Scaling Transformation
13.	Program to implements Shearing Transformation
14.	Program to implements Reflection Transformation
15.	Program for demonstration of setfillstyle and floodfill functions.
16.	Program for demonstration of getimage and putimage function.
17.	Program for creating simple animations.
18.	Program for demonstration of setting font style, font name and size.

Name of Course	B.Sc. SE SY
Semester	III Semester
Name of Subject	Elective-2 Practical
Subject Code	S4.Lab 3 .2Elective-II (Compiler Designing)

1. Study of Phases of the compiler
2. Sample program based on data structure, operators and different statements.
3. Sample program for the Simple approach for the design of Lexical analyzer.
4. Program to check whether the string given, belong to the same grammar or not.
5. Study of finite automata for different languages.
6. Program for implementation of finite automata for the simple language.
7. Study of a language for specifying lexical analyzer
8. Study of context free grammar for the different statement.
9. Program for creating parse tree of the simple expression.
10. Program for implementation of parses from the simple grammar
11. Study of different parsing technique
12. Study of Intermediate code generation.
13. Program for converting Infix to Postfix and Prefix Notation
14. Study of Code Optimization.
15. Study of Different Compiler Construction tools.
16. Practice of Lex/Yacc of Compiler writing
17. To show all the operations of a stack
18. Design a lexical analyzer for given language and the lexical analyzer should ignore redundant spaces, tabs and new lines. It should also ignore comments

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	Lab-3 (Computer Architecture and Microprocessor)
Subject Code	S4.Lab3.3

List of Practical's of 8085 Microprocessor

Sr.No.	Aim of practical
1.	Write an ALP to add two 8-bit numbers ,whose sum is also 8-bit.
2.	Write an ALP to add two 8-bit numbers ,whose sum is 16-bit.
3.	Write an ALP to add two 16-bit numbers ,whose sum is also 16-bit.
4.	Write an ALP to add two 16-bit numbers ,whose sum is more than 16-bits.
5.	Write an ALP to perform subtraction of two 8-bit numbers.
6.	Write an ALP to find 1's complement of 8-bit number.
7.	Write an ALP to find 1's complement of 16-bit number.
8.	Write an ALP to find 2's complement of 8-bit number.
9.	Write an ALP to find 2's complement of 16-bit number.
10.	Write an ALP to find larger number between two 8-bit numbers.
11.	Write an ALP to find larger number between array of numbers.
12.	Write an ALP to find smaller number between two 8-bit numbers.
13.	Write an ALP to find larger number between array of numbers.
14.	Write an ALP to arrange a series of numbers in ascending order.
15.	Write an ALP to arrange a series of numbers in descending order.
16.	Write an ALP to find a square of number from look-up table.

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	MySQL (SQL/PL-SQL)
Subject Code	S4.SEC.1.1

[SQL COMMANDS]

- 1) SQL* formatting commands
- 2) To create a table, alter and drop table.
- 3) To perform select, update, insert and delete operation in a table.
- 4) To make use of different clauses viz where, group by, having, order by, union and intersection,
- 5) To study different constraints.

[SQL FUNCTION]

- 6) To use oracle function viz aggregate, numeric, conversion, string function.
- 7) To understand use and working with joins.
- 8) To make use of transaction control statement viz rollback, commit and save point.
- 9) To make views of a table.
- 10) To make indexes of a table.

[PL/SQL]

- 11) To understand working with PL/SQL
- 12) To implement Cursor on a table.
- 13) To implement trigger on a table

Books Recommended:

1. Baron Schwartz , High Performance MySQL, O'Reilly, 2012.
2. Vikram Vaswani , The Complete Reference MySQL , McGraw Hill Educations, 2004.

Name of Course	B.Sc(SE)SY
Semester	IV Semester
Name of Subject	Multimedia and Applications
Subject Code	S4.SEC.1.2

List of Practical for Multimedia

Practical NO.	Name of Practical
1	Study of Multimedia Elements
2	Study of Opening Screen of Power Point
3	Study of Power Point Presentation of MM Elements
4	Study of Opening Screen of Adobe Photoshop
5	Study to change back ground color of image in Adobe Photoshop.
6	Study to Effect to back ground image in Adobe Photoshop.
7	Study to clear underexposed in Adobe Photoshop.
8	Study to apply canvas effect in Adobe Photoshop.
9	Study to enlarge your image with minimal visible Loss.
10	Study to create user defined brush in Adobe Photoshop.
11	Study to apply sketch effect in Adobe Photoshop.
12	Study to apply wind effect to text in Adobe Photoshop.
14	Study to create bouncing ball in Macromedia Flash.
15	Study to create Rolling ball in Macromedia Flash.

Name of Course	B.Sc SE SY
Semester	IV Semester
Name of Subject	XML Programming
Subject Code	S4.SEC.1.3

1. Introduction to XML

How is XML used?

Rules of XML

XML Syntax

XML Declarations

XML tags

XML Document

- Elements
- Tags and attributes
- Entity references
- Comments
- Processing instructions
- CDATA sections
- Well Formed XML Documents
- XML DTD's
- XML Schemas
- Using XML Parser
- XSL

2. XML DOM

- DOM Introduction
- DOM Nodes
- DOM Accessing
- DOM Node Info
- DOM Node List
- DOM Traversing
- DOM Navigating
- DOM Get Values -
- DOM Change Nodes
- DOM Remove Nodes
- DOM Replace Nodes
- DOM Create Nodes
- DOM Add Nodes
- DOM Clone Nodes
- DOM Examples

3. XML DTD

- DTD Introduction
- DTD Building Blocks
- DTD Elements
- DTD Attributes
- DTD Elements vs Attribute
- DTD Entities
- DTD Examples

4. XSLT

- XSLT Introduction
- XSL Languages
- XSLT Transform
- XSLT <template>
- XSLT <value-of>
- XSLT <for-each>
- XSLT <sort>
- XSLT <if>
- XSLT <choose>
- XSLT Apply
- XSLT on the Client
- XSLT on the Server
- XSLT Edit XML
- XSLT Examples

References

1. XML in a Nutshell by Harold, Elliotte Rusty and W. Scott Means. 2004. , 3rd Edition. O'Reilly & Associates. 689 p. ISBN 0596007647.
2. Beginning XML by Danny Ayers, Joe Fawcett, and Liam R. E. Quin, 5th Edition, Wrox Publication, January 2012.
3. Learning XML by Erik T. Ray O'Reilly Media 1st edition 2001.