NALLAMUTHU GOUNDER MAHALINGAM COLLEGE
(AUTONOMOUS)
DEPARTMENT OF INFORMATION TECHNOLOGY
UNDER CBCS PATTERN GUIDED BY UNIVERSITY AND TANSCHE
(FOR THE STUDENTS ADMITTED FROM THE ACADEMIC YEAR 2013-2014 ONWARDS)

S. No.	PART	SUBJECT CODE	SUBJECT TITLE	HRS. WEEK	CREDIT	Ex.Hr	MAX MARKS INT	EXT	TOTAL
SEMESTER I									
1	I	12UTL01 / 12UHN01	TAMIL - I / HINDI - I	6	3	3	25	75	100
2	II	12UEN01	ENGLISH - I	5	3	3	25	75	100
3	III	13UIT01	CORE - 1 'C' PROGRAMMING	4	4	3	25	75	100
4	III	13UIT02	CORE - 2 COMPUTER ORGANIZATION AND ARCHITECTURE	5	4	3	25	75	100
5	III	13UIT03	ALLIED 1-COMPUTER ORIENTED NUMERICAL & STATISTICAL METHODS	4	5	3	25	75	100
6	III	13UIT04	CORE Lab. - I ('C')	4	2	3	20	30	50
7	IV		ENVIRONMENTAL STUDIES	1					
8	IV	09HEC01	HUMAN EXCELLENCE COURSE	1		3		75	75
	V		EXTENSION ACTIVITIES (NSS, NCC, AND SPORTS & GAMES)	Grading Only					
		TOTAL		30	21				625
SEMESTER II									
9	I	12UTL02 / 12UHN02	TAMIL - II / HINDI - II	6	3	3	25	75	100
10	II	12UEN02	ENGLISH - II	5	3	3	25	75	100
11	III	13UIT05	CORE - 3 OBJECT ORIENTED PROGRAMMING WITH "C++"	4	4	3	25	75	100
12	III	13UIT06	CORE - 4 DATA STRUCTURES	4	4	3	25	75	100
13	III	13UIT07	ALLIED 2 - MATHEMATICAL FOUNDATIONS FOR COMPUTER SCIENCE	4	5	3	25	75	100
14	III	13UIT08	CORE Lab. - II ("C++ Using Data Structures")	4	2	3	20	30	50
15	IV	08EVS01	ENVIRONMENTAL STUDIES	1	2	3		100	100
16	IV	09HEC02	HUMAN EXCELLENCE COURSE	1		3		75	75
17	IV	09HECP01	HUMAN EXCELLENCE COURSE (PRACTICALS)		2		50		50
18	IV	08SBP01	HUMAN RIGHTS	1	2	3		100	100
	V		EXTENSION ACTIVITIES (NSS, NCC, AND SPORTS & GAMES)	Grading Only					
		TOTAL		30	27				875
SEMESTER III									
19	III	13UIT09	CORE- 5 OPERATING SYSTEMS	5	4	3	25	75	100
20	III	13UIT10	CORE- 6 RELATIONAL DATABASE MANAGEMENT SYSTEM	5	4	3	25	75	100
21	III	13UIT11	CORE- 7 VISUAL PROGRAMMING	5	4	3	25	75	100
22	III	13UIT12	ALLIED 3-MODERN SYSTEM ANALYSIS AND DESIGN	6	4	3	25	75	100
23	III	13UIT13	CORE Lab. - III ("ORACLE & VB")	6	2	3	20	30	50
24	III	13UITSA1/B1	SKILL BASED ELECTIVE - I ("HTML & DHTML LAB.")	2	2	3		50	50
25	III	09HEC03	HUMAN EXCELLENCE COURSE	1		3		75	75
	V		EXTENSION ACTIVITIES (NSS, NCC, AND SPORTS & GAMES)	---					
		TOTAL		30	20				575
SEMESTER IV									
26	III	13UIT14	CORE- 8 NETWORKS	5	4	3	25	75	100
27	III	13UIT15	CORE- 9 JAVA PROGRAMMING	5	4	3	25	75	100
28	III	13UIT16	CORE- 10 SOFTWARE ENGINEERING	4	4	3	25	75	100
29	III	13UIT17	ALLIED 4 - MICROPROCESSOR AND ALP	5	5	3	25	75	100
30	III	13UIT18	CORE Lab. - IV ("JAVA PROGRAMMING")	4	2	3	20	30	50
31	III	13UIT19	CORE Lab. - V ("SOFTWARE TESTING TOOLS")	4	2	3	20	30	50
32	III	13UITSA2/B2	SKILL BASED ELECTIVE - II ("ASP & PHP LAB.")	2	2	3		50	50
33	III	09HEC04	HUMAN EXCELLENCE COURSE	1		3		75	75
34	III	09HECP02	HUMAN EXCELLENCE COURSE (PRACTICALS)		2		50		50
35	V		EXTENSION ACTIVITIES (NSS, NCC, AND SPORTS & GAMES)		1	Grading Only			
		TOTAL		30	26				675

SEMESTER V									
36	**III**	**13UIT20**	**CORE- 11 LINUX PROGRAMMING**	**6**	**4**	**3**	**25**	**75**	**100**
37		**13UIT21**	**CORE- 12 C# & . NET PROGRAMMING**	**6**	**4**	**3**	**25**	**75**	**100**
38		**13UIT22**	**MAJOR ELECTIVE PAPER - I**	**6**	**5**	**3**	**25**	**75**	**100**
39		**13UIT23**	**CORE Lab. - VI ("C# & . NET PROGRAMMING")**	**5**	**2**	**3**	**20**	**30**	**50**
40		**13UIT24**	**CORE Lab. - VII ("LINUX PROGRAMMING")**	**5**	**3**	**3**	**20**	**30**	**50**
41		**SS**	**GENERAL KNOWLEDGE & GENERAL AWARENESS**	**SS**	**2**	**3**		**100**	**100**
42	**IV**	**13UITSA3/B3**	**SKILL BASED ELECTIVE - III (Non-Major)**	**1**	**2**	**3**		**50**	**50**
43		**09HEC05**	**HUMAN EXCELLENCE COURSE**	**1**		**3**		**75**	**75**
		TOTAL		**30**	**22**				**625**
SEMESTER VI									
44	**III**	**13UIT25**	**CORE- 13 COMPUTER GRAPHICS**	**6**	**4**	**3**	**25**	**75**	**100**
45		**13UIT26**	**MAJOR ELECTIVE PAPER - II**	**6**	**5**	**3**	**25**	**75**	**100**
46		**13UIT27**	**MAJOR ELECTIVE PAPER - III**	**6**	**5**	**3**	**25**	**75**	**100**
47		**13UIT28**	**CORE Lab. VIII - ("GRAPHICS & MULTIMEDIA ")**	**5**	**3**	**3**	**20**	**30**	**50**
48		**13UIT29**	**CORE Lab. IX - ("INDUSTRIAL ORIENTED PRACTICAL")**	**5**	**3**	**3**		**50**	**50**
49	**IV**	**13UITSA4/B4**	**SKILL BASED ELECTIVE - IV (Non-Major)**	**1**	**2**	**3**		**50**	**50**
50		**09HEC06**	**HUMAN EXCELLENCE COURSE**	**1**		**3**		**75**	**75**
51		**09HECP03**	**HUMAN EXCELLENCE COURSE (PRACTICALS)**		**2**		**50**		**50**
		TOTAL		**30**	**24**				**575**
TOTAL				**180**	**140**				**3950**

* SS - Self Study

List of Major Elective papers V & VI Semesters only (can choose any one of the paper)

Elective I	A. Multimedia Techniques B. Advanced Computer Networks C. Embedded Systems
Elective II	A. Software Project Management B. Mobile Computing C. Digital Image Processing
Elective III	A. Data Mining B. Grid & Cloud Computing C. Artificial Intelligence

List of Skill Based Elective papers III, IV, V & VI Semesters only (can choose any one of the paper)

Elective I	A. HTML & DHTML Lab. ** B. XML & JSP Lab.
Elective II	A. ASP & PHP Lab. ** B. VB Script & Java Script Lab.
Elective III	A. Computer Fundamentals B. Internet Basics **
Elective IV	A. Information Security B. Hardware & Networking **

** These subjects are elected for the Semesters III, IV, V & VI

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT01	Title: 'C' PROGRAMMING	Semester: I	
Hrs/Week:	4	Credit: 4	
Objectives	On successful completion of this subject the students should have :- - Writing programming ability on Logic development, clear view on control structures, Pointers (memory management), file handling, etc.,		

Units	Content	Hrs
Unit I	Programming development methodologies - Programming style – **Problem solving techniques:** Algorithm, Flowchart, Pseudo code. Structure of a C program – C character set - Delimiters – Keywords – Identifiers – Constants – Variables – Rules for defining variables – Data types – Declaring and initializing variables – Type conversion. Operators and Expressions.	12
Unit II	**Formatted and Unformatted I/O functions. Decision statements:** If, If...Else, Nested If. Else, Break, Continue, Go to, Switch, Nested switch...case, switch...case and nested ifs statements. **Loop control statements:** For, Nested for, While, Do...while and with while loops.	10
Unit III	**Arrays**: Initialization, definition, characteristics, One dimensional, predefined streams, two dimensional, three or multi dimensional arrays – sscanf (), sprintf (). **String**s: Declaration and initialization, displaying, standard functions and applications. **Pointers:** Futures, Declarations, arithmetic operations, pointers and arrays, two dimensional arrays, array of pointers, pointers to pointers, pointers and strings, void pointers.	10
Unit IV	**Functions**: Definition, declaration, return statements, types, call by value and reference, returning more multiple values, function as an argument, function with arrays and pointers. **Structure and Union:** Features of structure, Declaration and initialization of structure, Structure within structure, Array of structure, Pointer to structure, structure and functions, typedef, Bit fields, Enumerated data types, Union, union of structures.	10
Unit V	**Files:** Streams and file types, Steps for file operation, File I/O, Structures read and write, Other file functions, searching errors in reading or writing files, low level disk I/O, Command line arguments, I/O redirection. **Preprocessor directives:** #define, #include, #ifndef, #error, #line, #pragma, and Predefined macros.	10
	Total Contact Hrs	52
Text Books:	1. Ashok .N. Kamthane. (2004). *PROGRAMMING AND DATA STRUCTURES*. First Indian Print. Pearson Education: ISBN 81-297-0327-0.	
Reference Books:	1. Balagurusamy. E. (1998). *Programming in ANSI C*. Tata McGraw-Hill. 2. Pradip Dey, Manas Ghosh. (2008). *Computer Fundamentals and Programming in c.* Oxford.	

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R. Sekar				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT02	Title: Computer Organization and Architecture	Semester: I	
Hrs/Week:	5	Credit: 4	
Objectives	On successful completion of this subject the students should have:- - Number systems and binary codes, logic circuits, CPU organization, Input-output organization, Memory organization.etc.,		

Unit	Content	Hrs
Unit I	**Number System and Binary Codes**: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. **Arithmetic Circuits:** Half adder, Full adder, Parallel binary adder, BCD adder, Half Subtractor, Full Subtractor, Parallel binary Subtractor - Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.	13
Unit II	**Combinational Logic Circuits:** Boolean algebra –Karnaugh map – Canonical form1 – Construction and properties – Implicants – Don't care combinations - Product of sum, Sum of products, simplifications. **Sequential circuits:** Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder Encoder - Counters	13
Unit III	**Central Processing Unit:** General Register Organization - Control word – Examples of Micro operations - Stack organization - Instruction formats – Addressing modes - Data Transfer and manipulation program control.	12
Unit IV	**Input – Output Organization:** Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O interface. **Asynchronous data transfer:** Strobe Control and Handshaking – Priority Interrupt: Daisy- Chaining Priority, Parallel Priority Interrupt. **Direct Memory Access:** DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.	13
Unit V	**Memory Organization:** Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.	14
	Total Contact Hrs	**65**
Text Books:	1. V.K. PURI. (1997). *Digital Electronics Circuits and Systems*. TATA McGraw-HILL Pub. Company 2. M. MORRIS MANO. (2008). *Computer System Architecture.* 3rd Edition .PHI	
Reference Books:	1. ISRD group – Tata McGraw-Hill. 2. Thomas C.Bartee. (1985), *Digital computer fundamentals*. 6th Edition. McGraw-HILL Pub.	

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R. Sekar				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UIT03	**Title:** Computer Oriented Numerical and Statistical Methods (Allied 1)	**Semester:** I	
Hrs/Week:	4	**Credit:**	5
Objectives	On successful completion of this subject the students should have:- Understanding various concepts of numerical analysis like Algebraic and Transcendental equations, Numeric Differentiation, Interpolation. Learning various applications of statistical methods like correlation and regression for Computer Science.		
Units	**Content**		**Hrs**
Unit I	**The Solution of Numerical Algebraic & Transcendental Equations:** Bisection method – Newton - Raphson method - The method of false position. **The Solution of Simultaneous Linear Algebraic Equation**: Gauss Elimination method – Gauss Jordon Elimination method – Gauss Seidal method of iteration – Gauss Jacobi method.		10
Unit II	**Numerical Differentiation:** Newton's Forward Difference formula - Newton's backward difference formula – numerical Integration – Trapezoidal rule - Simpson's One-third rule – Simpson's three-eighths rule.		9
Unit III	**Interpolation**: Newton forward interpolation formula – Newton backward Interpolation formula. **Newton's divided difference method:** LaGrange's formula – **Numerical solution of ordinary differential Equations**: Taylor method (Type I only) – Euler method (Ordinary method only) – Range-Kutta method.		11
Unit IV	**Measures of central tendency:** Mean, Median and mode – Relation between mean, median and mode. Dispersion – Range – Quartile Deviation - Mean deviation & standard deviation.		12
Unit V	**Correlation:** Karl Pearson`s Coefficient of Correlation – Rank correlation**. Regression:** Regression Equations - Difference between correlation & Regression.		10
	Total Contact Hrs		**52**
Text Books:	1. Kandasamy. P. Thilagavathi. K. Gunavathi. K**.** (2005). *NUMERICAL METHODS*. Revised Edition: S. Chand & company Ltd. New Delhi (UNIT I, II & III). 2. Pillai R. S. N. Bagavathi V. (2005). *STATISTICAL METHODS***.** Sultan Chand and Sons & Company Ltd. New Delhi. (UNIT IV & V)		
Reference Books:	1. Rajaraman. V. (2008). *Computer Oriented Numerical Methods*. Third edition.PHI Pub. 2. Balagurusamy. E. (2008). *Numerical Methods*. Tata McGraw Hill Pub. 3. Gupta. S.C. Kapoor. V.K. *Fundamental Of Mathematical Statistics*.11th edition. S.Chand and Sons.		

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K. Vijayakumar				
B. Kalaiselvi				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT04	Title: Core Lab- I ('C')	Semester: I	
Hrs/Week:	4	Credit:	2
Objectives	On successful completion of this Lab. students should have: - Understanding, Learning and Applying the various Programming concepts of C. - Improving the Programming skills in C.		
	Content		Hrs
	SAMPLE PROGRAM LIST **Pre model** 1. Create a C program to find the Greatest of three numbers 2. Create a C program to display the Fibonacci series 3. Create a C program to generate the Armstrong number 4. Create a C program to generate the Prime number 5. Create a C program to calculate the Sum of individual digits 6. Create a C program to calculate Sum of n numbers 7. Create a C program to arrange the no.'s in Ascending order & Descending order 8. Create a C program to display the Alphabetic order 9. Create a C program to check the Palindrome 10. Create a C program to calculate the Mean, median & mode **Model** 11. Create a C program to calculate the Standard deviation & variance 12. Create a C program to calculate the Rank correlation 13. Create a C program to calculate the Matrix addition 14. Create a C program to calculate the Matrix multiplication 15. Create a C program to calculate the Transpose of a Matrix 16. Create a C program using structures 17. Create a C program using Pointers 18. Create a C program to find the nCr using functions 19. Create an Employee file program using the sequential File operations 20. Create a C program to find the Vowel count in a text file		**52**

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R. Sekar				
K. Vijayakumar				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT05	Title: Object oriented programming with C++	Semester: II	
Hrs/Week:	4	Credit:	4
Objectives	On successful completion of this subject the students should have Evolution of C++, Functions in C++, key concepts of Object-Oriented Programming, pointers and files.		

Units	Contents	Hrs
Unit I	**Evolution of C++**: Object Oriented Technology-Disadvantages of conventional programming-programming paradigm-key concepts of Object-Oriented Programming – Advantages – Object Oriented Languages –usages of OOP- I/O in C++ - C++ Declarations.	10
Unit II	**Functions in C++** -Default Arguments- Inline functions – Function Overloading **-** principles of function overloading-precautions-Library function. **Classes and Objects**: Classes in C++-Declaring Objects –Public, private, protected- Defining Member Functions –Characteristics of member function-Data hiding or Encapsulation- Static Member variables and functions –static objects- array of objects – friend functions – Overloading member functions – Bit fields and classes.	10
Unit III	**Constructor and destructor**: constructor with Arguments-Overloading constructors-constructor with Default Arguments-copy constructor-Destructor-Calling constructor and destructor-Dynamic Initialization using constructor-Constructor and Destructor with static members. **Operator Overloading**: Overloading unary operators –Operator Return type-Overloading Binary Operators-Overloading with Friend functions –Rules for Overloading.	10
Unit IV	**Inheritance:** Types of Inheritance — Virtual base Classes – Abstract Classes-Advantages and Disadvantages of Inheritance. **Pointers:** Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes–new and delete operators – dynamic object **Binding, Polymorphism and Virtual Functions**: Binding in C++ - Virtual functions-Rules-Array of pointers-pure virtual function-Abstract classes-Working of virtual functions-Virtual function in Derived classes.	12
Unit V	**Files:** Application with Files. **Templates**: Need of Template-Definition of class Template-Normal functions Template-Working of function Template-Difference between Template and Macro- Exception Handling –Principles-Keywords-Mechanism.	10
	Total Contact Hrs	52
Text Books:	1. Ashok. N. Kamthane.(2003). *Object-Oriented Programming with ANSI and Turbo C++*. Pearson Education publication.	
Reference Books:	1. Balagurusamy. (1998).E. *Object-Oriented Programming with C++*. Tata Mc-Graw Hill Publications. 2. Bhushan Trivedi. (2000). *Programming with ANSI C++*. Oxford university Press.	

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R. Sekar				
B. Kalaiselvi				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT06	**Title:** Data structures	**Semester:** II	
Hrs/Week:	4	Credit:	4
Objectives	On successful completion of this subject the students should have Linear data structures, Queues, Linked list, Non linear data structures, searching and sorting, File organizations.		

Units	Content	Hrs
Unit I	**Linear data structures:** Introduction to data structures – **List**: Implementations, Traversal, Searching and retrieving an element, Predecessor and Successor, Insertion, Deletion, Sorting, Merging. **Stack**: Representation, Terms, Operations on stack, Implementation.	11
Unit II	**Queues:** Various positions of queue, Representation of Queue. **Linked List:** Single linked list, Linked Queues: Various positions of queue, Representation list with and without header, Insertion, Deletion, Double linked list and applications.	10
Unit III	**Non linear data structures: Trees – Binary trees:** Types, Traversing, Searching, Insertion and deletion operations, Hashing technology.	10
Unit IV	**Searching and Sorting**: **Searching**: Linear, Binary, Indexed Sequential. **Sorting**: Insertion, Selection, Bubble, Quick, Tree, Heap, Shell and Radix.	10
Unit V	**Files:** Queries and sequential organizations – Indexing techniques – File Organization and storage management.	11
	Total Contact Hrs	52
Text Books:	1. Ashok. N. Kamthane. (2004). *PROGRAMMING AND DATA STRUCTURES*. First Indian print. Pearson Education. ISBN 81-297-0327-0. (I - IV Units) 2. Ellis Horowitz and Sartaj Sahni. (1999). *Fundamentals of Data Structure*. Galgotia Book Source.(V Unit)	
Reference Books:	1. Aaron .M. Tanenbaum, Yedidyeh Langsam, Moshe .J. Augenstein. (2007). *Data structure using C*. Third edition.PHI Pub. 2. ISRD group. *Data structure using C*. Tata McGraw-Hill.	

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C.R. Durga Devi				
K. Vijayakumar				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT07	Title: Mathematical Foundations for Computer Science. (Allied 2).	Semester: II	
Hrs/Week:	4	Credit: 5	
Objectives	On successful completion of this subject the students should have Matrices, Set theory. Mathematical logic, Relations and Graph theory.		
Unit	Content		Hrs
Unit I	**Matrices**: Introduction –Definition - Determination – Types of Matrices- Multiplication, Transpose of a matrix - Inverse of a matrix –Definition, Examples – Rank of a Matrix.		10
Unit II	**Set theory**: Introduction-Set & its Elements-Set Description-Types of sets-Venn-Euler Diagrams- Set operations & Laws of set theory-Fundamental products-partitions of sets-min sets-Algebra of sets and Duality-Inclusion and Exclusion principle		10
Unit III	**Mathematical logic**: Introduction - Propositional Logic –Introduction, Proofs – Basic logical operations – Tautologies – Contradiction - Predicate calculus.		10
Unit IV	**Relations**: Binary Relations – Set operation on relations-Types of Relations – Partial order relation – Equivalence relation – Composition of relations – Functions – Types of functions – Invertible functions – Composition of functions.		10
Unit V	**Graph Theory**: Basic terminology – paths, cycle & Connectivity – Sub graphs – Types of graphs – Representation of graphs in computer memory - Trees – Properties of trees – Binary trees – traversing Binary trees – Computer Representation of general trees.		12
	Total Contact Hrs		52
Text Books:	1. Dr. Venkataraman. M. K.(1998).*Engineering Mathematics*. Third edition. Volume II: NPC. (Unit I) 2. Sharma. J.K. (2005).*Discrete Mathematics*. Second Edition. Macmillan India Ltd (Rest of Units).		
Reference Books:	1. Tremblay. J .P. Manohar. R. (1987).*Discrete Mathematics Structures with Applications to computer science*. Mc Graw Hill International Edition. 2. Dr. Venkataraman. M. K. Dr. Sridharan. N, Chandarasekaran. N. (2000). *Discrete Mathematics*. The National publishing Company Chennai.		

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B. Kalaiselvi				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT08	Title: Core Lab.- II ("C++ using Data Structure")	Semester: II	
Hrs/Week:	4	Credit: 2	
Objectives	On successful completion of this Lab. students should have: - Understanding, Learning and Applying the various Programming concepts of OOPS, C++ and Data Structures like stack queue, list, sort, search, etc.,. Improving the Programming skills in C++ and Data Structures.		
	Content		Hrs
	SAMPLE PROGRAM LIST **Pre model** 1. Write a C++ program for Inline function. 2. Write a C++ program for function overloading. 3. Write a C++ program to sort (Ascending & Descending) the given numbers. 4. Write a C++ program for friend function. 5. Write a C++ program to overload constructors. 6. Write a C++ program to perform stack operations. 7. Write a C++ program to perform queue operations. 8. Write a C++ program for binary search. 9. Write a C++ program for linear search 10. Write a C++ program for insertion sort. **Model** 11. Write a C++ program to overload unary operator. 12. Write a C++ program to overload binary operator. 13. Write a C++ program for single inheritance 14. Write a C++ program for multi level inheritance. 15. Write a C++ program for multiple inheritances. 16. Write a C++ program for hybrid inheritance. 17. Write a C++ program to display the values using virtual function. 18. Write a C++ program to perform file operations. 19. Write a C++ program for Templates. 20. Write a C++ program for selection sort. 21. Write a C++ program for bubble sort. 22. Write a C++ program for quick sort.		52

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R. Sekar				
C.R. Durgadevi				

Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT09	**Title:** Operating Systems	**Semester:** III	
Hrs/Week:	5	**Credit:** 4	
Objectives	On successful completion of this subject the students should have: - Basic concepts of operating system, memory management, process management, information management. - Basic concepts of deadlocks, parallel processing and distributed processing.		
Units	**Content**		**Hrs**
Unit I	**Functions and Structure:** Definition - Services - Uses of System Calls- Issue of Portability – Structure - Virtual machine - Booting. **Information Management:** File System - Block and Block numbering scheme - Relationship between OS and DMS - File Directory entry - Open/Close Operations - Device Driver (DD).		13
Unit II	**Process Management:** Evolution – switching – state transition – PCB – hierarchy – operations – scheduling – multithreading. **Inter Process Communication:** Producer Consumer Problem and Solutions - Classical IPC Problems.		12
Unit III	**Deadlocks:** Graphical Representation - Prerequisites - Strategies. **Memory Management**: Single Contiguous - Fixed Partition - Variable Partitions - Non Contiguous Allocation - General Concept - Virtual Memory.		13
Unit IV	**Parallel Processing:** Definition - Difference between Distributed and Parallel Processing - Advantages - Machine Architectures supporting - Operating System. **Distributed Processing**: Process Migration – RPC - Distributed Processes, File Management, Cache Management, issues, Mutual Exclusion - Deadlocks in Distributed Management.		14
Unit V	**Windows NT:** Process management - process synchronization - memory management. **Windows 2000:** operating system organization - process management – memory management - file handling - security.		13
	Total Contact Hrs		**65**
Text Book:	1. Achyut s Godbole. (2009). *Operating Systems*, TMH Publications, Second Edition.		
Reference Books:	1. H. M Deitel. (2003). *Operating Systems*, 2nd Edition, Pearson Education Publication. 2. John J. Donovan. (1991). *Systems Programming*, TMH Publications.		

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K. Vijayakumar				
V. Prabawathi				

Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT10	**Title:** Relational Database Management System	**Semester:** III	
Hrs/Week:	5	**Credit:** 4	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of DBMS, Oracle, normalization, Data management and retrieval, PL/SQL Commands and operations.		
Units	**Content**		**Hrs**
Unit I	**Database Concepts: A Relational approach:** Database – Relationships – DBMS– Relational Data Model – Integrity Rules – Theoretical Relational Languages. **Database Design: Data Modeling and Normalization**: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams - Demoralization – Another Example of Normalization.		12
Unit II	**Oracle9*i*: Overview:** Personal Databases – Client/Server Databases – Oracle9i an Introduction – SQL *Plus Operations– *i*SQL *Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Table Operations – Table Types – Spooling – Error codes.		13
Unit III	**Working with Table: Data Management and Retrieval:** DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. **Functions and Grouping**: Built-in functions – Grouping Data.		12
Unit IV	**Multiple Tables: Joins and Set operations**: Join – Set operations. **PL/SQL:** Introduction – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. **Control Structures and Embedded SQL**: Control Structures – Nested Blocks – SQ L in PL/SQL – Data Manipulation – Transaction Control statements		13
Unit V	**PL/SQL Cursors and Exceptions:** Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions. **PL/SQL: Composite Data Types:** Records – Tables – V arrays. **Named Blocks**: Procedures – Functions – Packages –Triggers –Data Dictionary Views.		15
	Total Contact Hrs		**65**
Text Book:	1. Nilesh Shah. (2009), *Database Systems Using Oracle*, 2nd edition, PHI.		
Reference Books:	1. Arun Majumdar & Pritimoy Bhattacharya, *Database Management Systems,*TMH. 2. Gerald V. Post.(2005). *Database Management Systems*, 3rd edition, TMH.		

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C.R. Durga devi				
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Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UIT11	**Title:** Visual Programming	**Semester:** III	
Hrs/Week:	5	**Credit:** 4	
Objectives	On successful completion of this subject the students should have the knowledge about Controls, Events, Interfaces, Objects and ActiveX concepts of Visual Basic.		
Units	**Content**		**Hrs**
Unit I	**Visual Basic**: Getting started – Visual Basic environment: Tool bars – The Tool box and Custom controls and components – using file menu, edit menu, view menu, project menu, format menu, debug menu, adding menu and window menu – customizing a form and writing simple programs		12
Unit II	**Building the user interface:** The tool box – creating controls – properties setting . **First steps in programming:** Code window – Visual Basic's editing tools – Statements in VB – Data types – Working with variables – Input boxes and Message boxes – displaying information		14
Unit III	Controlling program flow – Built-in functions – User defined functions and procedures – Control arrays – List and Combo boxes – the Flex grid control		13
Unit IV	**Finishing the interface:** Frames – Option buttons – Check boxes – Scroll bars – Timers – Common Dialog boxes – The Microsoft windows common controls 6.0 – Menus – MDI forms.		14
Unit V	Communicating with other window applications – Database development with Visual Basic (DAO, RDO) – Building ActiveX controls.		12
	Total Contact Hrs		**65**
Text Books:	1. Gary Cornell. (2003). *Visual Basic 6 from the GROUND UP*. 14th Reprint Tata Mc-Graw Hill.		
Reference Book:	1. Steven Holzner. (2007). *Visual Basic 2005 Programming Black book*. Reprint Edition. Dreamtech press.		

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V. Prabavathi				
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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT12	**Title:** Modern System Analysis and Design (**Allied 3**)	**Semester:** III	
Hrs/Week:	6	**Credit:** 4	
Objectives	On successful completion of this subject the students should have S/W Development, Various Approaches and Methodologies, Process Models, Forms & Reports, Implementation, Maintenance and CASE Tools.		
Units	**Content**		**Hrs**
Unit I	**System:** Definition – characteristics – concepts. System Analysis & skills. **Types of Information Systems:** TPS – MIS – DSS - System Development Life Cycle (SDLC). The heart of the system development process-The origin of software.		16
Unit II	**Assessing the Project Feasibility:** Feasibility factors**,** Economic – technical & other feasibility concerns. **Baseline Project Plan Report (BPP). System Analysis (Requirements Determination) Traditional Methods:** Interviews – Questionnaires – Observations – Document Analysis. **Modern Methods:** JAD – Prototype. **Radical Methods:** Identifying processes to reengineer – Disruptive technologies.		16
Unit III	**Process Modeling:** DFD mechanics – four types of DFDs – DFD in system analysis-**Structuring system logic Requirements- Logic Design:** Physical file & database design – Field design – Table design. **Structuring system Data Requirements:** Introduction to E-R Modeling-Conceptual Data modeling and the E-R model.		15
Unit IV	**Forms & Reports:** Designing – Formatting – assessing usability. **Interfaces & Dialogues:** Process – Designing interfaces – Designing dialogues – Interaction methods & devices. **Designing Internals:** Transaction centered & Transform centered design – Transform analysis – Transaction analysis – Five types of coupling – Seven types of cohesion.		15
Unit V	**Implementation & Maintenance:** Six major activities. **S/W Application testing:** Types – Walkthrough – process. **Installation:** Four types – planning. **Documenting the system:** Training& supporting users. **Maintenance:** Process – conducting systems maintenance. **Automated tools :** CASE – Objectives of CASE – Use of CASE in organizations – Components of CASE – Visual and Emerging Development tools		16
	Total Contact Hrs		**78**
Text Book:	1. Jeffrey A.Hoffer, Joey F.George, Joseph S.Valacich, (2000). (2009). *Modern Systems Analysis and Design*. IInd Edition . Vth Edition. Pearson Education Pub's.		
Reference Books:	1. Richard Fairley. (2001).*Software Engineering Concepts*. Tata McGraw Hill Publications. 2. Rajib Mall, (2010). *Fundamentals of Software Engineering*. Third Edition. Prentice Hall of India.		

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Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UIT13	**Title:** Core Lab. – III ("RDBMS & Visual Basic")	**Semester:** III
Hrs/Week:	6	**Credit:** 2
Objectives	On successful completion of this Lab. students should have: - Understanding, Learning and Applying the various Programming concepts of ORACLE (Basic commands, Trigger, Functions, etc., - Improving the Programming skills in Visual Basic like DAO, ADO, MDI, etc.,	

	Content	**Hrs**
	SAMPLE PROGRAM LIST **Pre Model** 1. Create the following table *(PK - Primary Key, FK – Foreign Key)* **cat_head, route_head, place_head, route_detail, ticket_detail, ticket_head** with the mapping given below: cat_head route_head *(cat_code PK) (cat_code FK),* route_head route_detail *(Route_id PK) (Route_id FK),* ticket_head ticket_detail *(tick_no PK) (Tick_no FK),* place_head route_detail *(Place_id PK) (Place_id FK),* (i) Alter the table ticket_header to add a check constraint on ticket_no to accept Values between 1 and 500, (ii) Alter table route_header to add a column with data type as long. 2. (a) Insert values to above tables (b) Display only those routes that originate in madras and terminate at Cochin (c) Display only distinct category code from the table route_header in descending manner. Update the table route_header to set the distance between madras and Coimbatore as 500 3. a. Select rows from ticket_details such that ticket number greater than any ticket_number in Ticket_header. b. Select rows from route_header such that the route_id are greater than all route_id in route_detail where place id is "100". c. Create view tick from ticket_header with Ticket_no, Origin, Destination, route_id 4. Generat1. Write a simple VB program to accept a number as input and convert them into a. Binary b. Octal c. Hexa-decimal 5. Write a simple VB program to add the items to list box with user input and move the selected item to combo box one by one. 6. Write a simple VB program to develop a calculator with basic operation.	**78**

	Model 1. a. Write a PL/SQL block to update the bus_station to be “ERODE” where place_id is ’01’ or ‘05’ [place_header] b. Write a PL/SQL block to satisfy the following condition by accepting the route_id as user input. If the distance is less than 500 than update the fare to be 200 c. Write a Database trigger before insert for each row on the table route_detail not allowing transaction on Saturday / Sunday d. Write a Database trigger before delete for each row not allowing deletion and give the appropriate message on the table route_detail 2. Develop a Simple Project for Student Database Management System using DAO. 3. Design a form using common dialog control to display the font, save and open dialog box without using the action control property. 4. Write a simple program to prepare a Questionnaire. 5. Write a VB Program to develop a menu driven program Add a MDI window in the form and arrange them in the cascading/horizontal style using menus (Create a menu to add form, arrange) (Menu Item 1). Also change the form color using the menu in another menu item (Menu Item 2). 6. Create a VB report generation program.	

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R. Sekar				

Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UITSA1	**Title:** SKILL BASED ELECTIVE - I (Web Designing Lab.)	**Semester:** III
Hrs/Week:	2	**Credit:** 2
Objectives	On successful completion of this Lab.(DHTML) students should have: - Understanding, Learning and Applying the various Programming concepts of basic tags like list, table, frames, forms, marquee and all attributes and Forms with controls. - Improving the Programming skills.	

	Content	Hrs
	SAMPLE PROGRAM LIST **Pre Model** 1. Create an organization web page. 2. Write a program to display the college library books information's. 3. Write a program to prepare an agenda for three days National level Seminar for IT dept. 4. Write a program to prepare your consolidated marks statement. 5. Write a program to verify the Font properties. 6. Write a program to verify the Text properties. 7. Write a program to verify the List properties. 8. Write a program for advertising for a new mobile phone. 9. Write a program to prepare a calendar for the month of January 2011. 10. Write a program to prepare the class time-table for IT Dept (I, II & III Yrs.). **Model** 11. Write a program to prepare your Bio-data form. 12. Write a program to create new bank A/C form. 13. Write a program to prepare bank common pay in slip. 14. Write a program to prepare your proctor form. 15. Write a program to prepare an application form (PG Class).	**26**

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V. Prabavathi				
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Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UITSB1	**Title:** SKILL BASED ELECTIVE-I (Web Programming Lab.)	**Semester:** III
Hrs/Week:	2	**Credit:** 2
Objectives	On successful completion of this Lab **(JSP)**. students should have: - Understanding, Learning and Applying the various Programming concepts. - Improving the Programming skills.	

	Content	Hrs
	SAMPLE PROGRAM LIST **Pre Model** 1. Write a JSP program for implicit object. 2. Write a JSP program for performing Arithmetic operations. 3. Write a JSP program to print the current time of the day using scriptlet. 4. Write a JSP program to create a Login form. **Model** 5. Write a JSP program for working with session object. 6. Write a JSP program to create, reading, removing a cookie.	**26**

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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT14	**Title:** Computer Networks	**Semester:** IV	
Hrs/Week:	5	**Credit:** 4	
Objectives	On successful completion of this subject the students should have: - Basic concepts of networking like data transmission, topology, OSI model, Transmission medias, X.25 protocol, frame relay, ATM and accessing the internet.		
Units	**Content**		**Hrs**
Unit I	Introduction to Data Communications and Networking – Analog and Digital Transmission Methods – Modes of Data Transmission and Multiplexing.		12
Unit II	**Transmission Errors**: Detection and Correction - **Transmission Media**: Guided Media, Unguided Media. **Network Topologies**: Mesh, Star, Tree, Ring, Bus topology. Switching- Circuit, Message, Packet switching. Routers and Routing – Factors affecting Routing Algorithms – Routing Algorithms – Approaches to Routing.		13
Unit III	Network Protocols and OSI Model - Local Area Networks (LAN), Metropolitan Area Networks (MAN) and Wide Area Networks (WAN) – Integrated Services Digital Network (ISDN).		13
Unit IV	**X.25 Protocol**: Working principle-Characteristics – Packet format – operations. **Frame Relay:** Need – Working principle – Frame format-congestion & traffic control – FRAD & Features. **Asynchronous Transfer Mode:** Introduction- Packet size- Virtual circuits – Cells- Switching – Layers.		14
Unit V	Internetworking Concepts, Devices, Internet Basics, History and Architecture. **Ways of Accessing the Internet:** Introduction- Dial- up access- Leased lines- DSL- Cable modems.		13
	Total Contact Hrs		**65**
Text Book:	1. Achyut S.Godbole. (2008). *Data Communications and Networks.* Tata McGraw-Hill Publishing Company Limited, Ninth reprint,		
Reference Books:	1. Behrouz A. Forouzan. (2007). *Data Communications and Networking Second Edition Update*. Tata McGraw-Hill Publishing Company Limited, Nineteenth reprint. 2. Andrew S. Tanenbaum. (2000). *Computer Networks.* III Edition, Prentice Hall of India.		

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C.R. Durgadevi				
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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT15	**Title:** Java Programming	**Semester:** IV	
Hrs/Week:	5	**Credit:** 4	
Objectives	On successful completion of this paper, the students will have knowledge about the basic concepts of classes, methods, interfaces, exception handling, multithread programming, package and access modifiers, strings, I/O classes, applets, AWT.		
Units	**Content**		**Hrs**
Unit I	An Overview-Data types-Variables-Array. Control statements: If, Switch, While, Do While, For, Nested Loop. **Classes:** Basics-Declaration-Assigning object reference variable-Methods-Constructors-this Keyword-Finalize ( )-Stack class.		12
Unit II	**Methods and classes:** Overloading Methods-Objects as parameters-Argument passing-Returning objects-Access control-Static-Final-Nested, Inner and String classes. **Inheritance:** Basics-Super-Method Overriding-Abstract classes-Final with Inheritance-Object class. **Packages and Interfaces**.		14
Unit III	**Exception Handling:** Basics-Types-Uncaught -Try and Catch-Nested Try-Throw, Throws, Finally, Built-In, Chained Exceptions. **Multi Threaded Programming:** Thread Model-Main Thread-Creation-IsAlive and Join-Priorities-Synchronization-Inter Thread Communication-Life Cycle. Input and Output Basics-Applets.		13
Unit IV	**String Handling:** Constructors-Operations-Character Extraction-Functions-Data conversions-String Buffer. **Applet Class:** Basics-Architecture-Skeleton-Display Methods-Repainting-Html Applet Tag-Passing Parameters-getDocumentBase () and getCodeBase ()-AudioClip and AppletStub Interface. **Event Handling:** Mechanisms-Delegation-Classes-Sources-Listener Interfaces-Adapter and Inner Classes.		14
Unit V	**Abstract Windowing Toolkit:** Working with Windows, Graphics, Text.AWT Controls, Layout Managers and Menus.		12
	Total Contact Hrs		**65**
Text Book:	1. HERBERT SCHILDT, (2008). "JAVA 2 COMPLETE REFERENCE", Tata McGraw-Hill Publishing Company Limited, Fifth Edition.		
Reference Books:	1. E. Balagurusamy. (2007). "*Programming with JAVA – A Primer*", Tata McGraw-Hill Publishing Company Limited, Third Edition.		

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K.Vijayakumar				
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Department	Information Technology		
Course	B.Sc.,	Effective from the year: 2013-2014	
Subject Code: 13UIT16	Title: Software Engineering	Semester: IV	
Hrs/Week:	4	Credit: 4	
Objectives	On successful completion of this subject the students should have: - Understanding the Software life cycle, Various testing techniques and their uses, Requirements analysis, Design concepts, Software quality assurance.		
Units	Content		Hrs
Unit I	**Software and Software Engineering:** The Nature of software-The Unique Nature of WebApps-Software Engineering-The software process-Software Engineering practice-Software Myths. **Process Models:** A Generic process model-Process Assessment and Improvement-Perspective process model-Specialized process models-The Unified process- Personal and team process models-process Technology-Product and Process.		10
Unit II	Requirement analysis-Scenario based modeling-UML Models-Data modeling concepts-Class based modeling.**Requirements Modeling:** Flow, Behaviour, Patterns-and WebApps.		10
Unit III	**Design concepts:** The design process-Design concepts-Design model. **User Interface Design:** The golden rule-User Interface Analysis and Design-Interface Analysis-Interface Design Steps-WebApp Interface Design-Design evaluation.		10
Unit IV	**Quality Concepts:** Software Quality-Dilemma-Achieving Software Quality. **Software Quality Assurance:** Elements of Software Quality Assurance-SQA Tasks, Goals and Metrics-Formal Approaches to SQA-Statistical software quality assurance-Software Reliability.		11
Unit V	**Software Testing strategies:** Strategic Approach to Software Testing-Strategic Issues-Unit Testing-Integration Testing-Validation Testing-System Testing. **Testing conventional Applications:** Software Testing Fundamentals-Internal and External view of Testing-White Box Testing-Basis Path Testing-Control Structure Testing-Black Box Testing.		11
	Total Contact Hrs		**52**
Text Book:	1. Roger S.Pressman, (2010),"SOFTWARE ENGINEERING-A Practitioner's Approach", McGraw-Hill International, Seventh Edition.		
Reference Books:	1. Richard Fairley,(2010),"Software engineering concepts", Tata McGraw-Hill Publishing Company Limited, 33rd Reprint.		

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V. Prabavathi				
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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT17	**Title:** Microprocessor and Assembly Language Programming. (**Allied 4**)	**Semester:** IV	
Hrs/Week:	5	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: - Understood the Evolution of microprocessor, Addressing modes and PIN diagrams of various processors, Assembly Language Programs, Other Microprocessors, Interfacing A/D converter and Applications.		
Units	**Content**		**Hrs**
Unit I	**Introduction to Microprocessors**: Evolution of microprocessors – Single- chip Microcomputer – Embedded Microprocessors – Bit - Slice processors – Microprogramming – RISC and CISC Processors – Scalar and Superscalar Processors – Vector Processors – Array Processors – Symbolic Processors – Digital Signal Processors Intel 8086 – Pin Description of Intel 8086 – Operating modes of 8086 – Register organization of 8086 – BIU and EU – Interrupts – 8086 based computer system – Addressing Modes of 8086.		13
Unit II	**8086 Instruction Set** – Instruction Groups – Addressing Mode Byte – Segment Register Selection – Segment Override – 8086 Instructions. **Assembly Language Programs for 8086**: Largest Number, Smallest Number in a Data Array – Numbers in Ascending and Descending order – Block Move or Relocation – Block Move using REP instruction – Sum of a series – Multi byte Addition.		12
Unit III	**Intel 386 and 486 Microprocessors**: Intel 386 and 486 Microprocessor – 486DX Architecture – Register Organization of 486 Microprocessor – Memory Organization – Operating Modes of Intel 486 – Virtual Memory – Memory Management Unit – Gates – Interrupts and Exceptions – Addressing Modes of 80486 – Pin Configuration - Input devices – Output devices.		13
Unit IV	**Memory and I/O Addressing** : **8086 Addressing and Address Decoding**: Address decoders – ROM address decoding - RAM address decoding. **Programmable I/O Ports**: PPI Intel 8255 & 82C55 – Operating modes of 8255 – BSR – Control groups – Control word. DMA Data Transfer. **Other Microprocessors :** Pentium Microprocessors – Pentium Pro microprocessor – Alpha Micropro cessor – Cyrix Microprocessor – MIPS Microprocessor – AMD Microprocessor.		14
Unit V	MOTOROLA 68000, MOTOROLA 68020, MOTOROLA 68030, MOTOROLA 68040. **Interfacing of A/D Converter and Applications**: Introduction – Interfacing of ADC 0808 or ADC 0809 to Intel 8086 – Bipolar to Unipolar Converter – Sample and Hold Circuit, LF 398 – Microprocessor-based Measurement and Control of Physical Quantities.		13
	Total Contact Hrs		**65**
Text Book:	1. Badri Ram. (2007). *Advanced Microprocessors and Interfacing.* Tata McGraw-Hill Publishing Company Limited, Fourteenth reprint.		
Reference Books:	1. A.K. Ray, K.M. Bhurchandi. (2007). *Advanced Microprocessors and Peripherals.* Tata McGraw-Hill Publishing Company Limited, Second Edition. 2. Ramesh S. Gaonkar. (1997). *Microprocessor Architecture, Programming, and Applications with the 8085.* Third Edition. PRI India.		

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K. Vijayakumar				

R. Sekar				

Department	Information Technology	
Course	B.Sc.	**Effective from the year:** 2013-2014
Subject Code: 13UIT18	**Title:** Core Lab. – IV ("Java")	**Semester:** IV
Hrs/Week:	4	**Credit:** 2
Objectives	On successful completion of this Lab. students should have: - Understanding, Learning and Applying the various Programming concepts of Java like inheritance, multithreading, exception handling, applet, package etc., - Improving the Programming skills in Java.	

	Content	Hrs
	SAMPLE PROGRAM LIST **Pre Model** 1. Program to generate a Pascal Triangle 2. Program for roots of a Quadratic Equation 3. Program for merging two sorted arrays 4. Program for counting letter frequencies in a given string 5. Program for Multithreading 6. Program for preparing mark list using inheritance 7. Program for Multiple inheritance **Model** 8. Program for Exception Handling 9. Program for creating your own package 10. Program that counts the number of lines, words and characters in a given text file 11. Program that right-justifies a text file 12. Program that display a digital clock using applet	**52**

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Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UIT19	**Title:** Core Lab. – V SOFTWARE TESTING TOOLS	**Semester:** IV	
Hrs/Week:	4	**Credit:** 2	
Objectives	On successful completion of this Lab. students will have the knowledge of Applying the various Programming concepts of software testing like Integration, unit, functional, non-functional testing and about product metrics.		

	Content	**Hrs**
	SAMPLE PROGRAM LIST **Pre Model** 1. Create a payroll system and test the tool. 2. Create a ration shop management system and test the tool. 3. Create airline reservation system and test the tool. 4. Create Library management system and test the tool. 5. Create Banking system and test the tool. **Model** 6. Create Book shop management system and test the tool. 7. Create Electricity billing system and test the tool. 8. Create online cinema ticket reservation system and test the tool. 9. Create Music gallery and test the tool. 10. Create trading system and test the tool.	**52**

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C.R. Durgadevi				

Department	Information Technology	
Course	B.Sc.,	Effective from the year: 2013-2014
Subject Code: 13UITSA2	Title: Skill Based Elective – II (Web Programming Lab.).	Semester: IV
Hrs/Week:	2	Credit: 2
Objectives	On successful completion of this Lab. (PHP) students should have: - Understanding, Learning and Applying the various Programming concepts of, database concepts, string functions, date and time functions, content navigation, and creating web page. - Improving the Programming skills.	

	Content	Hrs
	SAMPLE PROGRAM LIST **Pre Model** 1. Write a program to print Fibonacci series in PHP. 2. Write a PHP program to store fruit names and prices in a database and display it. 3. Write a program to store the product details in database in PHP. 4. Write a program to create a registration form and store the details in database in PHP. 5. Write a program to search the given book in database using PHP. **Model** 6. Create a simple application using database.	**26**

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Department	Information Technology	
Course	B.Sc.	**Effective from the year:** 2013-2014
Subject Code: 13UITSB2	**Title:** Skill Based Elective – II (Web Programming Lab.)	**Semester:** IV
Hrs/Week:	2	**Credit:** 2
Objectives	On successful completion of this Lab.(ASP) students should have: - Understanding, Learning and Applying the Programming concepts - Improving the Programming skills.	

	Content	Hrs
	SAMPLE PROGRAM LIST **Pre Model** 1. Write a program to implement a sub function call in ASP. 2. Write a ASP program for handling the string functions 3. Write an ASP program for content navigation in ASP. 4. Write a program to display date and time in ASP. 5. Write a program to create a web page using ASP. **Model** 6. Create a simple application using database.	**26**

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V. Prabavathi				

Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT20	**Title:** Core 11- Linux Programming	**Semester: V**	
Hrs/Week:	6	**Credit:** 4	
Objectives	On successful completion of this subject the students should have the knowledge about Unix & Linux Operating System concepts, Administrative & Normal Commands.		
Units	**Content**		**Hrs**
Unit I	**Getting Started:** Introduction - Red Hat Linux - Password changes – Documentation - Using Pico to create/edit file - Basic utilities - Special characters.		15
Unit II	**Introduction to the GNU/ Linux Utilities:** Working with files - | (Pipe) – Utilities – Compress and archive file – Locating commands – User and system information – Communicating to other users - e-mail.		15
Unit III	**The GNU/Linux File system:** The Hierarchical file system – Directory and ordinary files - Working with directories – Access permissions – Links.		15
Unit IV	**The VIM Editor:** History – Creating and editing a file – features. Command Mode: moving the cursor – Deleting and changing text. Input Mode - Searching and substituting – Miscellaneous commands – yank, put and delete commands – Reading and writing files – Setting parameters – Advanced editing techniques – Units of measure.		17
Unit V	**Programming the Bourne Again Shell:** Control structures – Expanding null or unset variables – String pattern matching – File name generation – Builtins – functions. **X Window System and GUI:** Introduction – X Window system – X Applications.		16
	Total Contact Hrs		**78**
Text Book:	1. Mark G. Sobell, *A Practical Guide to Red Hat Linux 8*, Pearson Education, 2004 Edition.		
Reference Books:	1. Sumithaba Das, (2006). *Unix Concepts and Applications*, 4th Edition, Tata McGraw-Hill Education pub. 2. Michael Jang, (2003). *Mastering Red Hat Linux Fedora Core 5*, Wiley Pub.		

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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT21	**Title:** CORE – 12 C# & .Net Programming.	**Semester:** V	
Hrs/Week:	6	**Credit:** 4	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of C#.Net (Data types, Statements, Properties, Inheritance, Polymorphism, Multithreading, and Database Connectivity). - Understanding various concepts of Vb.Net (Operators, Loops, Statements, Check Boxes, Radio Buttons, Menus, and Tool Bars).		
Units	**Content**		**Hrs**
Unit I	**Visual C#.Net:** Introduction - Features – Data types and console I/O. C**ontrol Statements (**if, switch, while, do…while, for, for...Each, goto**). Arrays:** One Dimensional, Two Dimensional, Jagged. **Methods:** (value, ref, out, params) – Overloading. **Classes and Objects:** Introduction – Definition - Data members (constant, Read-only). **Constructors**: Overloading – Copy – Static.		15
Unit II	**Properties, Indexers and Operator Overloading:** Introduction – Properties – Indexes – Operator overloading – Conversion operators**. Inheritance and Polymorphism:** Introduction – Example – Method Overriding – Accessing Base class Members and Constructors – Virtual methods – Abstract Classes and Abstract Methods – Sealed classes. **Interfaces**: Introduction – Definition and usage – Multiple implementations – Inheritance. **Namespaces and Components** – Namespaces – Components – Components and Namespaces – Access modifiers.		16
Unit III	Introduction – Delegates – Events – Attributes. **Exception-handling:** Introduction – Mechanism (Default, User – defined). Backtracking – throw statement – Custom Exception. **Multithreading:** Introduction – Usage – Thread Class and Priority – Synchronization. **I/O Streams:** Introduction – Streams – Binary Data files – Text files – Data files – File and Directory Operations. Windows applications-I - Windows applications-II – Database connectivity.		16
Unit IV	**VB.NET:** Essentials – Operators - conditionals and loops – Procedures, Scope and Exception handling – Windows Forms - Text Boxes, Rich Text Boxes, Labels and Link Labels – Buttons - Checkboxes, Radio buttons, Panels and Group boxes.		16
Unit V	List boxes, Checked List Boxes, Combo boxes and Picture boxes – Scroll bars, Splitters, Track Bars, Pickers, Notify Icons, Tool Tips and Timers– Menus, Built-in Dialog boxes and printing– Image lists, Tree and List views, Toolbars, Status and progress Bars and tab.		15
	Total Contact Hrs		**78**
Text Books:	1. Muthu C. (2008). *Visual C#.Net.* First Reprint. 2. Steven Holzner (2008) *Visual Baisc.Net Programming* Black Book- -Dream Tech Publication.		
Reference Books:	1. Kogent learning solutions (2011) *ASP.NET 4.0 in Simple Steps*- -Dream Tech Press Publication. 2. PADMA PRIYA .S (2011) *Web Technology* - Scitech Publications.		

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V.Prabavathi				
K. Vijayakumar				

Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT22	**Title:** (ELECTIVE – I) ADVANCED COMPUTER NETWORKS	**Semester:** V	
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: Understanding various concepts of TCP/IP Protocols, Security, Symmetric and Asymmetric algorithms, Digital certificates, E-mail, WWW, etc.		
Units	**Content**		**Hrs**
Unit I	**TCP / IP Part – I :** Introduction – Basics- Needs- Logical Addresses- Example- Concept of IP- ARP- RARP- ICMP- Datagram Fragmentation & Reassembly.**TCP / IP Part – II:** Introduction – Basics- Features - Relationship between TCP and IP- Ports and Sockets- Connections- Reliable- Packet Format – UDP - UDP Packet- Difference between UDP and TCP.		14
Unit II	**TCP / IP Part – III:** Domain Name System (DNS) – Electronic Mail (Email) – File Transfer Protocol (FTP). **TCP / IP Part – IV :** WWW- Basics of www- HTML- Web Browser Architecture- Web pages and Multimedia – TELNET- Static, Dynamic and Active web pages.		14
Unit III	**Security:** Introduction – Need – Approaches – Principles – Types of attacks. **Cryptography:** Introduction – Plain text and Cipher text – Substitution & Transposition techniques – Encryption and Decryption – Symmetric and Asymmetric key Cryptography – Steagnography – Key range and Key size - Possible types of attacks.		16
Unit IV	**Symmetric Key Algorithms and AES**: Introduction - Algorithm Types and modes – Overview – DES– IDEA– RC4 & 5 – Blowfish – AES. **Asymmetric Key Algorithms**: Introduction – History – Overview - RSA algorithm – Symmetric and asymmetric cryptography. **Digital Signatures**: Introduction – Message Digests - MD5 – Secure Hash Algorithm. Knapsack algorithm – Other algorithms.		17
Unit V	**Digital Certificates:** Introduction – Concepts – Certification Authority – Technical details – Creation – Cross certification – Revocations. **Private key management - PKIX model – PKCS**. **Internet Security Protocols:** Introduction – Concepts. **Secure Socket Layer** (SSL): **Transport Layer Security** (TLS) – **Secure Hyper Text Transfer Protocol** (SHTTP) – **Time Stamping Protocol** (TSP). **Secure Electronic Transaction (SET):** Introduction – Participants – Process – Internals. SSL Versus SET – 3-D secure Protocol. **Electronic Money:** Introduction – Security mechanisms – Types. **Email security**: Introduction – Privacy Enhanced Mail – Pretty Good Privacy. WAP Security - Security in GSM – Security in 3G.		17
	Total Contact Hrs		**78**
Text Books:	1. Achyut S.Godbole. (2007). *Data Communications and Networks*. Ninth reprint. Tata McGraw-Hill Publishing Company Limited. 2. ATUL KAHATE. (2003). *CRYPTOGRAPY and NETWORK SECURITY*. Second Edition, Tata McGraw-Hill publishing.		
Reference Books:	1. William Stallings.(2006).*Cryptography and Network Security Principles and Practices*. Fourth edition. PHI Education Asia. 2. Behrouz A. Forouzan. (2007). *CRYPTOGRAPY and NETWORK SECURITY*. TMH		

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V. Prabavathi				
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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT22	**Title:** Elective – I Embedded Systems	**Semester:** V	
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of VLSI circuit, Processor, Memory organization, Device drivers, Programming techniques, RTOS, etc.,		
Units	**Content**		**Hrs**
Unit I	**Introduction to Embedded System**: An Embedded System – Processor in the System – Other Hardware units – Software embedded into a system – Exemplary embedded system – Embedded system on chip and in VLSI circuit.		14
Unit II	**Processor and Memory organization**: Structural units in a processor – Processor selection – Memory devices – Memory selection - Allocation of memory – DMA – Interfacing processor, memories and I/O devices. **Devices and buses for device networks**: I/O devices – Timer and counting devices – Serial communication – Host system		15
Unit III	**Device drivers and Interrupts servicing mechanism**: Device drivers – Parallel port device drivers – Serial port device drivers – Device drivers for IPTD – Interrupt servicing mechanism – Context and the periods for context-switching, dead-line and interrupt latency.		16
Unit IV	**Programming concepts and embedded programming in C and C++**: Software programming in ALP and C – C program elements – Header and source files and processor directives – Macros and functions – Data types – Data structures – Modifiers – Statements – Loops and pointers – Embedded programming in C++ - Java – C program compiler and cross compiler – Source code for engineering tools for embedded C / C++ - Optimization of memory needs		16
Unit V	**Inter - process communication and synchronization of processes, Tasks and threads**: Multiple processor – Problem of sharing data by multiple tasks and routines – Inter process communication. **Real time operating systems**: Operating system services – I/O subsystem – Network operating systems – Real time and embedded operating systems – Interrupt routine in RTOS environment – RTOS task scheduling – Performance metric in scheduling.		17
	Total Contact Hrs		**78**
Text Books:	1. Raj Kamal, (2007) *Embedded Systems – Architecture*, *Programming and Design*, TMH.		
Reference Books:	1. Daniel W. Lewis, (2007) *Fundamentals of Embedded Software*, PHI Education Publications, ISBN, 81-7808-604-2. 2. Peter Marwedel (2006), *Embedded System Design,* New York, Springer Verlag Pub.		

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Department	Information Technology		
Course	B.Sc.	Effective from the year: 2013-2014	
Subject Code: 13UIT22	Title: Elective – I Multimedia	Semester: V	
Hrs/Week:	6	Credit: 5	
Objectives	On successful completion of this subject the students should have the knowledge about Multimedia concepts, Hardware and Software, types of authoring tools and Multimedia Applications.		

Unit	Content	Hrs
Unit I	**Introduction:** Multimedia Definitions- Elements of Multimedia Systems-Stages of Multimedia project - Multimedia team. **Multimedia hardware and software:** Macintosh and windows production platforms-Connections-Interface-Memory and storage devices- Input Devices - Output Hardware - Communication devices.	15
Unit II	**Basic software Tools:** Text Editing and word processing tools- OCR software - Painting and Drawing Tools- 3D Modeling and Animation Tools-Image editing tools- –Sound Editing Programs-Animation ,Video and Digital Movie tools. **Making Instant Multimedia:** Linking multimedia objects-office suites (Word, Spreadsheets, Databases and Presentation). **Multimedia Authoring Tools:** Types of authoring tools- Card and Page Based Tools-Icon Based authoring tools -Time based authoring tools-Cross Platform authoring notes.	16
Unit III	**Multimedia Building Blocks: Text:** Using text in multimedia- Font editing and design tools- Hypermedia and Hypertext. **Sound:** MIDI Vs Digital audio- Digital audio – Making MIDI Audio- Audio file Formats- -adding sound to your Multimedia Project. **Images:** Making still images: Bitmaps-Vector drawing-3d drawing and rendering-Color-image file formats-Macintosh formats-windows formats and cross Platform formats.	16
Unit IV	**Animation:** Principles of Animation: Animation techniques- animation File formats. **Video:** Using video –How video works- Broadcast video standards- shooting and editing video - recording formats- Digital video: Video compression. **Assembling and Delivering a project:** Planning and costing-Designing and producing-content and talent-Delivering	15
Unit V	**Multimedia Applications:** Multimedia in the real world-multimedia in training and education-multimedia for information and sales (Kiosks) - Multimedia and image processing –multimedia in the office-multimedia in the Home.	16
	Total Contact Hrs	78
Text Books:	1. Tay Vaughan. (2001). *Multimedia Making it work*. Fifth Edition. Tata McGRAW Hill. (Unit I, II, III, IV). 2. Judith Jeffcoate.(2009)*Multimedia in practice(Technology and Applications)*.Pearson Education, 4th Impression, (Unit V)..	
Reference Books:	1. Ralf Steinmetz & Klara Nahrstedt. (2009). *Multimedia Computing, Communication & Applications.* Pearson Education-Sixth Impression. 2. John E.Koegel Buford (2002), *Multimedia System*, New Delhi, Pearson Education.	

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V. Prabavathi				
R.Sekar				

Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UIT23	**Title: Core Lab. VI -** (C# and .Net Programming)	**Semester:** V
Hrs/Week:	5	**Credit:** 2
Objectives	On successful completion of this subject the students should have: - Understanding Practical Experience in various concepts of C#.Net and VB.Net programs like polymorphism, Inheritance, Loops, Controls and etc..,	

Units	Content	Hrs
	Sample Program List **Pre Model: (C#.NET)** 1. Using Switch Statement Display the employ details. 2. Create method overloading. 3. Create constructor overloading 4. Generate student mark list using inheritance 5. Create User-Defined exception**.** 6. Create an application using button controls (check box, radio). 7. Generate Month calendar. 8. Create applications using controls (trackbar,panel,treeview) 9. Create applications using controls (splitter, menu dialog boxes). 10. Generating the student details using ADO.Net. **Model: (VB.NET)** 1. Generate string handling function. 2. Create exception handling. 3. Generate program using VB.Net operators. 4. Create window application using text box, Rich text box 5. Create an application using button controls (check, radio, Panel). 6. Create an application using List boxes, Checked List boxes, Combo boxes and picture boxes). 7. Create an application using form controls and perform basic Manipulations. 8. Create a window application with list box, tables and panels. 9. Create application using Scroll bars, Spliters, Track bars, Pickers, Timers). 10. Create application using Image lists, Tree and list views, tool Bars, Status and Progress Bars and tab).	65
	Total Contact Hrs	**52**

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V.Prabavathi				
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Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UIT24	**Title:** Core Lab. - VII "Linux Programming"	**Semester: V**
Hrs/Week:	5	**Credit:** 3
Objectives	On successful completion of this subject the students should have programming knowledge about various commands in Unix and Linux.	

	Content	Hrs
	Sample Program List **Pre Model** **U**sing GNOME, perform the following 1. Change the Desktop Background and mouse pointer theme. 2. Change the Root Password 3. Add/Remove software 4. List and view all the files using Icon. 5. Create an Archive file and Extract all Individual files from it. 6.Perform character Mapping Using Shell perform the following 7. To execute the File manipulation commands 8. To execute the Directory manipulation commands 9. To execute the Utility commands 10.To execute the Pipes & Filter commands 11. To display the Multiplication table **Model** 1. To find the nCr of given numbers. 2. To print the odd & even of given n numbers. 3. To check a given number is an Armstrong or not 4. To calculate the sum of individual digits from a given number.	65

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K. Vijayakumar				
C.R. Durgadevi				

Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UITSA3	**Title:** Skill Based Elective – III Computer Fundamentals.	**Semester:** V
Hrs/Week:	1	**Credit:** 2
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of history of Computer, ASCII format, Binary operations, Memory, Memory types and secondary storage devices.	

Units	Content	Hrs
Unit I	History of Computers – Computer Languages – Types of Computers.	3
Unit II	Components of a Computer – ASCII Format – Bits - Bytes Format – Number System.	4
Unit III	Binary Operations – Number Conversion.	3
Unit IV	Memory – Types of Computer Memory.	2
Unit V	Secondary Storage Devices.	1
	Total Contact Hrs	13
Text Books:	1. Pradip Dey, Manas Ghosh. (2008). *Computer fundamentals and programming in C,* Oxford University Press.	
Reference Books:	1. M. Morris Mano. (2008). *Computer System Architecture,* Third Edition.	

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R. Sekar				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UITSB3	**Title:** Skill Based Elective – III Internet Basics.	**Semester:** V	
Hrs/Week:	1	**Credit:** 2	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of Internet, Internet culture, WWW, E-Mail. - Learning various applications of Internet.		
Units	**Content**		**Hrs**
Unit I	**Internet:** Introduction – Definition – History.		3
Unit II	Working principle – Congestion.		3
Unit III	Internet Culture – Business Culture and the Internet.		3
Unit IV	Collaborating Computing and the Internet. **WWW:** Introduction - Miscellaneous Web Browser.		2
Unit V	**Email:** Advantages and Disadvantages – User ID, Password and Email address.		2
	Total Contact Hrs		**13**
Text Books:	1. Raymond Green Law, Ellen Hepp. (2005). *Fundamentals of the Internet and WWW*, 2nd Edition. Tata McGraw Hill.		
Reference Books:	1. S. Padma Priya, (2011). *Web Technology*, Scitech Pub.		

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C.R. Durgadevi				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.,	Effective from the year: 2013-2014	
Subject Code: 13UIT25	Title: Core - 13 Computer Graphics	Semester: VI	
Hrs/Week:	6	Credit: 4	
Objectives	On successful completion of this subject the students should have :- Writing programming ability on Graphics, clear view on Graphics functions, output devices, 3D and 2D transformations, etc.,		

Unit	Content	Hrs
Unit I	**Overview of Graphics Systems:** Video Display Devices, Refresh Cathode ray tubes, Raster Scan displays, Random Scan Displays, Color CRT monitors, Direct view storage tubes, Flat panel Displays, 3-Dimentional viewing devices, Stereoscopic and Virtual Reality systems, Raster Scan Systems, Random Scan Systems, Input Devices, Graphics software.	15
Unit II	**Output Primitives:** Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms. **Attributes of Output Primitives:** Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.	16
Unit III	**2D Geometric Transformations:** Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. **2D Viewing:** The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations – Point, Line: Cohen-Sutherland Line Clipping, Liang- Barsky Line Clipping, Polygon, Curve, Text and Exterior clippings.	16
Unit IV	**3D Concepts**: 3D Display Methods – 3D Graphics Packages. **3D Object Representations**: Polygon Surfaces – Curved lines and Surfaces – Blobby Objects – **3D Geometric Modeling and Transformations**: Translation – Rotation – Scaling – Other Transformations.	15
Unit V	**Visible-Surface Detection Methods:** Classification of Visible-Surface algorithms – Depth-Buffer Method – Scan- Line Method – Depth-Sorting Method – BSP-Tree Method – Area-Subdivision Method – Octree Methods – Ray-casting Methods – Curved surfaces – Wire frame Methods – Visibility-Detection functions. **Illumination Models:** Standard Primaries and the Chromaticity Diagram – Intuitive color Concepts – RGB Color Model – YIQ Color Model – CMY Color Model – HLS Color Model- Color selection ad Applications.	16
	Total Contact Hrs	78
Text Books:	1. Donald Hearn, Pauline Baker, (2008). *COMPUTER GRAPHICS.* 2nd edition. PHI, Indian reprint.	
Reference Books:	1. William M. Newman & Robert F. Sproull. (2007). *PRINCIPLES OF INTERACTIVE COMPUTER GRAPHICS.* TMH. 2. Malay K.Pakhira (2008), *COMPUTER GRAPHICS*, *MULTIMEDIA AND ANIMATION*, New Delhi, Prentice Hall of India Pvt. Ltd.	

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K.Vijayakumar				
R. Sekar				

Department	Information Technology		
Course	B.Sc.,	Effective from the year: 2013-2014	
Subject Code: 13UIT26	Title : Elective II Digital Image Processing	Semester: VI	
Hrs/Week:	6	Credit: 5	
Objectives	➢ To understand the concepts of algorithmic designs of Digital Image processing techniques. ➢ To inculcate knowledge in features of MATLAB tool. ➢ To implement image processing concepts in MATLAB.		

Units	Content	Hrs
Unit I	**Introduction:** What Is Digital Image Processing? - Background on MATLAB and the Image - Processing Toolbox - The MATLAB Desktop **Fundamentals :** Digital Image Representation - Reading Images- Displaying Images - Writing Images- Classes - Image Types - Converting between Classes - Array Indexing - Introduction to M-Function Programming	15
Unit II	**Intensity Transformations and Spatial Filtering:** Intensity Transformation Functions - Histogram Processing and Function Plotting - Spatial Filtering - Image Processing Toolbox Standard Spatial Filters. **Image Restoration and Reconstruction:** A Model of the Image Degradation/Restoration Process - Noise Models - Restoration in the Presence of Noise Only—Spatial Filtering - Direct Inverse Filtering - Wiener Filtering	16
Unit III	**Color Image Processing:** Color Image Representation in MATLAB - Converting Between Color Spaces - The Basics of Color Image Processing - Color Transformations - Spatial Filtering of Color Images.	15
Unit IV	**Image Compression:** Background - Coding Redundancy - Spatial Redundancy - Irrelevant Information - JPEG Compression - Video Compression.	16
Unit V	**Morphological Image Processing :** Preliminaries - Dilation and Erosion - Combining Dilation and Erosion - Labeling Connected Components - Morphological Reconstruction - Gray-Scale Morphology. **Image Segmentation:** Point, Line, and Edge Detection - Thresholding - Region-Based Segmentation - Segmentation Using the Watershed Transform	16
	Total Contact Hrs.	78
Text Books:	Rafael C. Gonzalez, Richard E. Woods, Steven L. Eddins, (2009)**Digital Image Processing using MATLAB**, Second Edition, Gatesmark Pub.	
Reference Books:	1. Nick Efford, (2004), *Digital Image Processing A Practical Introducing Using Java*, 5th Edition, Pearson Education Publications. 2. B. Chanda, D. Dutta Majumder, (2003), *Digital Image Processing and Analysis*, PHI Publications.	

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Name	Signature	Name with Signature		
C.R. Durga Devi				
K. Vijayakumar				

Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UIT26	**Title:** ELECTIVE – II MOBILE COMPUTING	**Semester:** VI	
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of **WAP, GSM, CDMA, 2G, 3G** etc...		
Units	**Content**		**Hrs**
Unit I	**Introduction**: Mobility of Bits and Bytes –Wireless The Beginning – Mobile Computing – Dialogue Control – Networks – Middleware and Gateways – Application and services - Security in mobile computing – Standards _ Why is it necessary – Standard bodies. **MOBILE COMPUTTING ARCHITECTURE**: Architecture for mobile computing – Three-tier architecture – Mobile computing through Internet – Making existing applications mobile enabled		15
Unit II	**MOBILE COMPUTING THROUGH TELEPHONY**: Evaluation of telephony – Multiple access procedures – Mobile computing through telephone – IVR Application – Voice XML – TAPI. **EMERGING TECHNOLOGIES:** Blue Tooth – RFID – WiMAX – Mobile IP – IPv6 – Java Card.		16
Unit III	**GSM:** Global System for mobile communications – GSM Architecture – GSM Entities – Call routing in GSM – PLMN Interfaces – GSM Addresses and Identifiers – Network Aspects in GSM – GSM Frequency allocations – Authentications and Security. **SMS :** Strengths – Architecture – SM MT – SM MO – VAS through SMS.		16
Unit IV	**GPRS:** GPRS and packet data network – Architecture – Network Operations – Data services – Applications - Limitations – Billing and Charging. **WAP**: WAE – User agent & UAProf – WML – WSP – WTP – WDP – Gateway. **MMS**: Architecture – Transaction Flows.		15
Unit V	**CDMA and 3G**: Spread spectrum technology. **IS 95**: Speech and Channel Coding – Architecture – Channel Structure. CDMA vs. GSM – Wireless Data. **3G:** IMT & CDMA 2000 – Applications on 3G. **WIRELESS LAN:** Advantages – IEEE 802.11 standards - Types – 802.11 Architecture – Mobility – Deploying – Mobile Ad Hoc networks and sensor networks – Security – WiFi vs. 3G		16
	Total Contact Hrs		**78**
Text Books:	1. Asoke K Talukder, Roopa R Yavagal. (2005), *Mobile Computing*, TMH.		
Reference Books:	1. Jochen Schiller, (2008). *Mobile Communication*. Second Edition .Pearson Education. Asia. 2. Christoffer Andersson (2001), *GPRS and 3G Wireless Applications,* John Wiley and Sons pub.		

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K. Vijayakumar				

R. Sekar				

Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code	**Title:** ELECTIVE – II	**Semester:** VI	
13UIT26	Software Project Management		
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: Management and project evaluation, Effort estimation, Resource allocation, contract management and software quality.		

Units	Content	Hrs
Unit I	**Introduction to Software Project management:** Introduction –Importance – Meaning of a Project – Software project versus other types of project – Contract Management and technical project management – Activities covered – plans, methods, and methodologies – some ways of categorizing software projects. Stepwise: an overview of project planning. **Programme Management and Project Evaluation:** Programme Management – Managing the Allocation of resources within programmes – strategic programme management – creating a programme – aids to programme management – Benefits Management – Evaluation of Individual projects – technical assessment – cost-benefit analysis - cash flow forecasting – cost-benefit evaluation techniques – risk evaluation.	15
Unit II	**Software Effort Estimation:** Estimation – Problem with over and Under-estimates – basis for software estimating – software effort estimation techniques – Expert judgment – estimating by analogy. **Activity Planning:** The objectives – planning – Project schedules – project and activities – sequencing and scheduling activities – **Network:** Planning models – formulating a network model – adding time dimension – forward pass – backward pass. **Risk Management:** Risk – Categories – Dealing with risk – Risk identification, assessment, planning and management – Evaluating risk to schedule.	16
Unit III	**Resource Allocation:** Introduction - Nature of resources – identifying the resource requirements – scheduling resources – creating critical path – counting the cost – being specific – publishing the resource schedule – cost schedules – scheduling the sequence. **Monitoring and Control:** Creating framework – collecting the data – visualizing progress – cost monitoring – earned value analysis – prioritizing monitoring – getting the project back to target – change control.	16
Unit IV	**Managing Contracts:** ISO 12207 approach – supply process – types of contract – stages in contract placement, management – acceptance. **Managing People and Organizing Terms:** understanding behavior – organizational behavior – selecting the right person for the job – instruction in the best methods – Motivation – Working in groups – becoming a team – decision making – Leadership – organizational structures – dispersed and virtual teams - influence of culture – stress – health and safety.	15
Unit V	**Software Quality:** The place of software quality in project planning – importance of software quality – defining software quality – ISO 9126 - practical software quality measures – product vs process quality management – external standards – techniques to help enhance software quality- quality plans. Small Projects: Introduction – Some problems with student projects – content of a project plan – conclusion.	16
	Total Contact Hrs	**78**

Text Books:	1. Bob Hughes & Mike Cotterell, (2005). *SOFTWARE PROJECT MANAGEMENT*, 4th Edition, PHI Publications.
Reference Books:	1. Pankaj Jalote, (2002), *SOFTWARE PROJECT MANAGEMENT IN PRACTICE*, Pearson Education Asia. 2. Kieron Conway, (2000). *SOFTWARE PROJECT MANAGEMENT FROM CONCEPT TO DEPLOYMENT*, Dream Tech Press.

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Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT27	**Title:** Major Elective – III "Data Mining and Warehousing"	**Semester:** VI	
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of Data mining, KDD, Association rules, Classification, Clustering, different types of mining, etc.,		
Units	**Content**		**Hrs**
Unit I	**Data mining and the data warehouse**: Introduction - Data warehouse – Needs - Designing decision support system - integration with data mining - client server and data warehousing - multi processing machines - cost justification - KDD Process - setting up of KDD Environment - ten golden rules. **Data mining**: Introduction – Motivation of data mining - Data mining.		14
Unit II	**Mining frequent patterns, association and correlations**: Basic concepts - market basket analysis - frequent itemset - closed item set and association rules - frequent pattern mining-Efficient and scalable mining methods - Apriori algorithm-generating association rule from frequent item set - improving efficiency of Apriori - mining frequent itemset without candidate generation – using vertical data format-mining closed frequent itemset		15
Unit III	**Classification and prediction:** Definition – Issues - classification by Decision tree Induction – Bayesian classification-rule based classification - classification by back propagation - support vector machine.		16
Unit IV	**Cluster analysis:** what is cluster analysis - types of data in cluster analysis - categorization of major clustering methods - partitioning methods - hierarchical methods - density based methods		16
Unit V	Spatial data mining - multimedia data mining - text mining - mining the www - data mining Applications.		17
	Total Contact Hrs		**78**
Text Books:	Jiawei Han and Micheline Kamber (2005) *Data Mining concepts and techniques,* Elsevier publication.		
Reference Books:	1. Margaret H. Dunham (2009), *Data Mining Introductory and Advanced Topics,* Pearson Education Publications. 2. Vikram Pudi, P.Radha Krishna (2009), *Data Mining***,** Oxford University Press, First Edition. 3. Reema Thareja (2009), *Data Warehousing***,** Oxford University Press.		

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R. Sekar				

Department	Information Technology		
Course	B.Sc.,	Effective from the year: 2013-2014	
Subject Code: 13UIT27	Title : MAJOR ELECTIVE III "ARTIFICIAL INTELLIGENCE"	Semester: VI	
Hrs/Week:	6	Credit: 5	
Objectives	On successful completion of this subject the students should have the knowledge about search techniques, reasoning, game playing, expert systems and prolog.		

Units	Content	Hrs
Unit I	**Problems and search:** AI Techniques-Defining the problem as a State Space Search – Production Systems – Problem Characteristics – Production system Characteristics – Heuristic Search Techniques – Generate and test – Hill Climbing – Best-first Search – Problem Reduction – Constraint Satisfaction – Mean-Ends Analysis.	15
Unit II	**Knowledge Representation**: Representations and Mappings- Approaches to Knowledge Representation – Issues in knowledge representation – Representing simple Facts in Logic – Representing Instance and Isa Relationships- Procedural versus Declarative Knowledge – Logic Programming – Forward versus Backward reasoning.	16
Unit III	**Semantic Nets:** Frames - Conceptual Dependency - Game Playing – Overview – The minimax search procedure – Adding Alpha-Beta cutoffs.	15
Unit IV	**Expert System :** Definition – Characteristics of Expert System – Architecture & Description of Modules – Backward Chaining – Knowledge Acquisition facility. Knowledge Engineering – Expert System Life Cycles – Expert System Tools.	16
Unit V	**Prolog: The** Introduction-Converting English to prolog facts and rules-goals-Terminology-Variables-Control structures-Arithmetic operators-Matching in prolog-Backtracking-cuts-Recursion-Lists-Dynamic Databases-I/O Streams-Some aspects specific to LPA Prolog.	16
	Total Contact Hrs.	78
Text Books:	1. Elaine Rich, Kevin Knight, (2009), *Artificial Intelligence*, 3rd edition, Tata McGraw Hill Publications.	
Reference Books:	1. Stuart Russell, Peter Norvig, (2009), *Artificial Intelligence: A Modern Approach,* 3rd Edition, Pearson New International Edition. 2. Er. Rajiv Chopra, (2005), *Artificial Intelligence: A Practical Approach*, 1st Edition, S. Chand Publications.	

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Name	Signature	Name with Signature		
C.R. Durga Devi				
K. Vijayakumar				

Department	Information Technology		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UIT27	**Title:** Major Elective – III "GRID AND CLOUD COMPUTING"	**Semester:** VI	
Hrs/Week:	6	**Credit:** 5	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of grid and cloud computing. They learn the grid anatomy, OGSA, OGSI, Cloud Types of services, usage of cloud computing.		
Units	**Content**		**Hrs**
Unit I	**Grid Computing:** Introduction to Grid Computing - The Grid Computing Anatomy - The Grid Computing Road map. **Merging the Grid Services Architecture with the Web Services Architecture.**		15
Unit II	**Open Grid Services Architecture (OGSA):** Sample Use Cases that drive the OGSA – The OGSA Platform Components – Open Grid Services Infrastructure (OGSI) – OGSA Basic Services.		15
Unit III	**Introduction to Cloud Computing:** History of Cloud Computing –How Cloud Computing works-Companies in the Cloud Computing Today. **Computing in the Cloud:** The Pros and Cons of Cloud Computing-Benefits of Cloud Computing. Developing Cloud Services: Web Based Application – Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service – Platform as a Service – Web Services – On-Demand computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2- Google App Engine – IBM Clouds.		16
Unit IV	**Cloud Computing for Everyone:** Centralizing Email communications – collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for the Corporation. **Using Cloud Services**: Collaborating on Calendars, Schedules and Task Management – Exploring Online Scheduling Applications – Exploring Online Planning and Task Management.		16
Unit V	**Using Cloud Services**: Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Databases – Storing and Sharing Files. **Outside Cloud:** Other ways to Collaborate Online-Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis.		16
	Total Contact Hrs		**78**
Text Books:	1. Joshy Joseph & Criag Fellenstein. (2009). *Grid Computing*, PHI, PTR. 2. Michael Miller. (2009). *Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online*, Que Publishing.		
Reference Books:	1. Jose C.Cunha, Omer F.Rana (Eds). (2006). *Grid Computing*, Springer International Edition. 2. Anthony T. Velte and others. (2011). *Cloud Computing.* TATA Mc-Graw Hill Publications, New Delhi.		

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C.R.DURGA DEVI				
V. PRABAVATHI				

Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code: 13UIT28	**Title:** Core Lab. - VIII ("Graphics & Multimedia")	**Semester: VI**
Hrs/Week:	5	**Credit:** 2
Objectives	On successful completion of this subject the students should have programming knowledge about various algorithms of computer graphics, new innovations in multimedia by using flash.	

	Content	Hrs
	Sample Program List **Pre Model** 1. Implementation of DDA algorithm for line drawing. 2. Implementation of Bresenham's algorithm for line drawing. 3. Implementation of Mid Point circle algorithm. 4. Implementation of Translation, Scaling, and Rotation transformations. 5. Solar System Animation 6. Butterfly Animation 7. Raining Animation **Model** 1. Implementation of Cohen-Sutherland line clipping algorithm. 2. Drawing a globe using circle and ellipse algorithm. 3. Creating a Bar Chart. 4. Simulate the bouncing of a ball within four walls. 5. Flag Hoisting Animation 6. Aquarium Animation 7. Own animation	65

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K. Vijayakumar				
C.R. Durgadevi				

Department	Information Technology	
Course	B.Sc.,	**Effective from the year:** 2013-2014
Subject Code 13UIT29	**Title:** Core Lab. -IX - Industrial Oriented Practical	**Semester:** VI
Hrs/Week:	5	**Credit:** 3
Objectives	To learn depth knowledge about tools used in Software Development, Web Designing & Web Technologies. To understand the usage of front end and back end tools.	

	Content	Hrs
	Using only the following Elective Tools **Front end tools:** 1. VB 2. Java 3. XML 4. DHTML 5. ASP 6. JSP 7. PHP 8. VB.net 9. ASP.net 10. C# **Back end tools:** 1. MySQL 2. Oracle 3. MS Access 2007 4. SQL Server 2000 and Above	**65**

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V. Prabavathi				
C.R. Durgadevi				

Department	**Information Technology**		
Course	B.Sc.,	**Effective from the year:** 2013-2014	
Subject Code: 13UITSA4	**Title:** Skill Based Elective – IV. **Information Security.**	**Semester:** VI	
Hrs/Week:	1	**Credit:** 2	
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of network security, cryptography, substitution techniques, encryption, decryption, etc.,		
Units	**Content**		**Hrs**
Unit I	Introduction-The need for security		2
Unit II	Attacks on Computer and Security - Security Approaches		4
Unit III	Cryptography : Concepts and Techniques - Introduction-Plain text and Cipher text		3
Unit IV	Substitution Techniques - Transposition Techniques		2
Unit V	Encryption and Decryption		2
	Total Contact Hrs		**13**
Text Books:	1. Atul Kahate. (2009). *Cryptography and Network Security*, Second Edition.		
Reference Books:	2. Course materials from Internet.		

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C.R. Durgadevi				
V. Prabavathi				

Department	Information Technology		
Course	B.Sc.	**Effective from the year:** 2013-2014	
Subject Code: 13UITSB4	**Title:** Skill Based Elective – IV. Hardware & Networking	**Semester:** VI	
Hrs/Week:	1	**Credit:**	2
Objectives	On successful completion of this subject the students should have: - Understanding various concepts of processors, input output hardware, various communication channels, networks with their types, etc.,		
Units	**Content**		**Hrs**
Unit I	**Processors:** Microchips, Miniaturization and Mobility - CPU and Main Memory - Microcomputer System Unit.		2
Unit II	**Input and Output Hardware:** Input Hardware - Keyboard Input- Pointing Devices - Output Hardware - Display Screens.		3
Unit III	**Communication Channels:** Electromagnetic Spectrum - Twisted Pair - Coaxial Cable - Fiber Optic Cable – Microwave and Satellite Systems - Wireless Communications - Next Generation Wireless Communications.		4
Unit IV	**Communication Networks:** Types of Networks - Network Operating System - Host and Node - Servers and Clients – Advantages of Networks.		2
Unit V	**Local Networks:** N/W Types - Types of LAN's – Components – Topology - Impact of LAN.		2
	Total Contact Hrs		**13**
Text Books:	1. Williams, Sawyer and Hutchinson. (2001). *Using Information Technology - A Practical Introduction to Computers & Communications.* 3rd Edition. Tata McGraw Hill.		
Reference Books:	1. Course Material from Internet.		

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R. Sekar				
K. Vijayakumar				