NALLAMUTHU GOUNDER MAHALINGAM COLLEGE
(AUTONOMOUS)
U.G.DEPARTMENT OF COMPUTER APPLICATIONS
UNDER CHOICE BASED CREDIT SYSTEM (UCBCS) 2013-2014 ONWARDS
SCHEME OF EXAMINATIONS

I SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
1	I	13UTL01	Tamil Paper-I	6	3	25	75	100
2		13UHN01	Hindi Paper-I					
3		13UFR01	French Paper-I					
4	II	13UEN01	English Paper-I	6	3	25	75	100
5	III	13UBC01	COBOL Programming	4	4	25	75	100
6		13UBC02	Fundamentals Of Digital Computer	4	3	25	75	100
7		13UBC03	Mathematics-I: Computer Oriented Numerical and Statistical Methods.	4	3	25	75	100
8		13UBC04	Programming Lab-I :COBOL	4	2	20	30	50
9	IV	08 EVS 01	EVS	1	-	-	-	50
10		09HEC 01	Human Excellence-1: Personal Values	1	-	-	75	75
TOTAL				30	18			675

II SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
11	I	13UTL02	Tamil Paper -II	6	3	25	75	100
12		13UHN02	Hindi Paper -II					
13		13UFR02	French Paper-II					
14	II	13UEN02	English Paper -II	5	3	25	75	100
15	III	13UBC05	Programming in C	4	4	25	75	100
16		13UBC06	Computer system Architecture	4	3	25	75	100
17		13UBC07	Marketing and HR Management	4	3	25	75	100
18		13UBC08	Programming Lab-II:C.	4	2	20	30	50
19	IV	08EVS01	EVS	1	2	-	50	50
20		09HEC02	Human Excellence-2: Family Values	1	-	-	75	75
21		09HECP01	Yoga Practical-I	-	2	-	50	50
22		12UHR01	Human Rights	1	2	-	-	100
TOTAL				30	24			825

III SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/ Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
23	III	13UBC09	Object oriented Programming with C++	4	4	25	75	100
24		13UBC10	RDBMS and Visual Basic Programming	4	4	25	75	100
25		13UBC11	Data Structures and Algorithms	4	4	25	75	100
26		13UBC12	Accounting and Financial Management	5	5	25	75	100
27		13UBC13	Programming Lab-III:C++	4	2	20	30	50
28		13UBC14	Programming Lab-IV:VB & ORACLE	4	2	20	30	50
29	IV	09HEC03	Human Excellence -3: Professional Values	1	-	-	75	75
30		13UBCSA1	Elective-I Software Analysis and Design	4	2	-	50	50
31		13UBCSB1	Elective-II: E-Commerce					
32		13UBCS01	Programming Lab: MS-Office(Self –Study)	-	-	-	-	**50**
. TOTAL				30	23			625

IV SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
33	III	13UBC15	Operating Systems with LINUX	5	4	25	75	100
34		13UBC16	Web Designing	5	4	25	75	100
35		13UBC17	Software Industry Domains	4	4	25	75	100
36		13UBC18	Mathematics-II Computer Based Optimization Techniques	4	5	25	75	100
37		13UBC19	Programming Lab-V: LINUX	4	2	20	30	50
38		13UBC20	Programming Lab-VI: Web Designing	4	2	20	30	50
39	IV	09HEC04	Human Excellence -4: Social Values	1		-	-	50
40		09HECP02	Yoga Practical-II	-	2	-	50	50
41		13UBCS A2	Elective –III : Software Engineering	3	2	-	50	50
42		13UBCS B2	Elective- IV: Multimedia and Animation					
43		13UBCS02	Programming Lab: DTP (Self-Study)	-	-	-	-	**50**
44	V		NSS/NCC/Sports And Games	-	1	-	-	-
TOTAL				30	26			650

V SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
45	III	13UBC21	Programming In Java	4	4	25	75	100
46		13UBC22	Networks	5	4	25	75	100
47		13UBC23	DOT NET Programming	5	4	25	75	100
48		13UBC24	Software Testing	4	4	25	75	100
49		13UBC25	Programming Lab-VII:JAVA	5	2	20	30	50
50		13UBC26	Programming Lab-VIII : DOT NET	5	2	20	30	50
51	IV	09HEC05	Human Excellence-5 National Values	1	-	-	75	75
52		13UBCNA1	Non Major Elective-I: Green Computing	1	2	-	50	50
53		10GKL 01	General Awareness(Self Study)	-	2	-	50	50
TOTAL				30	24			675
54		Add-on Course	Mini Project	-	-	-	-	**100**

VI SEMESTER

S.NO	PART	SUBJECT CODE	TITLE	Hrs/ Wk	CREDIT	MAX MARKS		
						INT	EXT	TOTAL
55	III	13UBC27	J2EE Technologies	5	4	25	75	100
56		13UBC28	Cloud Computing	4	4	25	75	100
57		13UBC29	Data Mining and Warehousing	4	4	25	75	100
58		13UBC30	Organizational Behaviour	4	4	25	75	100
59		13UBC31	Programming Lab IX: J2EE Technologies	5	2	20	30	50
60		13UBC32	Programming Lab X: Graphics and Multimedia	5	2	20	30	50
61	IV	09HEC05	Human Excellence :6 Global Values	1	-	-	75	75
62		09HECP03	Yoga Practical-III	1	2	-	-	50
63		13UBCNA2	Non Major Elective II:DTP Programming	1	2	-	50	50
TOTAL				30	24			675

TOTAL CREDITS: 139
TOTAL MARKS : 4125
NOTE : Period of Duration for ESE Theory and Practical is 3 hours.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 01	COBOL PROGRAMMING	SEMESTER I
Credits: 4		52 Hours

Objective: To equip the students to program well in the programming language COBOL through its basic concepts.

Unit: I **10 Hours**

Introduction to COBOL- History of COBOL- Coding Format for COBOL Programs- Structure of a COBOL Program – Character Set- COBOL words- Data Names and Identifiers- Literals- Figurative Constants-Continuation of Lines.

Identification and Environment Division-Data Division-Introduction-Level Structure-Data Description Entries-Picture Clause- Value Clause- File Section- Working Storage Section-Editing.

Unit: II **10 Hours**

More about Procedure Division-Procedure Division and Basic Verbs- Structure of the Procedure Division- Data Movement Verbs-Move-Arithmetic Verbs-Sequence Control Verbs-Input and Output Verbs-Conditional Verb.

More about Data Division-Usage Clause-Synchronized Clause-Justified Clause-Redefines Clause-Renames Clause-Qualification of Data Names-Sign Clause.

Unit: III **12 Hours**

More about Data Movement Verb and Arithmetic Verbs-Elementary and Group Moves-Corresponding Option-Rounded Option- On Size Error Option-Compute Verb-Conditional and Sequence Control Verb-Condition.

If statement-GOTO with Depending Phrase- Alter Statement-Perform Statement-Exit Statement-Table Handling-Occurs Clause and Subscripting-Assigning Values to Table Elements-Multidimensional Tables-Perform Verb and Table Handling-Index Tables and Indexing-Set Verb-Search Verb-Occurs Depending Clause-Sorting a Table-Index Data Item-Use of Indexes and Index Data Item.

Unit: IV **10 Hours**

Structured Programming-Program Design-Current Trends in Data Processing-Objectives and Methodologies of Structured Programming in COBOL-Sequential Files-File Characteristics-File Control Entries for Sequential Files-File Descriptions-Fixed Length Records-Statements for Sequential Files-Sequential Files with Variable Length Records.

Unit: V **10 Hours**

Character Handling-Examine Verb-Inspect Verb-String and Unstring Verbs-COBOL Subroutines-Sorting and Merging of Files-More About Structured Programming-Direct Access Files-Relative Files-Indexed Sequential Files.

TEXT BOOK:

1. M.K.Roy and D.Ghosh Dastidar, *COBOL Programming***,** Tata McGraw-Hill, Second Edition, 1998

BOOKS FOR REFERENCE:

1. Phillipakis, *Structured COBOL programming*, Tata McGraw-Hill, Second Edition, 1990
2. Litecky, Charles R, Davis ,Gordan.B ,*Structured COBOL : A step by step approach*, Tata McGraw-Hill, Second Edition,1987

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 02	FUNDAMENTALS OF DIGITAL COMPUTER	SEMESTER I
Credits: 3		52 Hours

Objective: To provide the fundamental details about the internals of computers.

Unit: I **10 Hours**

Flowchart and Number Systems: Logic and Flowcharting - Flowcharting-Flowcharting Symbols-Program Specification Analysis - Program Specification - Introduction- Input-Output - Throughput.

Number system – Digital Computers and Digital Systems – Binary Numbers – Number Based Conversions – Octal and Hexadecimal Numbers – Complements – Binary Codes.

Unit: II **10 Hours**

Boolean Algebra: Boolean Algebra and Logic Gates-Basic Definition – Axiomatic Definition of Boolean Algebra – Basic Theorems and Properties of Boolean Algebra – Boolean Functions – Other Logic Operations – Digital Logic Gates – IC Digital Logic Families – Semiconductor Memory – Bipolar MDS – ROM – RAM – PROM – EPROM.

Unit: III **10 Hours**

Combinational Logic: Introduction – Adders – Full Adder – Half Adder- Subtractor – Half subtractor - Full Subtractor – Multilevel NAND circuits – Multilevel NOR Circuits – Binary Parallel Adder – Decimal Adder – BCD Adder – Decoders – Encoder – Multiplexers – De Multiplexers

Unit: IV **10 Hours**

Introduction – Flip Flops – Triggers of Flip Flops – Flip Flops Excitation Table – Design Procedure – Design Counters – Registers, Counters and Memory Unit. Registers – Shift Registers – Ripple Counters – Synchronous Counters – Timing Sequence.

Unit: V **12 Hours**

Input-Output Devices**:** Punched Tape, Tape Readers – Punched Cards – Card Readers – Alphanumeric Codes – Character Recognition – MICR – OCR –Output Equipment **-** Printers – CRT Output Devices – Magnetic tape – Output Offline Operation – Error Detecting and Error Correcting Codes – Keyboards – Terminals – Floppy Disks – Magnetic tape – Tape Cassettes & Cartridges.

TEXT BOOKS:

1. M.Morris Mano – *Digital Logic and Computer Design* – Prentice Hall Of India, 1998. (I, II, III, IV).
2. Thomas C.Bartee- *Digital Computer Fundamentals,*Tata McGraw-Hill, Sixth Edition, 1991
3. J. Maynard, *Computer Programming*, International Edition.

BOOKS FOR REFERENCE:

1. Donald P Leach, Albert Paul Malvino, Goutam Saha, *Digital Principles and Applications*, Tata McGraw-Hill, Sixth Edition, 2006

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 03	MATHEMATICS-I: COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS	SEMESTER I
Credits: 3		52 Hours

Objective: To equip the students with numerical skills which helps in solving aptitude.

Unit: I: **10 Hours**

Introduction - Bisection Method – Method of Successive Approximations or the Iteration Method- Method of False Position- Newton Raphson Method –Horner's Method

Unit: II **11 Hours**

System of Linear Algebraic Equations- Gauss Elimination- Inverse of Matrix using Gauss Elimination- Gauss Jordan – Triangularization-Gauss Jacobi and Gauss Seidal Method

Unit: III **10 Hours**

Interpolation and Approximation – Newton, Lagrange's Method- Numerical Differentiation and Integration- Method's Based on Interpolation-Trapezoidal Rule- Simpson's 1/3 and $3/8^{th}$ rule.

Unit: IV **11 Hours**

Correlation Analysis-Meaning-Types-Degrees of Correlating-Scatter Diagram-Correlation Graph-Karl Pearson's Coefficient of Correlation- Rank Correlation- Coefficient of Concurrent Deviations-Methods of Least Squares

Unit: V **10 Hours**

Regression Analysis-Meaning- Types of Regression –Regression Equations-Regression Equations from Mean-Regression Coefficients-Properties of Regression Coefficients-Correlation and Regression, a Comparison.

TEXT BOOKS:

1. P.Kandasamy, K.Thilagavathy,K.Gunavathi, Numerical Methods, S.Chand & Company Ltd, First Edition 1999
2. S.P Gupta, *Statistical Methods* ,Sultana Chand & Sons , Thirty-Fourth Edition, 2004

BOOKS FOR REFERENCE:

1. R. S. N. Pillai, V. Bagavathi, *Statistical Methods***,** Sultan Chand and Sons & Company Ltd., Revised Edition, 2005.
2. Dr. M.K. Venkataraman, *Numerical Methods in Science And Engineering,* National Publishing Co., Fifth Edition, 2005.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC 03	**PROGRAMMING LAB – I: COBOL**	**SEMESTER I**
Credits: 2		

1) Write a program to Manipulate two numbers.
2) Write a program to calculate simple interest.
3) Write a program to convert celcius to Fahrenheit.
4) Write a program to calculate volume of cone and cylinder.
5) Write a program to find greatest of two numbers.
6) Write a program to check whether the given number is odd or even.
7) Write a program to check whether the given year is leap year or not.
8) Write a program to check whether the given number is Armstrong or not.
9) Write a program to calculate the sum of digits
10) Write a program to create a student mark list
11) Write a program to calculate the gross pay of an Employee.
12) Write a program to reverse the given digit.
13) Write a program to generate Fibonacci series.
14) Write a program to find the Factorial of the given number.
15) Write a program to check whether the given number is prime or not.
16) Write a program to print the Armstrong series.
17) Write a program to replace the given string.
18) Write a program to sort a table.
19) Write a program to create Student File using Sequential Mode.
20) Write a program to create Student File using Relative Mode.
21) Write a program to create Student File using Indexed Mode.
22) Write a program to sort the records of the file.
23) Write a program to merge two files.
24) Write a program to create a subroutine.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 05	PROGRAMMING IN 'C'	SEMESTER II
Credits: 4		52 Hours

Objective: To equip the students to program well in the programming language C through its basic concepts

Unit- I: **10 Hours**

Overview of C-Introduction-Importance of C-Basic Structure of C Program- Constants-Variables,DataTypes,Character Set- Tokens-Keywords and Identifiers-Constants-Variables—Data Types-Declaration of Variables-Assigning Values to Variables-Defining Symbolic Constants-Operations & Expressions-Arithmetic Operators-Relational – Logical- Assignment- Increment & Decrement-Conditional Operator-Bitwise and Special Operator-Arithmetic Expressions-Evaluation of Expressions-Precedence of Arithmetic Operators-Type Conversions in Expressions-Operator Precedence and Associativity- Mathematical Functions.

Unit: II **10 Hours**

Managing I/O operations-Reading a character-Writing a Character-Formatted Input-Formatted Output-Decision Making and Branching- Decision Making with IF Statement-Simple IF Statement-IF…….ELSE-Nesting of IF……ELSE Statements-ELSE……IF LADDER-Switch Statement-?:- GOTO Statement-Decision Making and Looping-WHILE Statement-DO Statement-FOR Statement-JUMP IN LOOPS.

Unit: III **12 Hours**

Arrays-One Dimensional Array-Two Dimensional Arrays-Initializing Two Dimensional Arrays-Multi Dimensional Arrays-Handling of Character Strings-Declaring and Initializing String Variables-Reading Strings from terminal-Writing Strings to Screen-Arithmetic Operations on Characters-Putting Strings Together-Comparison of Two strings-String Handling Functions-Table of Strings-User Defined Functions- Need for User Defined Functions-Need for User Defined Functions- A Multiplication Program-Form of C Functions- Return Values and their Types-Calling a Function-Category of Functions-No Arguments and No Return Types-Argument but No Return Types-Arguments with Return Values-Handling of Non-Integer-Functions- Nesting of Functions-Rehearsal-Function with Arrays-Scope and Life Time of Variables in Functions-ANSI C Functions.

Unit: IV **10 Hours**

Structures and Unions-Structure Definition-Giving Values to Numbers-Structure Initialization-Comparison of Structure Variables-Arrays of Structures-Arrays with Structures-Structures-Structures and Functions-Unions-Size of Structures-Bitwise-Pointers-Understanding Pointers-Accessing the Address of Variables-Declaring and Initializing Pointers- Accessing a Increments and Scale Factor-Pointer and Arrays-Pointer and Character Strings- Pointers and Functions- Pointers and Structures-Points on Pointers.

Unit: V **10 Hours**

File Management in C-Defining and Opening a File-Closing a File-I/O Operation on Files-Error Handling during I/O Operations-Random Accesses Files-File Inclusion- Compiler Control Directives.

TEXT BOOK:

1. E.Balagurusamy, *Programming in ANSI C,* Tata McGraw-Hill publications, Fourth Edition, 2007

BOOKS FOR REFERENCE:

1. Yashavant Kanetkar, *Let Us C,* BPB Publications, *3rd Edition, 1999*
2. Yashavant P. Kanetkar, *Test Your C Skills,* BPB Publications, First Indian Edition, 1997.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 06	COMPUTER SYSTEM ARCHITECTURE	SEMESTER II
Credits: 3		52 Hours

Objective: To know about the architectural view of computers

Unit: I: **10 Hours**

Basic Computer Organization- Instruction Codes-Computer Registers-Computer Instructions-Timing and Control-Instruction Cycle-Memory Reference Instructions-Input-Output Interrupts.

Unit: II **10 Hours**

CPU-General Register Organization-Control Word-Examples of Micro Operations-Stack Organization-Instruction Formats-Addressing Modes-Data Transfer and Manipulation-Program Control-RISC.

Unit: III **10 Hours**

Computer Arithmetic-Addition & Subtraction-Multiplication Algorithm-Division Algorithm-Floating Point Arithmetic Operations-Register Configurations-Addition & Subtractions- Decimal Arithmetic -Decimal Arithmetic Operation.

Unit: IV **12Hours**

I/O Organization- Peripheral devices-I/O Interface- Synchronous and Asynchronous Data Transfer-Modes of Transfer-Priority Interrupt-DMA-IOP

Unit: V **10Hours**

Memory Organization-Memory Hierarchy-Main Memory-Auxillary Memory-Associative Memory-Cache Memory –Virtual Memory- Memory Management Hardware.

TEXT BOOK:

1. Morris Mano,*Computer System Architecture* , Prentice Hall Of India, Third Edition , 1994

BOOKS FOR REFERENCE:

1. David A. Patterson and John L.Hennessy, *Computer Organisation and Design,* Harcourt Asia Pvt Ltd, Second Edition, 1999.
2. William Stallings,*Computer Organization & Architecture* , *Designing for Performance,* Pearson Education, Sixth Edition.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 07	MARKETING AND HR MANAGEMENT	SEMESTER II
Credits: 3		52 Hours

Objective: To create awareness about the comprises marketing management and the principles of Management

Unit: I: **10 Hours**

Marketing Definition: Marketing-Fundamentals of Marketing-Scope of Marketing, Product Definition: Types of Products-Product Life Cycle- Introduction Stage-Growth -Stage-Maturity Stage-Decline Stage-Brand.

Unit: II **10 Hours**

Promotion: Promotion Mix-Factors Influencing Promoting Mix-Advertising- Advantages-Advertisement Copy-Media Selection-Advertising Agencies.

Unit: III **10 Hours**

Nature of Management:Managerial Skills-Management Principles- Leadership: Importance or Functions of Leadership-Trait Theory- Decision Making: Introduction-Concept-Features-Types-Process.

Unit: IV **12 Hours**

Human Resource Philosophy – Changing environments of HRM – Strategic human resource management – Using HRM to attain competitive advantage – Trends in HRM – Organisation of HR departments – Line and staff functions – Role of HR Managers.

Unit: V **10 Hours**

Performance Management System - Definition, Concept and Ethics - Different methods of Performance Appraisal - Rating Errors – Competency Management. Compensation Management-Concepts and Components-Job Evaluation- Incentives and Benefits.

TEXT BOOKS:

1. Phlip Kotler, *Marketing Management,Analysis, Planning, and Control*, Prentice Hall of India,1997
2. Koontz, Heinz Weinrich, *Essential of management* ,Tata McGraw Hill, Fifth Edition, 1990.

BOOKS FOR REFERENCE:

1. S.A.Sherlekar, *Marketing Management*, Himalaya Publishing House Pvt., Ltd., Fourteenth Edition, 2008.

2. S.Kathiresan and Dr. V. Radha, *Marketing*, Prasanna & Co Ltd , Revised Edition, 2006.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC08	**PROGRAMMING LAB – II: C**	**SEMESTER II**
Credits: 2		

1. Write a C program to check to whether the given number is Armstrong number or not.
2. Write a C program to find whether the given number is prime or not.
3. Write a C program to check the greatest among three numbers using the conditional operator.
4. Write a C program to count the number of words, characters and lines in a given text.
5. Write a C program to calculate the NCR value of the given number using functions.
6. Write a C program to sort the numbers in ascending order using arrays.
7. Write a C program to generate the fibonacci series for the given number.
8. Write a C program to calculate the factorial value for the given number using recursion.
9. Write a C program using switch statement for the arithmetic operations.
10. Write a C program to find the roots of Quadratic equation.
11. Write a C program to find the median of n numbers.
12. Write a C program to print the Floyd's triangle.
13. Write a C program to print the following

    1

    0 1

    1 0 1
14. Write a C program to find the reverse of a given number.
15. Write a C program to find the given string is palindrome or not.
16. Write a C program to find the addition of matrix.
17. Write a C program to find the matrix multiplication of the given number.
18. Write a C program to sort the strings in alphabetical order.
19. Write a C program to count the number of vowels in a given string.
20. Write a C program to convert upper case to lower case and lower case to upper case.

21.Write a C program to create a student file.

22.Write a C program to create a railway reservation details with trainno, train name, source, destination, date, class.

23.Write a C program to create a student file with regno,name,mark1,mark2..

24.Write a C program to create an employee file with the fields empno ,empname, basic salary, designation.

25.Write a C program to process a student detail using structures

26.Write a C program to count the number of words, characters and lines in a text.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 09	OBJECT ORIENTED PROGRAMMING WITH C++	SEMESTER III
Credits: 4		52 Hours

Objective: To impart knowledge in object oriented concepts

Unit: I **10 Hours**

Procedure Oriented Programming-Object Oriented Programming Paradigm-Basic Concepts of Object -Oriented Programming-Benefits of OOP-Object Oriented Languages-Applications of OOP-Steps in Object Oriented Analysis- Steps in Object Oriented Design

Unit: II **12 Hours**

Tokens-Keywords-Identifiers and Constants-Data Types-Reference Variables-Operators in C++-Scope Resolution Operator-Member Dereferencing Operator-Memory Management Operators-Manipulators-Type Cast Operators-Expression and their Types-Control Structures

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Unit: III **10 Hours**

Functions: Function Prototype-Call By Reference-Return By Reference-Inline Functions-Default and Constant Arguments-Function Overloading-Friend and Virtual Functions-Classes and Objects.

Unit: IV **10 Hours**

Constructors and Destructors-Operator Overloading-Inheritance-Pointers-Virtual Functions and Polymorphism.

Unit: V **10 Hours**

Managing Console Input/Output operations:C++ Streams-C++ Stream Classes-Formatted and Unformatted I/O Operations-Managing Output Manipulations-Working Files.

TEXT BOOK:

1. E.Balagurusamy, *Object Oriented Programming with C++*, Tata McGraw Hill Publications Ltd, Second Edition, 1999

BOOKS FOR REFERENCE:

1. C.Ravichandran, *Programming in C++*, Tata McGraw Hill Publications, Fourteenth Edition, 2001.
2. K R Venugopal, Rajkumar Buyya, T Ravishankar, *Mastering C++*, Muhammadali Shaduli Publisher,1997

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 10	RDBMS and Visual Basic Programming	SEMESTER III
Credits: 4		52 Hours

Objective: To impart knowledge on the architecture of RDBMS and improve the programming skill through visual basic.

Unit: I **10 Hours**

Introduction to Visual Basic Steps in VB Application Integrated Development Environment (IDE) – Menu Bar – Tools Bar – Project Explorer Window Property Window Form Layout Window Code Window Properties , Methods and Events-Event Driven Programming –Working with Forms- Variables – Scope of Variables- Constants – Data Types – Functions – Procedures – Control Structures – Arrays – User Defined Data Types – Operators- String, Date and Time Function.

Unit: II **10 Hours**

Creating and Using Standard Controls- Text Box, Command Button, Check Box, Combo Box, List Box, Option Box, Timer, Frame, Label, Shape & Line Control, Picture Box, Image Control, Scroll Bar Controls - DB Grids – Dialog Boxes – Control Arrays - Single Document Interface(SDI) – Multiple Document Interface(MDI) – Menus. DAO – RDO-ADO

Unit:III **12 Hours**

Introduction- Database System Applications- Database System Versus File Systems- View of Data- Data Models- Entity-Relationship Model: Basic Concepts- Constraints- Keys- Design Issues- ER Diagram Weak Entity Sets- Extended ER Features- Design of an ER Schema to Tables. Relational Model- Structure of Relational Databases- The Relational Algebra- Extended Relational Algebra Operation

Relational Database Design: First Normal Form- Pitfalls in Relational Database Design- Functional Dependencies- Decomposition- Desirable Properties of Decomposition- BCNF- Third Normal Form- Fourth Normal Form- More Normal Forms.

Unit: IV **10 Hours**

ORACLE: Introduction- CODD's Rule- Tools of ORACLE- Introduction to SQL- Benefits of SQL- Data Types- DDL- DML- DCL- TCL- Data Constraints.

ORACLE SQL Functions- Single Row Functions- Date, Number, Miscellaneous, Conversion, Character Functions- Group Functions- SQL Operators- Arithmetic, Comparison and Logical Operators- Set Operators- Joins- Sub Queries- Views.

Unit: V **10 hours**

PL/SQL Introduction- Advantages of PL/SQL- Architecture of PL/SQL- Introduction to PL/SQL Block- Data Types- Control Structure- Concept Of Error Handling- Cursors Procedures Functions- Triggers- Types of Triggers. SQL * Forms- Basic concepts- Components of ORACLE Form- SQL * Forms System Variables- Creating a Form- Generating and Running a Form- Reports.

TEXT BOOKS:

1. Steven Holzner, *Visual Basic 6 programming black book*, Dreamtech Press, First Edition, 2007.
2. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, *Database System Concepts*, Tata McGraw- Hill, Fourth Edition .
3. Ivan Bayross, *ORACLE- 7 The Complete Reference* , BPB Publications, Revised Edition.

BOOKS FOR REFERENCE:

1. C.J. Date, A. Kannan, S. Swamynathan, *An Introduction to Database* , Pearsons Education , Eighth Edition ,2004.
2. Ivan Bayross, *SQL, PL/SQL-The Programming Language of ORACLE*, BPB Publications, Third Revised Edition.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 11	DATA STRUCTURES AND ALGORITHMS	SEMESTER III
Credits: 4		52 Hours

Objective: To instill knowledge on computer algorithms thereby enable the students to develop efficient program

Unit: I **10 Hours**

Introduction-How to Create Program –How to Analysis Program-Sparse Matrices-Representation of Arrays-Stacks and Queues-Evaluation of Expressions-Multiple Stacks and Queues.

Unit: II **10 Hours**

Linked Lists-Singly Linked Lists-Linked Stacks-and Queues-Polynomial Addition-Doubly Linked Lists and Dynamic Storage Management- Strings

Unit: III **10 Hours**

Trees-Basic Terminology –Binary Trees-Binary Tree Representations-Binary Tree Traversal-More on Binary Trees-Threaded Binary Trees-Counting Binary Trees.

Unit: IV **12 Hours**

Graphs –Terminology and Representation-Traversals Connected Components and Spanning Trees-Shortest Paths-Topological Sorts.

Unit: V **10 Hours**

Internal Sorting: Insertion Sort-Quick Sort-2 Way Merge Sort-Heap Sort-External Sorting**:** Storage Devices-Sorting with Disks-Sorting with Tapes

TEXT BOOK:

1. Elliz Horowitz,Sartaj Sahani, *Fundamentals of Data Structures* , Galgotia Publishers, 1984.

BOOKS FOR REFERENCE:

1. Seymour Lipschutz, *Data Structures*, Mc -Graw- Hill , Indian Adapted Edition, 2006.
2. Jean- Paul Trembly, Paul G.Sorenson, *An Introduction to data structures with application*, Mc -Graw- Hill , Second Edition, 1991.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 12	ACCOUNTING AND FINANCIAL MANAGEMENT	SEMESTER III
Credits: 5		65 Hours

Objective: To provide the basic concepts of accounting management so as to enable the students to carry out the financial management effectively.

Unit: I **13 Hours**

Accounting Concepts – Conventions – Journal – Ledger - Subsidiary books – Trial Balance.

Unit: II **13 Hours**

Depreciation – Meaning – Definition – Straight line method – Written down value method – Annuity method – Preparation of Final Accounts with Standard Adjustments.

Unit: III **13 Hours**

Costing – Meaning – Definition – Elements objectives – Cost Accounting Vs Financial Accounting – Preparation of Cost Sheet – Tenders and Quotations [simple problems only]

Unit: IV **13 Hours**

Fund Flow Statement & Cash Flow Statement [Simple problems only]

Unit: V **13 Hours**

Budgets – Budgetary Control – Objectives – Advantages and Limitations – Preparation of Cash Budget – Flexible Budget – Production Budget – Sales Budget[Simple problems only]

TEXT BOOK:

1. N. Vinayagam, *Introduction to Accountancy,* Eurasia Publishing House(P) Ltd., 2004

BOOK FOR REFERENCE:

1. S.P.Jain & K.L.Narang, *Advanced Accountancy,* Kalyani Publishers, 2008.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC13	**PROGRAMMING LAB –III: C++**	**SEMESTER III**
Credits: 2		

1) Write a program to find the given number is odd or even.
2) Write a program to find the given number is Armstrong or not
3) Write a program to find the given number is prime or not.
4) Write a program to find the factorial of the given number.
5) Write a program to generate Fibonacci series for the given number.
6) Write a program to perform the addition of two matrices.
7) Write a program to find the multiplication of two matrices.
8) Write a program to find the roots of quadratic equation for the given numbers.
9) Write a program for sorting the strings in alphabetical order.
10) Write a program to display the Floyds triangle.
11) Write a program to implement command line arguments.
12) Write a program to implement files (reading and writing the file).
13) Write a program to implement the virtual function.
14) Write a program to implement formatted input output functions.
15) Write a program to implement the stack operations.
16) Write a program to perform arithmetic operation using inline functions.
17) Write a program to sort the given numbers in ascending order.
18) Write a program using the single inheritance concept.
19) Write a program to implement the multilevel inheritance.
20) Write a program to implement the multiple inheritances.
21) Write a program to implement the hybrid inheritance.
22) Write a program using function overloading concept.
23) Write a program to implement operator overloading.
24) Write a program to implement the default arguments.
25) Write a program using friend function.
26) Write a program to implement unformatted input output functions.
27) Write a program to implement the constructors.
28) Write a program to implement the destructors
29) Write a program to implement the virtual base class.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC14	**PROGRAMMING LAB –IV:** **Visual Basic and ORACLE**	**SEMESTER IV**
Credits: 2		

1. Write Oracle Queries in Data Definition Language.
2. Write Oracle Queries in Data Manipulation Language.
3. Write Oracle Queries in Transaction Control Language.
4. Write Oracle Queries in Data Control Language.
5. Write Oracle Queries using Data Constraints.
6. Manipulate Single Row Function.
7. Manipulate Function – Group function.
8. Generate Operators in SQL plus.
9. Manipulate SET Operators.
10. Generate View.
11. Generate Index functions.
12. Generate Join functions.
13. Write PL/SQL to find whether the given number is Even or Odd.
14. Write PL/SQL to find whether the given number is Amstrong or Not.
15. Write PL/SQL to Display ten numbers.
16. Write PL/SQL to reverse of given number.
17. Write PL/SQL to find whether the given number is Prime number or not.
18. Write Oracle Query to Update Trigger.
19. Write PL/SQL to Access Restriction Trigger.
20. Write Oracle Queries to Display Department Name.
21. Develop a VB program to process the Arithmetic Operation.
22. Develop a VB program to generate timer control.
23. Develop a VB program to design a scientific calculator.
24. Develop a VB program for Railway Reservation using menus.
25. Develop a VB program to use MDI Form using menus.
26. Develop a VB program to perform string handling functions.
27. Develop a VB program to perform list box operations.
28. Develop a VB program to illustrate the line event.
29. Develop a VB program to control the working of ADO Control.
30. Develop a VB program to control the working of Common Dialog Control.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBCS A1	**ELECTIVE – I** **SOFTWARE ANALYSIS AND DESIGN**	**SEMESTER III**
Credits: 2		**52 Hours**

Objective: To impart knowledge about the process of analysis, design and object orientation through providing a framework of the activities involved in designing software.

Unit 1: **12 Hours**

Data and Information

Information: - kinds of information-firm-user staff-work flow-origin of information-information gathering tools- review-onsite-observation-interviews and questionairres.

System Analysis and Analyst

System development life cycle:-recognition-feasibility study-analysis-design-implementation-maintenance- Role of systems analyst –qualification-multifaceted role of the analyst- analyst interface:-behavioural issues-conflict resolution.

Unit 2: **10 Hours**

Feasibility Analysis

System performance definition: statement of constraints-identificaiton of specific system objectives-description of outputs-fesibility study-considerations-steps in feasibility analysis-feasibility report-oral presentation.

Unit 3: **10 Hours**

Input output and forms design

Input design-Input data-input media and devices-output design-forms design-classificatinon of forms-requirements of forms design-types of forms-layout considerations-forms control.

Unit 4: **10 Hours**

Object oriented systems modeling

Object oriented concepts-:-classes and objects-attributes-operations-,methods and services-messages-design for object oriented systems:-conventional vs OO approaches – design issues-object design process –design patterns - object oriented testing:-unit-integration-validation testing in th OO context.

Unit 5:

Security system:

Security definition- Threat to system security:- Personal computer and system integrity- Risk analysis –Control measures:-identification – access controls – encryption –audit controls – system integrity- recovery requirements- failures – Disaster planning :- plan – ethics in system development.

TEXT BOOK:

1. Elias M.Award, *System Analysis and Design* , Galgotia Publications (P) Ltd, Second Edition, 1996 .
2. Roger Pressman, *Software Engineering*, A Practioner's Approach, Fourth Edition, 1997.

BOOKS FOR REFERENCE:

1. Sommerville, *Software Engineering*, Pearson education, Sixth Edition.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBCS B1	**ELECTIVE-II** **E-COMMERCE**	**SEMESTER III**
Credits: 2		**52 Hours**

Objective: To enable the students to acquire knowledge on electronic commerece.

Unit: I **10 Hours**

Introduction to E-Commerce-Nature of E-Commerce-Features-Need for E-Commerce-Objectives-Types of E-commerce-Advantages and disadvantages-Framework of E-Commerce.

Unit: II **10 Hours**

E-Commerce and Business-Business Models of E-Commerce-B2B-B2C-B2C-C2B-C2C-B2E-G2B.Business applications of E-Commerce-Mobile Commerce-Applications.

Unit: III **10 Hours**

Electronic Data Interchange-Definitions-Evolution of EDI-Objectives-Advantages-Bottlenecks of EDI-Components of EDI-Electronic Payment Systems.

Unit: IV **11 Hours**

E-Online Banking-Electronic Delivery Channels-ATM-Telebanking-Electronic Money Transfer (EMT)-E Cheque-E-Banking-Components-Advantages and Limitations of Online Banking.

Unit: V **11 Hours**

Security Issues in E-Commerce-Risks involved- E-Commerce security tools-Biometric-Client Server Network Security-Data and Message Security-Legal and Ethical Issues-Cyber Law-Aims-Salient Provisions.

TEXT BOOK:

1. E-Commerce,E-Business-Dr.C.J Rayuda,Himalaya Publishing house,Reprint Editions 2008

BOOKS FOR REFERENCE:

1. E-Commerce,Kamalesh,K.Bajaj and Debjani Nag,TATA MC Grew Hill Publications,New Delhi.

2. Marketing and E-Commerce,Roger Leroy Miller,West Thomson Learning Australia

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 15	OPERATING SYSTEMS WITH LINUX	SEMESTER IV
Credits: 4		

Objective: To provide knowledge about the candidate of the operating system and the functions perform by it.

Unit: I

Introduction to OS – Early History – Hardware: Interrupts and Rooting, Buffering, Storage Protection, Online – Offline Operation-Cycle Stealing- Processing-Storage Hierarchy- Reduced Instruction Set Computing (RISC). Semaphores – Process Synchronization with Semaphores – Counting Semaphores. Storage Management: Real Storage – Storage Organization – Storage Management Storage Hierarchy – Swapping – Virtual Storage – Basic Concepts.

Unit: II

PAGING: Basic Concepts – Segmentation. Dead Lock: Examples – Dead Lock Preventions – Dead Lock Avoidance – Bankers Algorithms Only – Dead Lock Detection – Dead Lock Recovery.

Processor Management: Job and Processor Scheduling – Introduction – Scheduling Levels – Scheduling Objectives – Preemptive Vs Non preemptive Scheduling – Priorities – FIFO Scheduling – Round Robin Scheduling – Quantum Size Shortest Job First Scheduling – Shortest Remaining Time Scheduling – Highest Response Ratio Next Scheduling.

Unit: III

Auxillary Storage Management: Disk Performance Optimization – Why Disk – Scheduling is Necessary – Desirable Characteristics of Disk Scheduling Policies – Seek Optimization – Disk Caching – RAM Disks. FILE Database System: Introduction – The File System – File System Functions – Blocking and Buffering – File Organization – Allocating and Freeing Space – File Description – Access Control Matrix – Access Control by User Classes – Backup Recovery.

Unit: IV

Linux: Introduction – File structure of Linux – Directory hierarchy – Environmental variables –file access permissions –utility commands- files – print – login details. VI-editors - three modes. File splitting – pipes and filters – paginating files – head – tail – grep – process termination – timing process.

Unit: V

Shell Programming: Creation and execution – command line arguments – logical operations – condition statements – System administration – Booting and shutting down – super user status – Disk management – security – user services – mount – unmount- installing and managing printers.

TEXT BOOK:

1. H. M. Deitel, *Operating Systems*, Addison Wesley Publication, Second Edition.
2. Mark.G.Gobell " Red Hat Linux – reference ,manual , Pearson edition, first edtition,2003
3. Sumitabha DAs, "Unix system Concepts and applications" Tata McGraw Hill,1995

BOOKS FOR REFERENCE:

1. Stewart E. Madnick, John J.Donovan, *Operating Systems, ,* Tata McGraw Hill, Sixth Edition, 2008.
2. Williams Stallings, *Operating Systems- Internals and Design Principles*, Prentice hall of India, Fifth Edition, 2005

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 16	WEB DESIGNING	SEMESTER IV
Credits: 4		

Objective: To create familiarity about the internals of internet and the tools used in web designing

Unit-I:

Introduction to Internet – Resources of internet – Hardware and Software requirements of Internet - Internet services-Protocol Concepts – Internet Addressing – IRC.

Unit-II:

Introduction to HTML – functions of html in web publishing – basic Structural elements and their usage – Traditional text and formatting – style sheets formatting – using tables for organizing and layout – forms – frame sets.

Unit-III:

XML - XML Basics - What is XML? - XML Tags and Conventions - More on Elements - XML Schema - XML Attributes - Introduction to DTD - DTD - XML building blocks - Elements - Attributes - Entities.

Unit-IV:

Scripting basics – Client side image maps – Introducing JavaScript – Creating simple Java Scripts – Using JavaScript for forms – Using JavaScript with style sheets.

Unit-V:

Introduction to ASP –Active Server Objects – Active Server Components – Emerging and alternative web technologies – Active X Controls for the WWW.

TEXT BOOK:

1. Harley Hahn, *The Internet Complete Reference,* Tata McGraw-Hill Publishers, Second edition, 1997.

2. Shelly powers et al, “Dynamics web publishing” techmedia, 1998.

3. Scot Johnson, *Using Active Server Pages*, Prentice Hall of India Pvt Ltd, Special Edition, 1997

BOOK FOR REFERENCE:

1. Thomas A.Powell, *HTML- The Complete Reference*, Tata Mc-Graw Hill Edition.1998.

2. Paul Gilster , The Internet Navigator, Wiley & Sons, Second Edition. 1994.

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13 UBC 17	**SOFTWARE INDUSTRY DOMAINS**	**SEMESTER IV**
Credits: 4		

Objective: To make the students familiarize with

- Real time applications in banks and the operations of banks.
- Basic strategies of Insurance and some applications related to that.
- Core concepts of Textile industry & Computer Integrated manufacturing.

Unit: I

Computerization in Banking – Need – Account related functions – ATM Banking – Internet Banking – Security and controls in computerized Banking.

Unit: II

Banking – BFS Standards- Commercial Banking Software Application – Iflex

Unit: III

Application in Insurance – Underwriting, Claims and Transactions

Unit: IV

Computer in Textiles – Fabric Design – Woven, Knitted and Embroidery – Texture mapping – Shop Floor Applications for production, Maintenance and Quality Control.

Unit: V

Computer Integrated Manufacturing – Order processing, Machinery Planning, Manufacturing-Quality Integration, MIS reporting, Online Monitoring in Spinning and Weaving**.**

Websites for Reference:

www.inventors.about.com

www.economywatch.com

www.scribd.com

www.indiantextilejournal.com

www.atmbanking.net

www.apparelsearch.com

www.banknetindia.com

www.itaaonline.org

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBC 18	MATHEMATICS-II COMPUTER BASED OPTIMIZATION TECHNIQUES	SEMESTER IV
Credits: 5		

Objective: To impact knowledge on the ways of determining the optimal usage of resources and thereby increasing the efficiency**.**

Unit: I

Linear Programming Problem: Graphical Solution Method- General Linear Programming Problem (Definition alone) - Canonical and Standard forms of LPP.

Simplex Method: Basic Solution and Degenerate Solutions to Linear Equation- Simplex Method- BigM Method (Only Simple Problems).

Unit: II

Transportation Problem: North West Corner Method- Least Cost Method- Vogle's Approximation Method- Moving towards optimality UV Method.

Assignment Problem: Definition- Assignment Algorithm-Hungarian Assignment Method- Unbalanced AP.

Unit: III

Inventory Control: Introduction- Types of Inventory- Inventory Decision- Economical Order Quantity (EOQ) - Deterministic Inventory Problems.

Unit: IV

Sequencing Problems: Introduction- Problems with n Jobs and 2 Machines- Problems with n Jobs and k Machines- Problems with 2 Jobs and k Machines (Simple Problems).

Unit: V

Network Scheduling: Introduction- Network and Basic Components- Rules of Network Construction- Time calculation in Networks- CPM-PERT-PERT Calculations- Difference between CPM and Pert Network.

TEXT BOOK:

1. Kanti Swarup, P.K.Gupta, Man Mohan *Operations Research,* Sultan Chand & Sons, Seventh Edition, 1996.

BOOK FOR REFERENCE:

1. R. Paneer Selvam, *Operation Research,* Prentice Hall of India Pvt Ltd, Second Edition.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC19	PROGRAMMING LAB V : LINUX PROGRAMMING	SEMESTER IV
Credits: 2		

1. **Work with utility commands.**
2. **Work with directory commands.**
3. **Work with handling file commands.**
4. **Work with file access commands.**
5. **Work with pipes and filters.**
6. **Work with VI editors.**
7. **Create a program to find simple interest**
8. **Create a program to find factorial value**
9. **Create a program to find fibonacci series.**
10. **Create a program to find sum of N numbers.**
11. **Write a program with case condition.**
12. **Create a program to find divisibility of numbers.**
13. **Create a program to find greatest of three numbers.**
14. **Create a program to find Armstrong number.**
15. **Create a program to find prime or not.**
16. **Create a program to find reverse the digit.**
17. **Create a program to find sum of individual digit.**
18. **Create a program to find odd or even.**
19. **Create a program to swap any two numbers.**
20. **Create a program for sorting of N numbers.**

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBC20 **Credits: 2**	**PROGRAMMING LAB- VI: WEB DESIGNING**	**SEMESTER IV**

1. Write a program to create Student timetable
2. Write a program to create External style sheet
3. Write a program to create Embedded style sheet
4. Write a program to create Inline style sheet
5. Write a program to create Horizontal frames
6. Write a program to create Vertical frames
7. Write a program to create Horizontal and vertical frames
8. Write a program to create Frameset
9. Write a program to create I Frame
10. Write a program to create Image positioning
11. Write a program to create Z-Index
12. Write a program to create Webpage
13. Write a program to create Submit and reset button
14. Write a program to create Password control
15. Write a program to create Confirmation dialogue box
16. Write a program to create Date and time
17. Write a program to create Changing the text in status bar
18. Write a program to create Scrolling the text

UG DEPARTMENT OF COMPUTER APPLICATIONS

13 UBCS A2	**ELECTIVE – III** **SOFTWARE ENGINEERING**	**SEMESTER IV**
Credits: 2		

Objective: To impart knowledge about the process of software development through providing a framework of all the activities involved in developing software.

Unit: I

System Concepts and the Information Systems Environment: System Definition-Characteristics of System-Elements of a Systems- Types of System- The System Development Life Cycle: Recognition of Need-Feasibility Study-Analysis-Design-Implementation-Post Implementation and Maintenance-Consideration for Candidate System.

Unit: II

Software-Software Characteristics-Software Components-Software Applications-The Process-Software Engineering a Layered Technology-The Process, Methods, Tools-A Generic View of Software Engineering- The Software Process- Software Process Models-Linear Sequential Models-Prototyping Model-RAD Model-Evolutionary Software Model-The Incremental Model-Spiral Model-Component Assembly Model-Concurrent Model

Unit: III

Analysis Concepts and Principles-Requirement Analysis-Communication Techniques-Iniating the Process-FAST-QFD-Analysis Principles-Information Domain-Modeling-Partioning-Essential and Implementation Views-Software Prototyping-Selecting the Prototyping Approach-Prototyping Methods and Tools-Specification-Specification Principles-Representation-The Software Requirement Specification-Specification Review-Analysis Modeling-Elements of Analysis Model-Data Modeling-Data Objects, Attributes and Relationship Diagram-Function Modeling-Data Flow Diagram, Extensions-Behavioral Modeling.

Unit: IV

Design Concepts and Principles-The Design Process-Design Principles-Design Concepts-Abstraction, Refinement, Modularity, Software Architecture, Control Hierarchy, Structured Partitioning, Software Procedure, Information Hiding-Effective Modular Design-Functional Independence-Cohesion-Coupling-Design Documentation.

Unit: V

Design Method-Data Design-Architectural Design- Architectural Design Process-Transform Mapping-Transaction Mapping- Interface Design -Human Computer Interface Design –Interface Design Models-Task Analysis and Models-Design Issues-Implementation Tools-Design Evaluation-Tabular Design Notation-Program Design Notation-Program Design Languages.

TEXT BOOK:

1. Elias M.Award, *System Analysis and Design* , Galgotia Publications (P) Ltd, Second Edition, 1996 .
2. Roger Pressman, *Software Engineering*, A Practioner's Approach, Fourth Edition, 1997.

BOOKS FOR REFERENCE:

1. Sommerville, *Software Engineering*, Pearson education, Sixth Edition.

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13 UBCS B2 **Credits: 2**	**ELECTIVE – IV** **MULTIMEDIA AND ANIMATION**	**SEMESTER V**

Objective: To learn the basic elements in Multimedia and to implement it in the real time environment.

Unit: I

Introduction : MM presentation and production – Characteristics of MM presentation – h/w and s/w requirements- Uses of MM – Steps for creating MM presentation. Visual display systems: LCD, PDP. Text, Introduction: Types of text – Unicode standard – Font – Insertion of text – Text Compression – File formats.

Unit: II

Image: Image types – Seeing color – Color models – Basic steps for image processing – Scanner – Digital Camera – Specification of Digital Images – Device independent Color Models – Image processing s/w – File formats.

Unit: III

Audio: Acoustics – Fundamental characteristics of sound – Decibel – Audio mixer – Digital audio– Synthesiser – What is MIDI – Sound card. Audio transmission: Digital Data Storage. Audio File Formats: WMA, Real Audio. Software Audio Players: Window Media players, Real players, i- tunes. Audio Recording System: Dolby digital – Dolby stereo – Dolby prologic – Dolby prologic II – Dolby surround. DTS Audio and MM – Audio processing software.

Unit: IV

Video: Analog – Video Camera – Transmission of video signals – Video signal formats – Digital video – Standards – PC video – Video editing – Video editing softwares. Video format – Real video, DIVX.

.

Unit: V

Introduction – Uses of animation – Key frames and tweening – Types of animation – Creating movement – Principles of animation – Techniques of animation – Special effects Rendering Algorithms – Animation Software. 3D Animation - Introduction forms of virtual reality – VR Applications – s/w requirements – Peripheral – Devices – VRML.

TEXT BOOK:

1. Principles of Multimedia – Ranjan Parekh – Tata McGraw-Hill publishing Company Limited New Delhi,2007``

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBCS 02	**PROGRAMMING LAB: DTP PROGRAMMING**	**SEMESTER IV**

1. Design the Wedding Invitation using the associated tools in Photoshop.
2. Apply special art effects for the image using various options from the Filter Gallery.
3. Design the Banner.
4. Implement the Usage of different modes in a Single Image .
5. Design the College Profile .
6. Work with different images to implement Sharpen tool and Smudge Tool
7. Design the Calendar.
8. Edit the image using Blur tool.
9. Design the Visiting Card.
10. Edit the image using Burn and Sponge tool.
11. Edit the image using Clone tool.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC21	PROGRAMMING IN JAVA	SEMESTER V
Credits: 4		

Objective: To impart knowledge on the features and syntax of the programming language, Java in order to improve the programming skill.

Unit: I

Java Evolution – Overview of Java language, Constants, Variables and Data types – Operators and Expressions.

Unit: II

Decision Making and Branching – Decision Making and Looping – Classes, Objects and Methods – Arrays, Strings and Vectors.

Unit: III

Interfaces – Multiple Inheritance – Package: Putting Classes Together Multi-Thread Programming.

Unit: IV

Managing Errors and Exceptions – Applets Programming – Graphics Programming – The Graphics Class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs – Drawing Polygons.

Unit: V

Managing Input /Output Files in Java – Concepts of Streams – Stream Classes – Byte Stream Classes – Stream Classes – Character Stream Classes – Useful I/O Classes – Characters – Reading / Writing Bytes – Handling Primitive Data Types – Concatenating and Buffering Files – Random Access Files.

TEXT BOOK:

1. E.Balagurusamy, *Programming With Java* , Tata McGraw Hill , Second Edition ,2005

BOOKS FOR REFERENCE:

1. ISRD Group, *Introduction to Object Oriented Programming through Java*, Tata Mc-GrawHill Publishing Company Limited, 2007.
2. Patrick Naughton Herbert Schildt Java2, The *Complete Reference*, Tata Mc-Graw Hill, 1999
3. John R. Hubbard, *Schaum's Outline of Programming with Java*, Tata Mc-Graw-Hill Publishing Company Limited, Second Edition, 2007

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBC22	**COMPUTER NETWORKS**	**SEMESTER V**
Credits: 4		

Objective: To learn the basic concepts in networks and to implement it in the real time environment.

Unit: I

Introduction: Uses of Computer Network-Network Hardware: LAN, MAN, WAN, Inter Networks-Network Software: Protocol Hierarchies-Design Issues for the Layers-Interfaces & Services, Connection –Oriented and Connectionless Services – Reference Models: OSI Reference Model.

Unit: II

Data link Layer: Design Issues- Framing- Error Control- Flow Control- Error Detection & Correction – Protocol Specification and Verification: Finite State Machine Model-PetriNet Models.

Unit: III

Network Layer: Routing Algorithms – Optimality Principles – Shortest Path Routing – Congestion Control Algorithm: General Principles of Congestion Control-Congestion Prevention Policies.

Internetworking: How Networks Differ- Concatenated Virtual Circuits-Connectionless Internetworking-Internetwork Routing – Fragmentation.

Unit: IV

Transport Layer: The Transport Service – Services Provided to the Upper Layers- Quality of Service – Transport .Service Primitives. Elements of Transport Protocols: Addressing – Establishing a Connection – Releasing a Connection – Crash Recovery

Unit: V

Application Layer: Electronic Mail: User Agent (Sending and Receiving E-mail)- Message Formats- MIME- Message Transfer – SMTP – E-mail Gateways.WWW: Client side-Server side- HTTP.

TEXT BOOK:

1. Andrew S. Tannenbaum , *Computer Networks* , Prentice Hall of India, Third Edition, 1997

BOOKS FOR REFERENCE:

1. W.Stallings , *Data and Computer Communication*, Prentice Hall of India, Fourth Edition, 1996
2. *F.Halsai Data Communication, Computer Networks and Operating System*, Wesley, Third Edition, 1994

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC23	DOT NET PROGRAMMING	SEMESTER V
Credits: 4		

Objective: To enable the students to learn the various aspects of .NET tools and controls to create windows and web applications

Unit: I

Introduction to .Net: .net framework- difference between VB6 and VB.Net-Object-Oriented programming and VB.Net-Data types-Variables-Operators-Arrays-Conditional logic.

Unit: II

Procedures- Dialog boxes- File IO and System objects- Error handling- Namespaces-Classes and Objects- Multithreading-Message Queue.

Unit: III

VB.Net IDE-Compiling and Debugging-Customizing- Data access: ADO.Net- Visual studio .Net and ADO.Net. Windows Forms: Controls-Specific controls- Irregular forms.

Unit: IV

Vb.Net and web: Introduction to ASP.Net page framework- HTML server controls- Web controls- Validation controls- Events-CSS- State management- Tracing- Security.

Unit: V

Web Services: Introduction- Infrastructure- SOAP-Building web services- Deploying and publishing web services- Finding and consuming web services.

TEXT BOOKS:

Bill Evjen, Jason Beres, et.al, ―Visual Basic .Net programming‖, Wiley Dreamtech India (p) Ltd. ISBN 81-265-0254-1.

BOOKS FOR REFERENCE:

1. Fergal Grimes, ―Microsoft .NET for programmers‖, shroff publishers & distributors (p) Ltd. ISBN 81-7366-540-0.

2. Thuan Thai & Hoang Q.Lam, ―.NET Framework essentials‖, shroff publishers & distributors (p) Ltd. ISBN 81-7366-654-7

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC24	SOFTWARE TESTING	SEMESTER V
Credits: 4		

Objective: To enable the students to learn the various aspects of Software quality assurance, Quality Control Testing in special emphasis to win runner.

Unit: I

Software Quality Assurance (SQA), Quality Control (QC), Comparison between QA & QC. Introduction to Testing, Black Box Testing: Equivalence Partitioning- Boundary Value Analysis-Error Guessing- White Box Testing: Statement Coverage-Decision Coverage-Path Coverage- Test Case- Levels of Testing: Unit Testing-Integration Testing- Sub System Testing-System Testing- Acceptance Testing.

Unit: II

Software Testing Life Cycle-Special Types of Testing: Documentation Testing- Smoke Testing-Sanitary Testing- Compatibility Testing- Usability Testing- Configuration Testing- Disaster Testing-Interoperability Testing- Acceptance Testing- Load Testing-Stress Testing- Recovery Testing-Regression Testing- Security Testing, Client/Server Testing- Web Testing.

Unit: III

Test Plan- Phases of Test Plan-Hierarchy of Test Plan-Hierarchy of Test Document-Test Plan Process-Components of a Test Plan.-Verification and Validation- Audits-Reviews- Software Metrics-Process Metrics- Project Metrics-Product Metrics- Testing Metrics.

Unit: IV

Introduction to Automation Test Tools- Automation Process-Features of Automation Tools: Record and Playback- Integration- Environment Support- Database Test- Data Function- Object Mapping-Image Testing- Object Name-Map-Object Identity Tool- Test/Error Recover-Web Testing- Extensible Language-Mercury Interactive- Quality Standards.

Unit: V

Introduction to WINRUNNER- Two Models for Recording Test: Context Sensitive- Analog Model-Six Main Stages of Testing Process in Win runner- Starting Win runner- Main Win runner-Window- Text Window-User Tool Bar- Executing Commands using Soft Keys- Understanding GUI Map- Viewing GUI Object Properties-Saving the GUI Map.

WEB REFERENCES:

Manual Testing References:

www.softwareqatest.com

www.aptest.com

www.stickyminds.com

www.bettersoftware.com

www.testing.com

www.wikipedia.com

Automation Tools References:

www.aptest.com

www.automatedqa.com

TEXT BOOKS:

Course Material prepared by the Department of Computer Science based on the above web references.

BOOKS FOR REFERENCE:

1. Srinivasan Desikan & Gopalswamy Ramesh, Software Testing, Pearson Edition ,2007.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC25	**PROGRAMMING LAB-VII: JAVA**	**SEMESTER V**
Credits: 2		

1.Write a java program to check the Amstrong number

2. Write a java program to generate fibonacci series

3. Write a java program to print the floyds triangle using for loops.

4. Write a program in java using multiple catch statements.

5. Write a program in java for method overloading to draw circle,triangle,rectangle..

6. Write a java program to sort the given numbers in ascending order.

7. Write a java program to find the prime numbers between 1 to 200.

8. Write a program in java for method overriding.

9. Write a program in java to sort the strings in alphabetical order.

10. Write a java program for employee details using single inheritance concept.

11. Write a java program to check the given string is palindrome or not .

12. Write a program to find the roots of a quadratic equation.

13. Write a java program for multithreading concept.

14.Write a program in java to read and write using random access file.

15. Write a java program to draw lines and rectangles using applets

16. Write a java program to draw ellipses and circles using applets

17. Write a program in java for method overriding.

18.Write a program in java to copy bytes from one file to another.

19. Write a program in java to copy characters from one file to another.

20. Write a program in Java using the concept of interface.

21. Write a program in java to multiply two matrice.

22. Write a program to add two numbers using applets

23 Write a program to reverse a number using applets

24 Write a program in java to find the trace of matrix.

25. Write a program to create two packages and implement it.

26. Write a program for package implementation.

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBC26	**Programming Lab-VIII: DOT NET Programming**	**SEMESTER V**
Credits: 2		

Console Applications

- Create a Program to implement the concepts of Object oriented programming techniques.
- Create a program to implement multiple inheritances using interface.
- Create a program to validate the data members in the class using property
- Create a program to catch the exceptions.
- Create a program to implement multithreading.
- Write a program to implement stack operations using array
- Write a program to implement Queue using array
- Write a program to perform file operations.

Windows Applications

- Create a directory list using tree view control
- Create a calculator using basic controls
- Create a notepad editor using Context menu strip and menu controls
- Create an application to illustrate the use of dialog boxes.
- Create an application for students Proctorial report
- Create an application for library management system
- Create an application for Pay roll processing system
- Create a program To generate electricity Bill

Web Applications

- Create a web page to generate a photo gallery
- Create an application for encryption and decryption
- Create an Alumni registration form
- Create a website for online Quiz
- Create your own portal which describes yourself and your skills.
- Create a portal for online purchasing system.
- Create a portal and validate the web page using validation controls
- Create a web page and validate that page using client side scripting
- Create a crystal report for Alumni registration portal.

Department	UG Department of Computer Applications		
Course	BCA	Effective from the year: 2013-2014	
Subject Code: 13 UBC NA1	Title: GREEN COMPUTING	Semester: III	
Hrs/Week:	1	Credit: 2	
Objectives	To know about the applications and uses of Green Computing.		
Units	Content		Hrs
Unit I	**The Importance of Green IT:** The Growing Significance of Green IT and Green Data Centers - All Companies Can Take Basic Steps Toward Green IT. **The Basics of Green IT:** Important Steps for Green IT - Tools for IT Energy Measurement, Monitoring, and Management.		3
Unit II	**Collaboration Is Key for Green IT :** IT Technology Vendors - Data Center Design and Build Businesses - Collaboration of Building Energy Management and IT Energy Management - IT Vendors and Collaboration - Energy Manager Software - Global Significance of Energy - Efficiency Certificate Program- Al Gore and Green Collaboration.		3
Unit III	**The Role of Electric Utilities:** The Significant Role of Electric Utilities and IT Energy Ratings in Green IT- Energy Utility Rate Case Incentives - Using Utility Rebates to Minimize Energy Costs in the Data Center- Power Company Incentives for Companies to Go Green - Energy - Efficiency Ratings for IT - IT Vendors Help Lead the Charge. **Virtualization.**		2
Unit IV	**Chillers, Cooling Tower Fans and Cooling Equipments:** Starting with the Data Center Cooling Basics - Data Center Stored Energy Including Stored Cooling - Back to the Future - Water- Cooled Servers - Strategies for Increasing Data Center Cooling Efficiency - Fuel Cells for Data Center Electricity - Other Emerging Technologies for Data Centers.		2
Unit V	**Green IT Case Studies:** Energy Utilities - Universities and a Large Company - Worldwide Green IT.		3
	Total Contact Hrs		**13**
Text Books:	1. John Lamb, "The Greening of IT: How Companies Can Make a Difference for the Environment"		

Books for Reference:	1. Jae H. Kim and Myung j. Lee, “Green IT: Technologies and Applications”, Springer, 2011. 2. Marty Poniatowski, “Foundation of Green IT: Consolidation, Virtualization, Efficiency, and ROI in the Data Center”, Prentice Hall, 2009.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC 27	J2EE TECHNOLOGIES	SEMESTER VI
Credits: 4		

Objective: To instill good working knowledge in the advanced concepts of Server side Programming.

Unit: I

A Tour of Swing: JApplet-Icons and Labels-Text Fields-Buttons-The JButton Class-Check Boxes-Radio Button-Combo Boxes-TabbedPane-Scroll Panes-Tree-JMenus

Unit: II

Servlet Overview and Architecture: Movement to Server Side Java-What is Java Servlet-Practical Applications for Java Servlet-Java Servlet Alternatives-Reasons to use Java Servlets-Java Servlet Architecture.

Servlet Basics**:** Life cycle of a Servlet- A Basic Servlet-Basic Servlet Source-Building and Installing the Basic Servlet- The HTML Required to Invoke the Servlet- Dissecting the Basic Servlet.

Unit: III

Servlet chaining**:** What is Servlet Chains-Invoking a Servlet Chain-Servlet Alias-HTTP Request- A Practical Example using Servlet Chaining

Servlets and JDBC**:** What is JDBC-Two and Three Tier Database Access Models- JDBC Driver Types-JDBC Basics- A Basic JDBC Servlet.

Unit: IV

JSP**:** What are JSP-User Defined Java Beans- Implicit Java Beans-Conditions-Directives-Declarations-Implicit Variables-Scriptlets-Expressions.

Unit : V

Java Beans**:** What is Java Beans- Advantages of Java Beans-Application Builder Tools-The Bean Development Kit(BDK)-JAR files-Introspection-Developing a Simple Bean-Using Bound Properties-Using the Bean Info Interface-Constrained Properties-Persistence-Customizers-The Java Beans API's.

TEXT BOOK:

1. Herbert Schildt, *The Complete Reference*, Tata McGraw-Hill, Fifth Edition, 2002
2. James Goodwill, *Developing Java Servlet*, Techmedia, First Edition, 1999

BOOKS FOR REFERENCE:

1. James Keogh, Jim Keogh, *J2EE: The Complete Reference*, McGraw-Hill/Osborne, Seventh Edition ,2002.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC 28	CLOUD COMPUTING	SEMESTER VI
Credits: 4		

Objective: To impart knowledge in cloud computing concepts

Unit: I

Cloud Computing Basics: Cloud Computing Overview-Cloud Components-Infrastructure-Services-Applications-Storage-Database Services-Intranets and the cloud-Components – Hypervisor Applications. First Movers in the Cloud: Amazon- Google-Microsoft.

Unit: II

Organization and Cloud Computing-Benefits-Limitations of Cloud Computing- Security Concerns-Privacy concerns with a third party-Security Benefits.

.**Unit: III**

Cloud Computing Technology: Hardware and Infrastructure-Clients-Security-Network-Services

Accessing the cloud-Platforms-Web APIs-Web Browsers

Cloud Storage-Overview-Cloud Storage Providers-Standards.

Unit: IV

Cloud Computing with the Titans: Google-Google App Engine-Google Web tool kit-EMC Technologies-VMware Acquisition-Microsoft-Azure Services Platform-Windows live-Exchange online-Sharepoint Services-Microsoft Dynamics CRM-Amazon-Amazon Elastic Compute Cloud-Amazon Simple Storage Service- Amazon Simple Queue Service -Salesforce.com-IBM.

Unit: V

Security Concerns in Cloud Computing-Threats in Cloud Computing.

TEXT BOOK:

1. Cloud Computing-A Practical Approach." *Anthony T.Velte, Toby J.Velte, Robert Elsenpeter",*Mc Graw Hill Publications,2010.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC 29	DATA MINING AND DATA WAREHOUSING	SEMESTER VI
Credits: 4		

Objective: To know about the features and applications of data mining

Unit: I

Introduction to Data Mining: Definition-Information as a Production Factor- Data Mining Vs Query Tools-Data Mining in Marketing-Practical Applications of Data Mining- Learning, Self-Learning, Computer Systems, Machine Learning and Methodologies of Science- Concept Learning-Issues of Learning Algorithm.

Unit:II

Data Mining and Data Warehousing: Data Warehouse-Need-Designing Decision Support Systems-Integration with Data Mining-Client Server and Data Warehousing- Multiprocessing Machines- Cost Justification.

Unit:III

Knowledge Discovery Process: Data Selection-Cleaning-Enrichment-Coding-Data Mining-Preliminary Analysis of Data Set Using Relational Query Tools-Visualization Techniques-Likelyhood and Distance-OLAP Tools-K-Nearest Neighbour-Decision Trees-Association Rules-Neural Networks-Genetic Algorithms-Reporting.

Unit:IV

Setting Up KDD Environment: Introduction-Different forms of Knowledge-Getting Started-Data Selection-Cleaning-Enrichment-Coding-Reporting-10 Golden Rules.

Unit:V

Some Formal aspects of Learning: Learning of Comprehension of Data Sets-Contents of a Message-Noise and Redundancy-Significance of Noise-Fuzzy Database-Traditional Theory of Relational Database from Relations of Tables- From Keys of Statistical Dependencies- Denormalization- Data Mining Primitives.

TEXT BOOK:

1. Peter Andriaans Dolf Zantinge, *Data Mining,*Addison Wesley Publications, Second Edition, 2000

BOOKS FOR REFERENCE:

1. Ian H. Witten & Edile Frank, *Data Mining- Practical Machine Learning Tools & Techniques*, Second Edition.2005.
2. Daniel T. Larose, *Data Mining Methods and Models*, John Weiley & Sons, Student Edition, 2006.

UG DEPARTMENT OF COMPUTER APPLICATIONS

13UBC30	ORGANIZATIONAL BEHAVIOUR	SEMESTER VI
Credits: 4		

Objectives:

1. To develop the knowledge in personality, perception, attitudes and motivation.
2. To learn about stress management, communication, leadership, organization structure and organization culture.

Unit: I

Introduction: Elements of OB – Nature and Scope of OB - Contributing Disciplines to OB. Organisational Behaviour in Historical Perspective - Foundations of Individual Behaviour: Introduction – The Individual and Individual Differences – Human Behaviour and its Causation.

Unit:II

Personality – Perception - Attitudes: Concept of Attitudes – Formation of Attitudes – Types of Attitudes – Measurement of Attitude – Change of Attitude. Values: Concept of Value – Types of Values – Formation of Values – Values and Behaviour. Job Satisfaction.

Unit:III

Learning: Meaning and Definition – Determinants of Learning – Learning Theories – Learning Principles – Reinforcement – Punishment – Learning and Behaviour. Motivation: Concepts – Meaning of Motivation – Nature of Motivation – Motivation Cycle or Process – Need for Motivation – Theories of Motivation – Motivation and morale. Group Behaviour.

Unit:IV

Organisational Conflicts: Definition of Conflict – Sources of Conflict – Types of Conflicts – Aspects of Conflicts – Functional Conflict – Dysfunctional Conflict – Conflict Process – Conflict Management. Job Frustration - Stress Management.

Unit:V

Communication: Nature and Need for Communication – Communication Process –Communication Channel – Communication Networks –Communication Barriers – Effective Communication. Leadership - Organisational Structure - Organisational Culture.

TEXT BOOK:

1. 1. S.S Khanka, *"**Organizational Behaviour**",* S.Chand & Company Ltd, 2002.

BOOKS FOR REFERENCE:

1. John W Newstorm and Keith Davis – *"Organizational Behaviour"* – TMH, 2001.
2. Hugh J Arnold and Daniel C Fieldman – *"Organizational Behaviour"* – MC Graw Hill, 1996.

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBC31	**PROGRAMMING LAB –IX: J2EE TECHNOLOGIES**	**SEMESTER VI**
Credits: 2		

1.Write a program to implement the concept of JTextField.

2. Write a program to implement the concept of JLabel.

3. Write a program to implement the concept of JCheckBox.

4. Write a program to implement the concept of JRadioButton.

5. Write a program to implement the concept of JcomboBox.

6. Write a program to implement the concept of JMenu, JMenuBar.JMenuItem.

7. Write a program to implement the concept of JTabbedPane.

8. Write a program to implement the concept of JTree.

9. Write a program to make use of Generic Servlet.

10. Write a program to find the request method that is fetched using Servlet.

11. Write a program to develop simple servlet using Generic servlet.

12. Write a program to display the employee details using servlets.

13. Write a program to illustrate servlet chaining.

14. Write a program to develop simple servlet using HTTP tags.

15. Write a program to develop simple servlet to count the number of times an applet being accessed.

16. Write a program to implement the concept of JDBC-ODBC Connectivity.

17. Write a program to to count the number of times an JSP is accessed.

18. Write a program to generate Fibonacci series using JSP.

19. Write a program to create java beans to make use of juggler beans.

20. Write a program to create java beans to make use of molecular beans.

21. Write a program to create java beans to make use of sorter beans.

22. Write a program to implement the concept of simple property

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBC32	**PROGRAMMING LAB –X: GRAPHICS AND MULTIMEDIA**	**SEMESTER VI**
Credits: 2		

PHOTOSHOP

1. Designing a Visiting card using needed tools in Photoshop
2. Designing an Invitation card using needed tools in Photoshop
3. Creating a Magic light effect using needed tools, filters, and effects.
4. Converting a damaged skin of a girl to a beautiful skin using needed tools and effects in Photoshop
5. Converting a black and white image to new coloured image
6. Creating a Wallpaper using all the tools, filters, styles, and effects

FLASH

7. Setting motion for a butterfly
8. Digital clock
9. Rain effect
10. Create a solar eclipse using masking and motion effect
11. Creating a Race of Tortoise and Rabbit

GRPAHICS UNING C

12. Project an image in 3d using C
13. Adjust the RGB values of an image with key control
14. Demonstrate Bresenhan’s line drawing algorithm.
15. Create a game using key control

UG DEPARTMENT OF COMPUTER APPLICATIONS		
13UBCS 02	**PROGRAMMING LAB: DTP PROGRAMMING**	**SEMESTER VI**

1. Design the Wedding Invitation using the associated tools in Photoshop.
2. Apply special art effects for the image using various options from the Filter Gallery.
3. Design the Banner.
4. Implement the Usage of different modes in a Single Image .
5. Design the College Profile .
6. Work with different images to implement Sharpen tool and Smudge Tool
7. Design the Calendar.
8. Edit the image using Blur tool.
9. Design the Visiting Card.
10. Edit the image using Burn and Sponge tool.
11. Edit the image using Clone tool.

Help Center. less. Nallamuthu Gounder Mahalingam College. Department of Computer Science. All Departments. 4 Documents.Â An Analysis on Edge Detection Algorithms based on Processing Time. Image segmentation and pattern recognition is the important process in the digital image processing. Thus, edge detection makes these jobs easier and aids for object recognition. The dominant operators are Canny, Laplacian of Gaussian more. Image segmentation and pattern recognition is the important process in the digital image processing. Thus, edge detection makes these jobs easier and aids for object recognition. The dominant operators are Canny, Laplacian of Gaussian (LoG), prewitt, Robert's and Sobel. Each algorith