

**KONGUNADU ARTS AND SCIENCE COLLEGE [AUTONOMOUS]
COIMBATORE - 641 029
B.Sc COMPUTER TECHNOLOGY [B.Sc CT]**

CURRICULUM & SCHEME OF EXAMINATION UNDER CBCS

[APPLICABLE TO STUDENTS ADMITTED FROM THE ACADEMIC YEAR 2017-2018 & ONWARDS]

Semester	Part	Subject Code	Title of the Paper	Instruction Hours / Cycle	Exam. Marks			Duration of Exam(Hours)	Credits
					CIA	ESE	Total		
I	I	17TML1A1	Language I @	6	25	75	100	3	3
	II	15ENG101	English I	6	25	75	100	3	3
	III	17UCT101	C.P.1 C Programming	5	25	75	100	3	4
		17UCT1CL	C.Pr.1 C Programming Lab	5	40	60	100	3	2
		15UCT1A1	Allied 1 - Discrete Mathematics and Statistics	6	25	75	100	3	5
IV	15EVS101	Environmental Studies **	2	-	50	50	3	2	
II	I	17TML2A2	Language II @	6	25	75	100	3	3
	II	15ENG202	English II	6	25	75	100	3	3
	III	17UCT202	C.P.2 Digital Fundamentals and Computer Organization	4	25	75	100	3	4
		16UCT203	C.P.3 Object Oriented Programming with C++	3	25	75	100	3	4
		17UCT2CM	C.Pr.2 C++ Programming Lab	3	40	60	100	3	2
		15UCT2A2	Allied 2 - Operations Research	6	25	75	100	3	5
IV	15VED201	Value Based Education ** (Moral and Ethics)	2	-	50	50	3	2	
III	III	17UCT304	C.P.4 Operating Systems	5	25	75	100	3	4
		17UCT305	C.P.5 Data Structures and Analysis of Algorithms	5	25	75	100	3	4
		17UCT306	C.P.6 Java Programming	5	25	75	100	3	4
		16UCT3CN	C.Pr.3 Java Programming Lab	5	40	60	100	3	2
		16UCT3A3	Allied 3 - Business Accounting	6	25	75	100	3	5
	IV	17UCT3S1	Skill Based Subject 1 - Computer Installation & Servicing	2	25	75	100	3	3

		17TBT301/ 17TAT301/ 15UHR3N1	Basic Tamil*/Advanced Tamil**/(or) Non Major Elective I **	2	-	75	75	3	2
IV	III	17UCT407	C.P.7 Relational Database Management Systems	5	25	75	100	3	4
		17UCT408	C.P.8 .NET Framework	4	25	75	100	3	4
		17UCT409	C.P.9 Computer Networks	5	25	75	100	3	4
		17UCT4CO	C.Pr.4.NET Framework and Oracle Lab	6	40	60	100	3	2
		17UCT4A4	Allied 4 - Microprocessors, PC Hardware & Interfacing	6	25	75	100	3	5
	IV	17UCT4SL	Skill Based Subject 2 - Computer Installation & Servicing Lab	2	40	60	100	3	3
		17TBT402/ 17TAT402/ 15UWR4N2	Basic Tamil*/Advanced Tamil**/(or) Non Major Elective II**	2	-	75	75	3	2
V	III	17UCT510	C.P.10 Software Engineering and Testing	5	25	75	100	3	5
		17UCT511	C.P.11 Mobile Computing	5	25	75	100	3	5
		15UCT512	C.P.12 Data Mining and Warehousing	6	25	75	100	3	5
		17UCT5E1	Elective Paper - I	6	25	75	100	3	5
		15UCT5CP	C.Pr.5 Software Testing Lab	6	40	60	100	3	2
	IV	16UCT5SM	Skill Based Subject 3 - Multimedia Lab I	2	40	60	100	3	3
		15UCT5SP	Summer Project	Grade ****					
VI	III	17UCT613	C.P.13 PHP	6	25	75	100	3	5
		17UCT614	C.P.14 Information Security	6	25	75	100	3	5
		17UCT6E2	Elective Paper - II	6	25	75	100	3	5
		17UCT6CQ	C.Pr.6 Programming Lab-PHP	6	40	60	100	3	2
		15UCT6Z1	Project Work & Viva – Voce***	4	20	80	100	3	4
	IV	16UCT6SN	Skill Based Subject 4 - Multimedia Lab II	2	40	60	100	3	3
	V	15NCC/NSS/ YRC/ PYE101	Extension Activities*	-	50	-	50	-	1

@Tamil/Hindi/French/Malayalam/Sanskrit-
17TML/15HIN/15FRN/15MLM/15SAN101-202

* No End-of-Semester Examinations. Only Continuous Internal Assessment (CIA)

** No Continuous Internal Assessment (CIA). Only End-of-Semester Examinations (ESE).

*** Project Report- 60 Marks; Viva-Voce-20 Marks; Internal-20 Marks.

**** Summer Project : Students should do the summer project at the end of fourth semester during summer vacation and submitted the report in the fifth semester. The Project report will be evaluated for 100 marks along with the internal viva voce by the respective internal project guide. According to their marks, the grades will be awarded as given below.

Marks %	Grade
85-100	O
70-84	D
60-69	A
50-59	B
40-49	C
<40	U (Reappear)

Major Elective Papers

(Two papers are to be chosen from the following four papers)

1. Network Security
2. Cloud Computing
3. System Software
4. Client/Server Techniques

Non-Major Elective Papers

1. Human Rights
2. Women's Rights

Tally Table:

S.No.	PART	SUBJECT	MARKS	TOTAL MARKS	CREDITS
1.	Part I	Language - Tamil/Hindi/French/Malayalam/Sanskrit	200	200	6
2.	Part II	English	200	200	6
3.	Part III	Core- Theory/Practical/Project	2100	2700	77
		Allied	400		20
		Major Electives	200		10
4.	Part IV	Basic Tamil / Advanced Tamil (or) Non Major Elective	150	650	4
		Skill Based Subjects	400		12
		Environmental Studies	50		2
		Value Education	50		2
5.	Part V	Extension Activities (NSS / NCC / YRC / PYE)	50	50	1
TOTAL				3800	140

Note:

CBCS – Choice Based Credit System **NCC** – National Cadet Corps .

NSS – National Service Scheme **YRC** – Youth Red Cross

ESE – End Semester Examination **CIA** – Continuous Internal Assessment

25% CIA is applicable to all theory subjects except JOC and COP Courses, which are considered as extra credit courses.

CIA Theory (25 Marks)	Practical		Project	
	CIA Practical (40 Marks)	ESE Practical (60 Marks)	CIA (20 Marks)	ESE# (80 Marks)
CIA Exam -15	CIA Practical Exam -25	Experiment -50	Project Review -15	Project Report Present - 60
Assignment-5	Observation -10	Record -10	Attendance -5	Viva-Voce -20
Attendance-5	Attendance -5			

Project Report and Viva-Voce will be evaluated jointly by both the project guide and an external examiner.

UCT 1

SEMESTER I

17UCT101

C.P.1 C PROGRAMMING

Credit Points: 4

Total Hrs.:75 Hrs.

Objective:

After completion of this paper, the students can grasp the knowledge in

- Basic Programming Languages
- Understanding the concept of C Program.
- Familiarize the basic syntax and semantics of C Language
- Understanding the concept of Array, Pointer and Graphics

UNIT-I

15 Hours

Computer System: What is Computer? – Computer Organization- Classification of Computers – What is Programming? – Structured Programming.

Overview of C : History of C – Importance of C- Sample programs – Basic Structure of C programs – Programming style. Constants, Variables and Data types: Character set – C Tokens – Keywords and Identifiers – Constants – Variables – Data types – Operators and Expressions– Type conversions in Expressions – Operator precedence and Associativity. Managing Input and Output operations: Reading and Writing Character-Formatted Input – Formatted Output.

UNIT-II

15 Hours

Decision making and Branching: Decision making with if statement – Simple if statement – The ifelse statement-Nested If-Else-If Ladder – The Switch statement. looping: The while statement – The do statement – The for statement – **Jumps in loops***.

UNIT-III

15 Hours

Arrays : Introduction – one dimensional Arrays – Declaration of one dimensional Arrays – Initialization of one dimensional Arrays – Two dimensional Arrays – Initializing Two dimensional Arrays – Multidimensional Arrays. Character Arrays and Strings: String handling functions.

User defined functions: Definition of Functions – Function Declaration – Category of Functions – No Arguments and No Return values – Arguments

UCT 2

but No Return values – Arguments with Return values – No Arguments but Returns a value- Functions that Return Multiple Values- Recursion – Passing Arrays to Functions – The Scope, Visibility and Lifetime of Variables.

UNIT-IV

15 Hours

Pointers : Understanding pointers –Accessing the Address of the Variable- Declaring pointer variables – Pointer and Arrays- Pointers and Character strings – Array of pointers –Pointers as Function Arguments- Functions returning pointers.

UNIT-V

15 Hours

Structures and Unions: Introduction – Defining a Structure – Declaring Structure variables – Structure Initialization –Array of Structures-Arrays with in Structures-Structures with in Structures– **Unions***.

File Management in C: Defining and Opening a File – Closing a File – Input/Output Operations on Files – Command Line Arguments.

***Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. R.B. Patel, Pream Nath, “ Fundamentals of Computing and C Programming, India Tech Publishing Company PVT.Ltd, 2006 **(UNIT-I Upto Structured Programming.)**
2. E. Balagurusamy , “Programming in ANSI C ” , Tata McGraw Hill, Fifth Edition -2011

REFERENCE BOOKS:

1. Ashok N Kamthane , “Programming with Ansi and Turbo C”, Pearson Education Pub,2007.
2. P.J.Deitel and H.M.Deitel, “C How to Program”, Tata McGraw Hill ,Fifth Edition, -2008.

UCT 3

SEMESTER I

17UCT1CL

C.Pr.1 C PROGRAMMING LAB

Credit Points: 2

Total Hrs.:75 Hrs.

1. Write a Program to find the roots of a Quadratic Equation.
2. Write a program to find the greatest and smallest number from set of numbers.
3. Write a program to find the sum, average, standard deviation from set of numbers.
4. Write a program to find the given string is a palindrome or not.
5. Write a program to perform String functions
6. Arrange a set of numbers in ascending order using bubble sort.
7. Write a program to convert decimal to binary using recursive function.
8. Write a C program to perform following operation
 - ✓ Read two integer arrays with unsorted elements
 - ✓ Sort them into ascending order
 - ✓ Merge the sorted arrays and print the elementsUsing function to carry out above tasks.
9. Write a generalized program to perform matrix operation.
10. Write a program to print the student's mark statement using Structure
11. Write a program to manipulate array elements using Pointers.
12. Write a program to remove vowels in a given string using pointers.
13. Write a program, which takes a file as command line argument, and copy it to another file. At the end of the second, file writes
 - ✓ Number of characters
 - ✓ Number of words
 - ✓ Number of lines

UCT 4

Guidelines to the distribution of marks for Practical Examinations:

Two Questions will be given for each student. (3 Hours/60 marks)

Record: 10 Marks

Particulars	Program1 (Marks)	Program2 (Marks)
Algorithm	5	5
Program Coding & Execution	15	15
Modifications	5	5

UCT 5

SEMESTER II

17UCT202

C.P.2 DIGITAL FUNDAMENTALS AND COMPUTER ORGANIZATION

Credit Points: 4

Total Hrs.: 60 Hrs.

Objective:

- The students should get the Knowledge about the Digital Circuit, Memory Concept and Number System
- To learn the concept of Multiplexing, Flip-flops and Registers
- Familiarize with basic building blocks of Digital Systems.

UNIT I

12 Hours

Digital Computer And Digital Systems - Binary Numbers - Number Base Conversion - Octal and Hexa Decimal Numbers – Complements-1's and 2's complements- Binary subtraction - Code's- BCD, GRAY, Excess of 3 codes, Error Correcting Codes

UNIT II

12 Hours

Boolean Algebra And Logic Gates: Basic Definitions - Boolean Functions - Digital Logic Gates - simplifications - NAND and NOR implementation - Product of Sums - Sum of Products – The k-map – Don't Care conditions (up to four variables).

UNIT III

12 Hours

Introduction - Adders – **Subtractors***-Decoder-Encoder- Multiplexers – De- Multiplexers. Flip Flops: - Introduction – RS, JK, D - Flip Flops-Design counters – Ripple counters -Registers –Register with parallel Load- Shift Registers-Serial Transfer.

UNIT IV

12 Hours

Programming the Basic Computer: Introduction-Machine Language – Assembly Language.

Central Processing Unit(CPU) : Introduction – General Register Organization – Control Word- Instruction Format – Addressing Modes – Status Bit Condition.

UCT 6

UNIT V

12 Hours

Peripheral Devices - I/O interface - DMA – IOP- Communication.

Memory: **RAM and ROM*** -Associative Memory- Cache Memory – Virtual Memory.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. Morris Mano ,“Digital Logic and Computer Design” ,Tata McGraw Hill, Thirteenth impression ,2011 **(UNIT I, II and III)**
2. Morris Mano ,“Computer System Architecture” ,Tata McGraw Hill, Eighth Impression 2011. **(UNIT IV,V)**

REFERENCE BOOKS:

1. Thomas C. Bartee, “Digital Computer Fundamentals”, McGraw Hill International Edition Sixth Edition, Thirteenth reprint , 2008.
2. John P Hayes, “Computer Architecture and Organization ”, McGraw Hill International ,Third Edition , 1998.
3. Leach Malvnio, “Digital Principles & Application”, Tata McGraw Hill, Fifth Edition, 2005.

C.P.3 OBJECT ORIENTED PROGRAMMING WITH C++

Credit Points: 4

Total Hrs.:45 Hrs.

Objective:

- To know the Object Oriented Programming Language concepts
- Idea about functions, Overloading and Constructors
- To develop the programming knowledge in pointers and files

UNIT-I

9 Hours

Principles of OOP: Software Evolution-Procedure versus oops-Basic concepts of oops-Benefits of oops-Object Oriented Languages-Applications of oops. Beginning with C++: History-Simple C++ Program-Structure of C++ Program. Tokens, Data types, Reference Variables-Typecasting-Operators-Control Structures. Functions: Function Prototyping-Call by reference-Return by reference-Inline function-Default arguments-Function Overloading.

UNIT-II

9 Hours

Classes & Objects: Specifying a class-Defining member function-Member allocation for objects-Static member-Array of objects-Object as function arguments-friend functions-returning objects-pointers to members. Constructors & Destructors: Constructor and its types-**Destructors***.

UNIT-III

9 Hours

Operator Overloading: Definition-Overloading unary and binary operators-Manipulation of strings using operators-Rules for operator overloading-Type conversions. Inheritance: Introduction-Defining derived classes-Types of inheritance-Virtual base classes-Abstract-Constructors in derived classes.

UCT 8

UNIT-IV

9 Hours

Pointers: Declaration-Pointers to objects-Pointers to derived class-this pointer-Polymorphism & virtual functions. Managing console i/o operations-Formatted & Unformatted i/o – **Manipulators***.

UNIT –V

9 Hours

Files:Classes for file stream operations-Opening and closing a file-Detecting eof-Manipulation of file pointers-Sequential i/o operations-Command line arguments.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. E.Balagurusamy ,” Object Oriented Programming with C++ ”, Tata McGraw Hill, Fifth Edition, Reprint 2012.

REFERENCE BOOKS:

1. Ashok N Kamthane, ”Object Oriented Programming with ANSI and Turbo C++”, Pearson Education Publications, 2003.
2. Yashavant Kanetkar,”Introduction to Object Oriented Programming and C++”, BPB Publications, First Edition, 2004.

UCT 9

SEMESTER II

17UCT2CM

C.Pr.2 C++ PROGRAMMING LAB

Credit Points: 2

Total Hrs.:45 Hrs.

1. Write a C++ program to perform Friend function concept.
2. Write a C++ program to perform arithmetical operations using Constructor.
- 3 .Write a C++ program to perform Banking operation using constructor.
4. Write a C++ program to perform function overloading and this pointer
5. Write a C++ program to perform Operator Overloading concept.
6. Write a C++ program to perform string manipulation operations
7. Write a C++ program to prepare employee pay slip using console I/O.
8. Write a C++ program to find Area and Perimeter using Virtual function and Inheritance concept.
- 9 Write a program to perform file manipulations.
10. Write a program using Command Line Arguments.

Guidelines to the distribution of marks for Practical Examinations:

Two Questions will be given for each student. (3 Hours/60 marks)

Record: 10 marks

Particulars	Program 1 (Marks)	Program 2 (Marks)
Algorithm	5	5
Program Coding & Execution	15	15
Modifications	5	5

UCT 10

SEMESTER III

17UCT304

C.P.4 OPERATING SYSTEMS

Credit Points: 4

Total Hrs.:75 Hrs.

Objective:

Students should get the knowledge in

- Basic concepts of Operating Systems, Storage Management and Processes.
- Windows and Linux Operating Systems.

UNIT-I

15 Hours

Introduction & process Concept: Definition of DOS – Early History-History of DOS & UNIX OS-Definition Of Process-Process states-process states transition -Interrupt processing -interrupt classes-context switching-semaphores-deadlock & indefinite postponement.

UNIT-II

15 Hours

Storage Management Real Storage: Real storage management strategies - Contiguous Vs non-contiguous storage allocation - Single User Contiguous Storage allocation-Fixed partition multiprogramming - Variable partition multiprogramming, Multiprogramming with storage swapping.

Virtual storage: Virtual storage management strategies- Page replacement strategies - Working sets - Demand paging - Page size.

UNIT-III

15 Hours

Processor Management Job and Processor Scheduling: Preemptive Vs Non-preemptive scheduling - Priorities - Deadline scheduling – **FIFO*** - RR - Quantum size – **SJF*** - SRT. Distributed computing: Classification of sequential and parallel processing - Array processors - Dataflow computers - Multiprocessing - Fault Tolerance.

UCT 11

UNIT-IV

15 Hours

Device and Information Management Disk Performance Optimization: Operation of moving head disk storage – Need for disk scheduling – Seek Optimization – FCFS – SSTF – SCAN – RAM Disks – Optical Disks. File and database systems: File System – Functions – Organization – Allocating and freeing space – File descriptor – Access control matrix.

UNIT-V

15 Hours

Case Studies: Android- WAP-Open handset alliance-Android platform-Configure develop environment-SDK license agreement-Exploring the core android application framework-Android emulator-Testing your development environment-Building your first android application-Create and configure-Core files and directories-Launch configuration-Running.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. H.M.Deitel, “Operating Systems”, Pearson Education Publication, Second Edition, 2003. **(Unit I to Unit IV)**
- 2.Lauren Darcey,Shane Conder, “Android –Wireless Application Development(Volume-I)”, Pearson , Third Edition, 2012 . **(Unit V)**

REFERENCE BOOKS:

1. Achyut S Godbole, “Operating Systems”, Tata MCGraw Hill Publication-2006.
2. Jorg H.Kloss, ”Android Apps with APP Inventor” ,Pearson,2013.

UCT 12

SEMESTER III

17UCT305

C.P.5 DATA STRUCTURES AND ANALYSIS OF ALGORITHMS

Credit Points: 4

Total Hrs :75 Hrs.

Objective:

- Describe and implement the advanced data structures.
- Demonstrate Knowledge in different methods for representing a graph.
- Analyze the asymptotic performance of algorithms.
- Apply important algorithmic design paradigms and methods of analysis.

UNIT-I

15 Hours

Introduction-Data structure-definition-How to create a program-How to analyze a program-Arrays-Order List –Sparse Matrices-Representation of Arrays-Stacks and Queues- Fundamentals- Evaluation Expression-Multiple Stacks and Queues.

UNIT-II

15 Hours

Linked Lists-Singly Linked List-Linked Stacks and Queues-Storage pool-Polynomial Addition-Doubly Linked Lists Tress: Basic Terminology-Binary Trees-binary Tree representation-Binary Tree Traversal

UNIT-III

15 Hours

Graphs: Terminology and representation-Introduction –Definition and Terminology-Graph Representation – Traversals-Connected components and spanning Trees -Shortest path-Transitive Closure

Internal Sorting- Insertion sort - Quick sort - Merge sort - Heap sort –Radix sort. External Sorting-sorting with Tapes, Sorting with Disks.

UCT 13

UNIT-IV

15 Hours

Symbol Tables-Static tree tables-Dynamic tree tables-Hash tables- Hashing Functions-Overflow Handling.

Files: Files-Queries– Sequential organization - Index Techniques – File organization

UNIT-V

15 Hours

Introduction: Algorithms – Analysis of algorithms – Best case and worst case complexities, Analysis of some algorithms using simple data structures, amortized time complexity. Dynamic programming: The General Method – Traveling sales Person problem.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. Ellis Horowitz, Sartaj Shani, “Fundamentals of Data Structures”, Galgotia Publication Edition 1, 1994 (**Unit I to Unit IV**)

2. Ellis Horowitz, Sartaj Sahni and Sanguthevar Rajasekaran, ” Fundamentals of Computer Algorithms”, 2/e Hyderabad Universities Press (India) Private Limited, (2008) (**Unit V**)

REFERENCE BOOK:

1. Robert Kruse, C.L, Jondo Bruce Leung , “Data Structures and Program Design in C ” ,Pearson Edition Asia, Second Edition,1999.

UCT 14

SEMESTER III

17UCT306

C.P.6 JAVA PROGRAMMING

Credit Points: 4

Total Hrs :75 Hrs.

Objective:

- Familiarize the concept of standard application and web based application
- To develop their programming skill
- Completion of this subject students should know all the basic java concepts

UNIT-I

15 Hours

JAVA Revolution: OOPS Concept- History – Features – How Java differs from C and C++ - Java and Internet. Overview of Java Language: Introduction – Simple Java program – Structure – java Tokens – Statements-Java virtual Machine- Constants- variables – Data types – Operators and Expressions.

UNIT-II

15 Hours

Flow Control : Branching – Looping*. Classes : Introduction – Object References- Instance Variables – the New Operator – Dot Operator – Method Declaration – Method Calling – Constructor- Method Overloading – this keyword – Final – Finalize – Static.

UNIT-III

15 Hours

Arrays- Strings – String Tokenizer.

Inheritance: Introduction-Types of Inheritance. Interfaces: Multiple Inheritances. Packages: Putting classes together – Multi Threaded Programming- Managing Errors and Exceptions

UNIT-IV

15 Hours

Applet programming–Graphics programming-Color-Font.

Files: Introduction – Concept of Streams – Stream classes –I/O classes- File class – I/O Exceptions – Reading/Writing characters /Bytes- Handling primitive data types – Random Access Files.

UCT 15

UNIT-V

15 Hours

AWT – Introduction – AWTClasses – Container – Panel – Frame - Canvas- Labels – PushButtons – CheckBoxs – ChoiceList – List – ScrollBar - TextArea-TextField-MenuBar.

Event Handling-ActionEvent-KeyEvent-MouseEvent-MouseWheelEvent-ItemEvent.

Interface-ItemListener-KeyListener-MouseListener-MouseMotionListener-ActionListener-MouseWheelListener.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. E.Balagurusamy, “Programming with Java – A Primer”, Tata McGrawHill, Fourth Edition,2010. **(Unit I, III and IV)**
2. Patrick Naughton, “Java Hand Book”, TataMCGraw Hill 2006 . **(Unit II and V)**

REFERENCE BOOKS:

1. Patrick Naughton and Herbert Schildt, “The Complete Reference Java 2”, Tata MCGraw Hill Publication, Fifth Edition-2008.
2. C.Xavier, ‘Programming with Java 2’, Scitech Publication, First Edition 2006.

UCT 16

SEMESTER III

16UCT3CN

C.Pr.3 JAVA PROGRAMMING LAB

Credit Points: 2

Total Hrs.:75 Hrs.

1. Write a java program to perform string functions using constructor and user defined package.
2. Write a java program to prepare telephone bill using multiple inheritance.
3. Write a program to perform thread concept.
4. Write a java program to illustrate String Tokenizer concept
5. Write a program to perform Stack Operation .
6. Write a program to perform Queue Operation.
7. Write a program to implement binary search to find the particular name in a list of names.
8. Write a program to perform predefined exception and user defined exception.
9. Write a program to create an applet and add the two integer values.
10. Write a program to perform inventory control using AWT components.
11. Write a java program to copy a content (byte) from one file to another.
12. Write a java program to perform MouseEvent operations
13. Write a Java program to demonstrate the multiple selection list box.
14. Write Java program to create a menu bar and pull down menus.
15. Write a program to move different shapes (Circle, Ellipse, Square, Rectangle) according to the arrow key pressed.

Guidelines to the distribution of marks for practical Examinations:

Two Questions will be given for each student. (3 Hours/60 marks)

Record: 10 marks

Particulars	Program1 (Marks)	Program2 (Marks)
Algorithm	5	5
Program Coding & Execution	15	15
Modifications	5	5

UCT 17

SEMESTER IV 17UCT407 C.P.7 RELATIONAL DATABASE MANAGEMENT SYSTEMS

Credit Points: 4

Total Hrs.:75 Hrs.

Objective:

- This subject should develop the knowledge in various Database concepts, queries, normalization and reports.
- After completion of this subject student themselves to construct new database.

UNIT-I

15 Hours

Introduction: Purpose of Database Systems - View of Data - Data Models - Database Languages - Database Administrator - Database Users. Entity Relationship Model: Basic concepts – keys-Mapping Cardinalities - Entity Relationship Diagram, Weak Entity sets, E-R Features - Specialization, Generalization - Relational Model: Structure of Relational Databases - Relational Algebra.

UNIT-II

15 Hours

Interactive SQL : Invoking SQL * Plus- data definition- data manipulation in DBMS – The oracle data types –DML and DDL statements-Data constraints- arithmetic, logical operators- oracle functions- grouping data from tables- manipulating dates- union, intersect and minus clause-Granting permissions- Revoking permissions- Codd’s Rules.

UNIT-III

15 Hours

PL/SQL: Introduction, PL/SQL syntax, understanding PL/SQL block structure, oracle transactions, cursors, stored procedures, stored functions, database triggers – **Creating Default Tabular Report***.

UCT 18

UNIT-IV

15 Hours

SQL: **Set Operations***- Nested Sub queries - Derived Relations - Views - Joined Relations. Integrity Constraints: Domain Constraints- Referential Integrity - Assertions.

UNIT-V

15 Hours

Functional Dependencies. Relational Database Design: Pitfalls – Normalization-First Normal Form, Second Normal Form, Third Normal Form and BCNF.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. Abraham Silberschatz, Henry F. Korth, S. Sudharshan, “Database System Concepts”, Tata McGraw Hill , Fifth Edition –2006. **(Unit I, IV, V)**
2. Ivan Bayross, “Commercial application development using ORACLE developer 2000” First Edition, 2007 **(Unit II,III)**

REFERENCE BOOKS:

1. Bipin.C.Desai, “An Introduction to database systems”, Galgotia Publication, First Edition 2000
2. Ivan Bay Ross, “Oracle 7 The Complete Reference”, BPB Publications, First Edition, Chennai.

UCT 19

SEMESTER IV

17UCT408

C.P.8 .NET FRAMEWORK

Credit Points: 4

Total Hrs.:60 Hrs.

Objective:

To familiarize the concept of .NET framework and to develop their .NET programming skill

UNIT-I

18 Hours

Essential Visual Basic – Upgrading from Visual Basic - .Net Frame work and the CLR –IDE – Building VB.Net Applications. Operations – Conditionals and Loops – Procedures, Scope and Exception Handling.

UNIT-II

18 Hours

Windows Forms – Adding Controls – Handling Events – Creating MDI applications – Textboxes, Rich Text boxes, Labels – Buttons, Check boxes, Radio buttons, panels and Group boxes – List box, **Checked list box***, Combo box and Picture boxes.

UNIT-III

18 Hours

Windows Forms – Scroll bars, Splitters, Track Bars, Pickers, Notify Icons, Tool tips and Timers. Menus – Built in Dialog Boxes – Image list, Tree and List view, Toolbars, Status bars and progress bars and tabbed controls.

UNIT-IV

18 Hours

Web forms – Buttons, Test boxes, Labels, Literals, Place Holders, Check boxes, Radio buttons, Tables, Panels, Images, Image buttons, List boxes, Drop down lists, Hyperlinks and link buttons, **HTML controls***.

UCT 20

UNIT-V

18 Hours

Data Access with ADO.net – binding controls to database – database access with web applications – creating window services, web services and deploying applications.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Steven Holzner, “Visual Basic.NET Black Book”, Dream Tech, First Edition, 2005.

REFERENCE BOOKS:

1. Evangelos Petroustes, “Mastering Visual Basic.NET”, BPB Publications, First Edition, 2002.
2. Bill Evjen Beres, et al. “Visual Basic.NET programming Bible”, Wiley – DreamTech, Reprint, 2002.

UCT 21

SEMESTER IV

17UCT409

C.P.9 COMPUTER NETWORKS

Credit Points: 4

Total Hrs.:75 Hrs.

Objective:

- Knowledge about the Network Communication, Routing Algorithm and Network Security

UNIT-I

12 Hours

Introduction: Uses of computer networks-Network Hardware – Network Software – Reference Models.

UNIT-II

15 Hours

The Physical layer: Guided transmission media – Communication satellites – The Public Switched telephone network: Structure of the telephone system – The local loop : modems, wireless local loops – Switching-**Cable Television**-Community Antenna Television-Internet Over Cable.

UNIT-III

16 Hours

The Data link layer: **Data link layer design issues*** -The Medium access control sub layer: The channel allocation problem – Multiple access protocols: ALOHA-Carrier sense multiple access protocols, collision-free protocols, Limited-Contention protocols – Data link layer switching: repeaters, hubs, bridges, switches, routers and **gateways***.

UNIT-IV

16 Hours

The Network layer: Network layer design issues – Routing algorithms: The shortest path routing, distance vector routing, routing for mobile hosts, link state routing, hierarchical routing, broadcast routing and multicast routing.
The Transport layer: The Transport service: Services provided to the upper layers, transport service primitives, Berkeley sockets – Elements of Transport protocols.

UCT 22

UNIT-V

16 Hours

The Internet Transport Protocol: UDP-Introduction to UDP-Remote Procedure Calls-TCP-Introduction to TCP- TCP Service Model – TCP Segment Header.

The Application layer: DNS– Electronic mail- Architecture and services-User agent.

Network Security: Cryptography – DES – RSA.

Digital Signatures: Symmetric-Key Signatures, Public-Key signatures.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Andrew S. Tanenbaum, “Computer Networks”, Pearson Education Publication Fourth Edition, -2003.

REFERENCE BOOKS:

1. Behrouz A. Forouzan, “Data Communications And Network”, Tata McGraw Hill, Second Edition,2003.

2. William A shay, “Understanding data communications and networks”, Vikas publishers ,Second Edition, 2001.

C.Pr.4.NET FRAMEWORK AND ORACLE LAB

Credit Points: 2

Total Hrs.:90 Hrs.

. NET FRAMEWORK

1. Perform Matrix Multiplication using Arrays Concept in Console Application
2. Program for various formatting font applications in Windows Application.
3. Program to simulate a simple calculator in Windows Application.
4. Program to simulate a digital clock with reset option in Windows Application.
5. Program for a notepad application in Windows Application.
6. Program to maintain student details in Windows Application.
7. Program to maintain sales details in Windows Application.
8. Design a website to display your bio-data using ASP.Net.
9. Design a website with login control using ASP.net
10. Develop a Simple Project for Hotel Management using VB.NET as front end and ORACLE as back end and create a Crystal report.

ORACLE

11. Create a student mark list and do the following
 - a) Alter the table to add total and average fields with required size.
 - b) Modify to increase the total field size.
 - c) Calculate the total and average.
12. Create an employee table with the necessary fields and do the following
 - a) Display the employee details who are all getting salary above 15000.
 - b) Display the employee name and address who are all coming from city "Coimbatore" or "Chennai".
 - c) Display the employee name ,who are all coming from city "Coimbatore" and pin code 641029 or 641001.
 - d) Display the employee details in descending order based on name.

UCT 24

13. Create an item table with the necessary fields and do the following
 - a) Display the itemname strats with 'm'
 - b) Creation of reports using Column format.
 - c) Find the Maximum and minimum cost of an item.
 - d) To display the itemnames in upper case.
14. Create two tables in the name Employee_Personal and Employee_Salary using Primary and Foreign key concept and perform necessary operations.
15. Write a necessary queries to perform oracle built-in functions.
16. Write PL/SQL block to prepare electricity bill.
17. Write PL/SQL block:
 - a) Find the sum of individual number.
 - b).Find the given number is Armstrong number or not.
18. Create a Data base Triggers to check the validity of records.

Guidelines to the distribution of marks for practical Examinations:

Two Questions will be given for each student. (3 Hours/60 marks)

Record: 10 marks

Particulars	Program1 (Marks)	Program2 (Marks)
Algorithm	5	5
Program Coding & Execution	15	15
Modifications	5	5

UCT 25

SEMESTER V

17UCT510

C.P.10 SOFTWARE ENGINEERING AND TESTING

Credit Points: 6

Total Hrs.:75 Hrs.

Objective:

- Understand the basic concepts of Software Development Life Cycle.
- Familiarize the different models, testing and significant.

UNIT-I

15 Hours

Introduction – The evolving role of software – Software crisis – software myths – Software engineering technology – The software process – Software process models.

UNIT-II

15 Hours

Requirements engineering Tasks– Developing Use-Cases – Negotiating requirements – Validating requirements – Requirement analysis – Data modeling concepts – Flow oriented modeling .

UNIT-III

15 Hours

Desing engineering – Design concepts – Data Design – Performing user interface Design : The golden rules.

Types of testing: White box testing–static testing – structural testing – Challenges in white box testing

UNIT-IV

15 Hours

Black Box Testing: What, How to do Black box testing – Requirement based testing – Positive and Negative Testing – Boundary Value Analysis – Decision Tables – Equivalence partitioning – State Based or graphic Based Testing – Compatibility Testing – User Documentation – Domain Testing.

UCT 26

UNIT-V

15 Hours

Integrating Testing: Introduction - Integration Testing as a Type of Testing – Integration Testing as a phase Testing.

System and Acceptance Testing: Introduction – Functional Versus Non – Functional System Testing – Functional System Testing – Non - Functional System Testing - Acceptance Testing.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. Roger S Pressman, “Software Engineering”, TMH Publishers ,Sixth Edition, 2005. **(UNIT – I to UNIT – III)**
2. Srinivasan Desikan and Gopalaswamy Ramesh “Software Testing Principles and practices “ , Dorling Kindersely (India) Pvt Ltd., 2008, **(UNIT – IV , UNIT – V)**

REFERENCE BOOKS:

1. Watts S Humphrey , “A discipline for Software Engineering”, Pearson Education Publishers, First Edition, 2008.
2. Ian Somerville, “Software Engineering”, Seventh Edition, Pearson Education Pub,2007.

UCT 27

SEMESTER V

17UCT511

C.P.11 MOBILE COMPUTING

Credit Points: 5

Total Hrs.:75Hrs.

Objective:

- To grasp the knowledge about mobile generations and mobile computing techniques.

UNIT-I

15 Hours

Introduction: Mobility of bits and bytes, wireless- The beginning, mobile computing – Networks – Middleware and Gateways – Application and Services – Developing Mobile computing Applications – Security in Mobile Computing.

Mobile Computing Architecture: History of Computers – History of Internet – Internet – The ubiquitous network – Architecture for Mobile Computing– Three Tire

Architecture - Design consideration for Mobile Computing- Mobile Computing through Internet – Making existing Applications Mobile - Enabled.

UNIT-II

15 Hours

Mobile Computing through Telephony: Evolution of Telephony – Multiple Access Procedures - Mobile Computing through Telephone – Developing an IVR application – Voice XML – Telephony Application Programming Interface (TAPI)

Emerging Technologies: Introduction – Bluetooth- Radio Frequency Identification – Wireless broadband – Mobile IP- Internet Protocol Version 6(IPV6)- Java Card.

UNIT-III

15 Hours

Global system for Mobile Communication (GSM): Global system for Mobile Communication- GSM Architecture – GSM entities – Call routing in GSM, PLMN Interface – GSM Address Identifiers – Network aspects in GSM- GSM frequency allocation – Authentication and Security.

UCT 28

Short Message Service (SMS) : Mobile Computing over SMS - **Short Message Service***- Value added services through SMS – Accessing the SMS bearer.

UNIT – IV

15 Hours

General Packet Radio Service (GPRS) : Introduction – GPRS and packet data network – GPRS network architecture – GPRS network operations – Data services in GPRS – Applications for GPRS- limitations of GPRS – Billing and Charging in GPRS.

Wireless Application Protocol (WAP): Introduction – WAP – MMS- GPRS application.

UNIT- V

15 Hours

CDMA and 3G : Introduction – Spread spectrum technology – IS 95- CDMA versus GSM – Wireless data – Third generation network – Application on 3 G.

Wireless LAN : Introduction – Wireless LAN advantages – IEEE 802.11 standards – Wireless LAN architectures – Mobility in Wireless LAN – Deploying Wireless LAN – Mobile Ad-hoc network and sensor network – Wireless LAN Security – WiFi versus 3G.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Ashok K Talukder, Roopa R Yavagal, “Mobile Computing ”, Tata McGraw Hill Publishing Company Ltd, 2005.

REFERENCE BOOKS:

1. Jochen Schiller ,”Mobile Communication” Addison Wesley Pub, Second Edition, 2003.
2. Hansmann, Lothar Merk, Martin and Nicklous, Thomos stober, “Principles of mobile computing”, Second Edition, springer international edition.

C.P.12 DATA MINING AND WAREHOUSING

Credit Points: 5

Total Hrs.:90 Hrs.

Objective:

- To develop the knowledge about Data Warehousing, Data Mining and KDD process.
- To understand the different techniques in Data Mining.

UNIT I

18 Hours

Basic Data Mining Tasks -Data Mining Versus Knowledge Discovery in Databases -Data Mining Issues -Data Mining Matrices -Social Implications of Data Mining -Data Mining from Data Base Perspective.

UNIT II

18 Hours

Data Mining Techniques -a Statistical Perspective on data mining - Similarity Measures-Decision Trees -Neural Networks -Genetic Algorithms.

UNIT III

18 Hours

Classification: Introduction -Statistical -Based Algorithms -Distance Based Algorithms -**Decision Tree*** -Based Algorithms -Neural Network Based Algorithms -Rule Based Algorithms -Combining Techniques.

UNIT IV

18 Hours

Clustering: Introduction -Similarity and Distance Measures -Outliers- Hierarchical Algorithms- Association Rules: Introduction- Large Item Sets - Basic Algorithms -Parallel and Distributed Algorithms .

UCT 30

UNIT V

18 Hours

Delivery process: Introduction – Datawarehouse delivery method. System processes: Overview – typical process flow within a data warehouse – Extract and load process – clean and transform data – Backup and archive process – Query management process.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS :

1. Margaret H. Dunham , "Data Mining Introductory and Advanced Topics", Pearson Education, 2003. **(UNIT -I to UNIT -IV)**
2. Sam Anahory, Dennis murray , "Data warehouse in the real world – practical guide for building decision support system", Second Impression , 2007 **(UNIT -V)**.

REFERENCE BOOK:

1. Jiawei Han & Micheline Kamber, " Data Mining Concepts and Techniques", Academic Press, 2001

UCT 31

SEMESTER V

15UCT5CP

C.Pr.5 SOFTWARE TESTING LAB

Credit Points: 2

Total Hrs.:90 Hrs.

1. Display the user entered data on MS Excel application for default.
2. Display the user entered data for a specific field.
3. Draw some picture using paint and record in Analog Mode.
4. Perform the synchronization checkpoint for VB application.
5. Data driven Wizard for checking multiple fields.
6. Verify the text area application for an application.

Guidelines to the distribution of marks for practical Examinations:

Two Questions will be given for each student. (3 Hours/60 marks)

Record: 10 marks

Particulars	Program1 (Marks)	Program2 (Marks)
Algorithm	5	5
Test Case	5	5
Test Result	10	10
Modifications	5	5

UCT 32

SEMESTER VI

17UCT613

C.P.13 PHP

Credit Points: 5

Total Hrs.:90 Hrs.

Objective :

- To understand the concept of PHP to develop their web development skill.
- Students themselves can create a website by their own.

UNIT-I

18 Hours

Introducing PHP – Basic development Concepts – Creating first PHP Scripts – Using Variable and Operators – Storing Data in variable – Understanding Data types – Setting and Checking variables Data types – Using Constants – Manipulating Variables with Operators.

UNIT-II

18 Hours

Controlling Program Flow: Writing Simple Conditional Statements – Writing More Complex Conditional Statements – Repeating Action with Loops – Working with String and Numeric Functions.

UNIT-III

18 Hours

Working with Arrays: Storing Data in Arrays – Processing Arrays with Loops and Iterations –Using Arrays with Forms – Working with Array Functions – Working with Dates and Times. Using Functions and Classes: Creating User – Defined Functions – Creating Classes – Using Advanced OOP Concepts.

UNIT-IV

18 Hours

Working with Files and Directories: Reading Files – Writing Files – Processing Directories. Working with Databases and SQL: Introducing Databases and SQL- Creating and Populating a Database - Using PHP's SQLite Extension - Introducing

UCT 33

SQLite – Retrieving Data – Adding or Modifying Data – Handling Errors – Using PHP’s PDO Extension – Retrieving Data – Adding and Modifying Data –**Switching to a Different Database***.

UNIT-V

18 Hours

Working with XML : Introducing XML – XML Basics – Anatomy of an XML Document – Well-Formed and Valid XML – XML Parsing Methods* – XML Technologies – Simple XML and DOM Extensions

* - Self Study and questions for examinations may be taken from the self study portions also.

TEXT BOOK:

1. Vikram Vaswani - “PHP – A Beginner’s Guide”, Tata McGraw–Hill, 2008.

REFERENCE BOOKS:

1. Steven Holzner - “The PHP Complete Reference”, Tata McGraw–Hill, 2007.
2. Steven Holzer - “Spring into PHP5”, Addison Wesley, 2005

C.P.14 INFORMATION SECURITY

Credit points: 5

Total Hrs: 90 Hrs

OBJECTIVE:

- To understand all aspects of cyber security including network security, computer security and information security.
- Students to become information security professionals for the high-end jobs in security.

UNIT I

15 Hours

Is there Security Problem in Computing? : What does Security mean? – Attacks-The Meaning of Computer Security-Computer Criminals. **Protection in general purpose operating systems** : Memory and Address Protection -File Protection Mechanisms-User Authentication.

UNIT II

15 Hours

Program Security: Nonmalicious Program Errors – Viruses and other Malicious Code:Kinds of Malicious Code, How Viruses Attach, Home for Viruses, The Source of Viruses, Prevention of Virus Infection,Truths and Misconceptions About Viruses. Targeted Malicious Code: Trapdoors,Salami Attacks - Controls against Program Threats: Developmental controls.

UNIT III

15Hours

Database and Data Mining Security: Introduction to Databases- Security Requirements-Reliability and Integrity- Multilevel Databases – Proposals for Multilevel Security- Data Mining.

UCT 35

UNIT IV

15 Hours

Security in Networks: Network Concepts-Threats in Networks: Who attacks networks? Reconnaissance, Threats in transit: Eavesdropping and wiretapping, Microwave-Summary of wiretapping-Firewalls-Intrusion Detection Systems.

UNIT V

15Hours

Legal and Ethical Issues in Computer Security: Protecting Programs and Data- Information and the Law-Computer Crime- Ethical Issues in Computer Security.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Charles P.Pfleeger, Shari Lawrence Pfleeger, Deven N.Shan-
"SECURITY IN COMPUTING", Fourth Edition, Prentice Hall, 2007.

REFERENCE BOOKS:

1. Ross J. Anderson and Ross Anderson - "Security Engineering: A Guide to Building Dependable Distributed Systems", Wiley, 2001.
2. Debby Russell and Sr. G. T. Gangemi - "Computer Security Basics (Paperback)", 2nd Edition, O'Reilly Media, 2006.
3. Thomas R. Peltier, Justin Peltier and John Blackley - "Information Security Fundamentals", 2nd Edition, Prentice Hall, 2010 Reprint.

C.Pr.6 PROGRAMMING LAB-PHP

Credit Points: 2

Total Hrs.:90 Hrs.

1. Develop a PHP program using controls and functions.
2. Develop a PHP program and check message passing mechanism between pages.
3. Develop a PHP program using String function and Arrays.
4. Develop a PHP program to display student information using MYSQL table.
5. Develop a PHP program to design a college application form using MYSQL table.
6. Develop a PHP program using parsing functions (use Tokenizing).
7. Develop a PHP program and check Regular Expression, HTML functions, Hashing functions.
8. Develop a PHP program and check File System functions, Network functions, date and time functions.
9. Develop a PHP program using session.
10. Develop a PHP program using cookie and session.

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

Record Work - 10 Marks

Particulars	Program1 (Marks)	Program2 (Marks)
Algorithm	5	5
Program Coding & Execution	15	15
Modifications	5	5

PROJECT WORK AND VIVA-VOCE

Credit Points: 4

Total Hrs.:60 Hrs.

- **Evaluated by both Internal & External Examiners jointly.**

Guidelines to the Distribution of Marks:

CIA	Project Review	15	20
	Regularity	5	
ESE	Project Report Present	60	80
	Viva – Voce	20	
Grand Total			100

UCT 38

SEMESTER IV

17UCT4A4

Allied 4 - MICRO PROCESSORS, PC HARDWARE & INTERFACING

Credit Points: 5

Total Hrs.:90 Hrs.

Objective :

- To understand the assembly language programs and peripheral device usages.

UNIT I

18 Hours

8086 Microprocessor: Introduction – general organization of a Microcomputer - 8086 internal Architecture- **Addressing modes** * – Instructions-DataTransfer, Arithmetic, Bit Manipulation, String. The 8086 based system design: Pins and Signals-Pin Configuration, Signals, Interfacing memory-Memory Devices, Memory Banks- Interrupts.

UNIT II

18 Hours

Peripheral Devices: Introduction- Programmable Peripheral Interface (8255A)-Internal blocks of 8255A ,Operating Modes-Priority Interrupt Controller (8259A)-Internal Block Diagram ,Operations-Direct Memory Access Controller (8237)-Oraganisation of 8237-The Programmable Interval Timer (8254)-Internal Block Diagram-Universal Asynchronous Receiver Transmitter(UART)-Inernal Block Diagram,Internal Registers.

UNIT III

18 Hours

Advanced Microprocessors: 80386-Internal Block Diagram , Internal Registers, Modes of Operation , 80486-Internal Blocks and signals , Internal Registers, Pentium - Internal Blocks and Signals, Pentium MMX, Pentium Pro, Pentium-II Microprocessor.

UCT 39

UNIT-IV

18 Hours

Introduction to bit Slice processor, Signal processing processor and transputers. Introduction to development tools, MDS, **logic analyzer***, in-circuit emulator.

UNIT-V

18 Hours

Input devices -Output devices -Memory and I/O addressing - Programmable I/O Ports – Introduction to USB.

TEXT BOOKS:

1. N. Mathivanan – “Microprocessors, PC Hardware and Interfacing”- PHI Publications, New Delhi 2005. (Unit I, II, III)
2. Badri Ram,” Advanced Microprocessors and Interfacing ”, Tata McGraw Hill Publishing Company Limited, Fourteenth reprint, 2007. (Unit IV, V)

REFERENCE BOOKS:

1. AdityaP.Marthur-“Introduction to Microprocessors”, Third Edition,TMH 2002.
2. Brey.Barry.B, Shrma C.R – “The Intel Microprocessors” – PHI Publications First Edition,2007.

UCT 40

SEMESTER III

17UCT3S1

SKILL BASED SUBJECT 1

COMPUTER INSTALLATION AND SERVICING

Credit Points: 3

Total Hrs.:30 Hrs.

Objective:

To understand the knowledge about the hardware components and trouble shooting.

UNIT I

6 Hours

Introduction to Inside PC: Motherboard-BIOS-CMOS RAM-Motherboard types-Processors-Bus Standards-SMPS. On-Board Memory: PC's Memory Organization-Memory Packaging-I/O Ports.

UNIT II

6 Hours

Hard Disk Drive and Controller: Hard Disk Drive Sub-assemblies-Hard Disk Controller-Interface Types-Installation and configuration.

UNIT III

6 Hours

Input Devices: Keyboard-Mouse-Scanner-Digitizer-Digital Camera.
Monitors and Display Adapters: Display-Video Basics-VGA Monitors-Display Controllers- Digital Display Technology-CRT Controller-Graphics Cards.

UNIT IV

6 Hours

Output Devices: Plotter-Printer Controller-Laser Printer-Ink-Jet Printer.
Computer Installation: **Room Preparation***-Power supply- PC Installation

UCT 41

UNIT V

6 Hours

Troubleshooting and servicing: Troubleshooting the motherboard-
Troubleshooting the keyboard- Troubleshooting the hard disk Drives-
Troubleshooting the Printer.

Computer maintenance: Diagnostic software-Data Security.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. D.Balasubramanian, "Computer Installation and Servicing" , Tata McGraw Hill Second Edition, 2005.

REFERENCE BOOKS:

1. Craig Zacker & John Rourke, "The Complete reference: PC Hardware" , 2001.

2. Singh," Computer Troubleshooting", 1999 Edition.

3. Stephen J. Bigelow, "Trouble Shooting, Maintaining & Repairing PCs", McGraw Hill, 2001.

UCT 42

SEMESTER IV

SKILL BASED SUBJECT 2

17UCT4SL

COMPUTER INSTALLATION AND SERVICING LAB

Credit Points: 3

Total Hrs.:30 Hrs.

1. Study of different components of a PC assembly.
2. Study of troubleshooting.
3. Study of OS Installation, disk fragmentation and de-fragmentation.
4. Study of LAN connectivity in the environment.
5. Study on network file sharing.

Guidelines to the distribution of marks for Practical Examinations:

One Question will be given for each student. (3 Hours/60 marks)

Record : 10 marks

Particulars	Program 1 (Marks)
Procedure	20
Assembling and Troubleshooting	30

UCT 43

SEMESTER V

SKILL BASED SUBJECT 3

16UCT5SM

MULTIMEDIA LAB I

Credit Points: 3

Total Hrs.:30 Hrs

1. Prepare a College day Invitation using Photoshop tools.
2. Modify black and white photo into color photo using Photoshop.
3. Design a program to implement morphing.
4. Design a program to implement filters.
5. Create an animation using Photoshop.
6. Prepare a advertisement banner using Photoshop tools.
7. Prepare a certificate using Photoshop
8. Import digital photos into Movie Maker.
9. Create, design and edit a movie using a Movie Maker.
10. Import Text, Effect and audio clips into Movie Maker.

Guidelines to the distribution of marks for practical examinations:

Two questions will be given for each student (3 Hours/60 Marks)

Record – 10 Marks

Particulars	Program 1 (Marks)	Program 2 (Marks)
Algorithm	5	5
Design & Animation Effects	15	15
Modifications	5	5

UCT 44

SEMESTER VI

SKILL BASED SUBJECT 4

16UCT6SN

MULTIMEDIA LAB II

Credit Points:3

Total Hrs.:30 Hrs.

1. Design an advertisement with layers using flash.
2. Design an animation for traffic signal using flash.
3. Design a flash to implement morphing.
4. Prepare scenes using flash.
5. Simulate a solar system using flash.
6. Create a flash website with rollover buttons.
7. Use Corel Draw to import two or more objects and make arrangement and distributions.
8. Use Corel Draw to design college logo.
9. Use Corel Draw to design floral with color effects.
10. Design a college website using dream weaver

Guidelines to the distribution of marks for practical examinations:

Two questions will be given for each student (3 Hours/60 Marks)

Record – 10 Marks

Particulars	Program 1 (Marks)	Program 2 (Marks)
Algorithm	5	5
Design & Animation Effects	15	15
Modifications	5	5

ELECTIVE PAPER - NETWORK SECURITY

Credit Points: 5

Total Hrs.:90 Hrs.

Objective:

To understand the various security concepts and key algorithms.

UNIT-I

17 Hours

Attacks on Computers and Computer Security: Introduction – The Need for security – Security Approaches – Principles of Security – Types of Attacks: A General View – A Technical View - The Practical side of Attacks – Programs that Attack: Virus, Worms, Trojan Horse.

Cryptography: Introduction – Plain Text and Cipher Text – Substitution Techniques – Transposition Techniques - Encryption and Decryption – Steganography.

UNIT- II

19 Hours

Symmetric Key Algorithms and AES: Introduction – Algorithm Types and Modes – An Overview of Symmetric Key Cryptography - DES – IDEA.

Asymmetric Key Algorithms, Digital Signatures and RSA: Introduction – The RSA Algorithm – An Overview of Asymmetric Key Algorithms - Digital Signatures

UNIT III

18 Hours

Digital Certificates and Public Key Infrastructure (PKI): Introduction – Digital Certificates – Private Key Management – The PKIX model – PKCS .

UNIT-IV

18 Hours

Internet Security Protocols: Introduction – Basic Concepts – SSL – TLS – SHTTP – TSP – SET – Email Security – WAP – * Security in GSM.

UCT 46

UNIT-V

18 Hours

User Authentication and Kerberos: Introduction – Authentication Basics – Passwords – Certificate based Authentication – Biometric Authentication – Kerberos – KDC – Security Handshake pitfalls. SSO – DOS Attacks – **CSSV***.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Atul Kahate, “Cryptography and Network Security”, Tata MC Graw Hill Publications, 2003.

REFERENCE BOOKS:

1. Charlie Kaufman, Radia Perlman, Mike Speciner, “Network Security Private Communication in a Public World”, EEE Publications, Second Edition, 2005.

2. Nitesh dhanjani, Justin Clarke, “Network Security Tools”, Shroff Publications and Distributions Pvt Ltd , Mumbai, 2005.

UCT 47

ELECTIVE PAPER – CLOUD COMPUTING

Credit Points: 5

Total Hrs.:90 Hrs.

Objective:

- To understand the basic knowledge about the cloud computing techniques and architecture.

UNIT-I

18 Hours

Introduction - cloud computing at a glance – Historical development – Building cloud computing environment.

UNIT-II

18 Hours

Principles of parallel and distributed computing – Eras of computing – parallel Vs distributed computing – Elements of parallel computing – Elements of distributed computing – Technologies for distributed computing.

UNIT-III

18 Hours

Cloud computing architecture : Introduction – Cloud reference model – Types of clouds – Organizational aspects.

UNIT – IV

18 Hours

Cloud Applications : Scientific applications : Healthcare – Business and Consumer Applications : CRM and ERP – Media Applications – **Multiplayer Online gaming***.

UNIT- V

18 Hours

Cloud computing for everyone – cloud computing for community – cloud computing for corporation.

UCT 48

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOKS:

1. Rajkumar Buyya, Christian vecchiola , Thamarai selvi, “Mastering Cloud computing”, Mc Gram Hill Edu, 2013.**(UNIT – I to UNIT – IV)**
2. Michael Miller , “ Cloud computing – Web based application “ , Pearson Edu Inc, First Impression 2009.**(UNIT – V)**

REFERENCE BOOK:

1. Judith Hurwitz, Robin Bloon,” Cloud Computing for Dummies”, 2009

UCT 49

ELECTIVE PAPER –SYSTEM SOFTWARE

Credit points: 5

Total Hrs: 90 Hrs

OBJECTIVE:

- To understand the relationship between system software and machine architecture.
- To know the design and implementation of assemblers.

UNIT-I

18 Hours

System Software and machine architecture-The simplified instructional computer(SIC)- machine architecture-Data and instruction formats-addressing modes-instruction sets-input/output and programming.

UNIT-II

18 Hours

Basics assembler functions-A simple SIC assembler-assembler algorithms and Data structures-machine dependent assembler features-instruction formats and addressing modes-program relocation-machine independent assembler features-**literals***-symbol-defining statements-expression –one pass assemblers and multi pass assemblers-implementation example-MASM assembler.

UNIT-III

18 Hours

Basic loader functions-design of absolute loader-A simple bootstrap loader-machine dependent loader features-relocation-program linking-algorithm and data structure for linking loader-machine independent loader features-automatic library search-loader options-loader design options-linkage editors-dynamic linking-bootstrap loader-implementation example-MS-DOS linker.

UCT 50

UNIT-IV

18 Hours

Basic macroprocessor functions-macro definition and expansion-macro processor algorithm and data structure-machine independent macroprocessor features-concatenation of macroprocessor parameters-generation of unique labels-conditional macro expansion-keyword parameters-macro within macro-implementation example-MASM macro processor-ANSI C macro language.

UNIT -V

18 Hours

Text editors-overview of the editing process-user interface-editor structure-interactive debugging systems-debugging functions and capabilities-relationship with other parts of the system-user interface criteria.

TEXT BOOK:

1.D.Thenmozhi,V.Deepa lakshmi,"System Software"-nagus publishing,First edition 2007.

REFERENCE BOOKS:

1.D.M.Dhamdhere,"System programming and Operating System",Tata mc Gram 1999,Revised edition.

2. Leland L.Beck,"System Software- A introduction to system programming" Third edition,pearson edu asia,2000.

UCT 51

ELECTIVE PAPER - CLIENT/SERVER TECHNIQUES

Credit Points: 5

Total Hrs.:90Hrs.

Objective:

- To enhance students to understand the role of both server and client in sending and receiving data over a network.

UNIT I

18 Hours

Client – Server computing – What is Client / Server? – File servers, database servers, Transaction servers, Groupware servers, Object servers, Web servers –FAT servers or client / server * – Client / Server building blocks.

UNIT II

18 Hours

Client / Servers and Operating Systems – The Anatomy of a server program –Needs of Client / Server from an OS – Server Scalability – Client anatomy – Client and server OS trends – Client OS and Server OS. NOS: Creating the single system image – Peer-to-Peer Communication-Remote Procedure Calls (RPC) – Messaging and Queuing: The MOM Middleware- **MOM vs RPC***

UNIT III

18 Hours

SQL Database Servers: Fundamentals of SQL and Relational Databases- What does SQL do? –Stored procedures, Triggers and Rules. Data warehouses – OTP (Online Transaction Processing) – Decision Support Systems (DSS) – Executive Information System (EIS) – The

UNIT IV

18 Hours

Client / Server Transaction Processing – The ACID properties – Transaction Models – TP monitors – Client / Server groupware – Importance of Groupware– What is Groupware – The components of Groupware. Distributed Objects, CORBA Style Object management architecture – Compound Documents –The compound document framework.

UCT 52

UNIT V

18 Hours

Web client / server – What is URL? – Shortest HTML tutorial – HTTP – 3 tier client / server – HTML web based forms – CGI : The server side of the web – web security – The internet and the intranets – **Java and Hot Java***- Applet Components- Compound documents and the object web – The DCOM / OLE Object Web – The CORBA object web.

*** Self Study and questions for examinations may be taken from the self study portions also.**

TEXT BOOK:

1. Robert Orfali, Dan Harkey & Jeri Edwards, - “ The Essential Client / Server Survival Guide”, Galgotia Publication Private Limited, Second Edition, 2002.

REFERENCE BOOKS:

1. Dawna Travis Dewire, -” Client / Server Computing “,Tata McGraw-Hill,INC publications,First Edition 2007.
2. Patrick Smith , Steve Guengerich “Client / Server Computing” Second Edition,PHI Pub.,2002.
3. Steven M. Bobrowski, - “Mastering Oracle 7 And Client/Server Computing”,BPB Publications

ENVIRONMENTAL STUDIES

(2012-13 onwards)

Total Credits: 2

Total Hrs.:30 Hrs

Objectives:

- To inculcate knowledge and create awareness about ecological and environmental concepts, issues and solutions to environmental problems.
- To shape students into good “ecocitizens”, thereby catering to global environmental needs.

UNIT I MULTIDISCIPLINARY NATURE OF ENVIRONMENT (6 hours)

1.1 Definition : scope and importance

1.2 **Need for public awareness***

1.3 Natural resources

1.3.1 Types of resources

Forest Resources – Water Resources – Mineral Resources – Food Resources – Energy Resources – Land Resources.

UNIT II ECOSYSTEMS (6 hours)

2.1 Concept of an ecosystem

2.2 Structure and functions of an ecosystem

2.3 Producers, consumers and decomposers

2.4 Energy flow in the ecosystem

2.5 Ecological succession

2.6 Food chains, food web and ecological pyramids

2.7 Structure and function of the following ecosystem*

Forest Ecosystem – Grassland Ecosystem – Desert Ecosystem – Aquatic Ecosystem.

UNIT III BIODIVERSITY AND ITS CONSERVATION (6 hours)

3.1 Introduction – Definition – Genetic – Species and ecosystem diversity

3.2 Biogeographical classification of India

UCT 54

3.3 Value of biodiversity*

3.4 Biodiversity at global, national and local levels

3.5 India as a mega – diversity Nation

3.6 Hot spot of biodiversity

3.7 Threats to biodiversity

3.8 Endangered and endemic species of India

3.9 Conservation of Biodiversity

insitu Conservation of Biodiversity – *exsitu* Conservation of Biodiversity

UNIT IV ENVIRONMENTAL POLLUTION (6 hours)

4.1 Definition

4.2 Causes, effects and control measures of: Air Pollution – Water Pollution – Soil Pollution – Marine Pollution – Noise Pollution – Thermal Pollution – Nuclear Pollution.

4.3 Solid Waste Managements: causes, effects, control measures of urban and industrial wastes.

4.4 Role of individual in prevention of pollution*.

4.5 Pollution case studies – domestic waste water, effluent from paper mill and dyeing, cement pollution.

4.6 Disaster Management – Flood, Drought, Earthquake, Tsunami, Cyclone and Landslide.

UNIT V SOCIAL ISSUES AND THE ENVIRONMENT (6 hours)

5.1 Sustainable Development

5.2 Urban problems related to energy

5.3 Water Conservation : Rain Water Harvesting and Watershed Management

5.4 Resettlement and rehabilitation of people, its problems and concerns, case studies – Narmatha Valley Project.

5.5 Environmental ethics, issues and possible solutions.

5.6 Climatic change, global warming, ozone layer depletion, acid rain, nuclear accidents and holocaust, case studies – Hiroshima and Nagasaki, Chernobyl.

UCT 55

- 5.7 Consumerism and waste products
- 5.8 Environmental Protection Act
- 5.9 Air Pollution Act (Prevention and Control)
- 5.10 Water Pollution Act (Prevention and Control)
- 5.11 Wild Life Protection Act
- 5.12 Forest Conservation Act
- 5.13 Issues involved in enforcement of environmental legislation

5.14 Public awareness*

- 5.15 Human population and the environment

- 5.15.1 Population Growth and Distribution

5.15.2 Population Explosion – Family Welfare Programme*

- 5.15.3 Environment and Human Health

5.15.4 Human Rights*

5.15.5 Value Education*

5.15.6 HIV / AIDS*

- 5.15.7 Women and Child Welfare

5.15.8 Role of Information Technology in Environment and Human Health*.

*** Self Study (Questions may be asked from these topics also)**

TEXT BOOK

1. P.Arul, A Text Book of Environmental Studies, Environmental Agency, No 27, Nattar street, Velacherry main road, Velacheery, Chennai – 42, First Edition, Nov. 2004.

REFERENCE BOOKS:

1. Purohit Shammi Agarwal, A text Book of Environmental Sciences, Publisher Mrs. Saraswati Prohit, Student Edition, Behind Naswan Cinema Chopansi Road, Jodhpur.
2. Dr.Suresh and K.Dhameja, Environmental Sciences and Engineering, Publisher S.K.Kataria & Sons, 424/6, Guru Nanak Street, Vaisarak, Delhi – 110 006.
3. J.Glynn Henry and Gary W Heinke, Environmental Science and Engineering, Prentice Hall of India Private Ltd., New Delhi – 110 001.

UCT 56

Question Paper Pattern **(External only)**

Duration: 3 hours

Total Marks : 50

Answer all Questions (5 x 10 = 50 Marks)

Essay type, either or type questions from each unit.

UCT 57

Part IV SEMESTER – II 15VED201
VALUE EDUCATION – MORAL AND ETHICS
(2014 – 2015 Batch Onwards)

Total Credits: 2

Total Hrs.:30 Hrs

UNIT I

Introduction to Moral and Ethics; Aim of Education **6 Hours**

UNIT II

Ethics and Culture **6 Hours**

UNIT III

Early Life of Swami Vivekananda **6 Hours**

UNIT IV

The Parliament of Religions **6 Hours**

UNIT V

Teachings of Swami Vivekananda **6 Hours**

TEXT BOOK:

1. Value Based Education - Kongunadu Arts and Science College, Coimbatore, First Edition, 2014.

REFERENCE BOOKS:

1. Moral and Ethics - Published by Dr.M.Aruchami, Secretary and Director, Kongunadu Arts and Science College, Coimbatore, First Edition, June 2007.
2. "Vivekananda A Biography" - Swami Nikilananda, 29th Reprint, January 2013, Published by Swami Bodhasarananda, Adhyaksha, Advaita Ashrama, Mayavati, Champawat, Uttarakhand, Himalayas.

Question Paper Pattern

(External only)

Duration: 3 hours

Total Marks: 50

Answer all Questions (5 x 10 = 50 Marks)

Essay type, either or type questions from each unit.

NON- MAJOR ELECTIVE - I HUMAN RIGHTS

Credit Points: 2

Total Hrs.:30 Hrs

UNIT – I :

6 Hours

Concept of Human Values, Value Education towards Personal Development

Aim of education and value education; Evolution of value-oriented education; Concept of human values; types of values; Components of value education.

Personal Development :

Self-analysis and introspection; sensitization towards gender equality, physically-challenged, intellectually-challenged. Respect to - age, experience, maturity, family members, neighbours, co-workers.

Character Formation towards Positive Personality:

Truthfulness, Constructivity, Sacrifice, Sincerity, Self-Control, Altruism, Tolerance, Scientific vision.

UNIT – II :

6 Hours

Value Education towards National and Global Development

National and International Values:

Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity. Social Values - Pity and probity, self-control, universal brotherhood. Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith. Religious Values - Tolerance, wisdom, character. Aesthetic Values - Love and appreciation of literature and fine arts and respect for the same. National Integration and international understanding.

UNIT – III :

6 Hours

Impact of Global Development on Ethics and Values

Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise.

Modern challenges of adolescent emotions and behaviour; sex and spirituality: comparison and competition; positive and negative thoughts.

Adolescent emotions, arrogance, anger, sexual instability, selfishness, defiance

UCT 59

UNIT- IV : Therapeutic Measures

6 Hours

Control of the mind through

- a. Simplified physical exercise
- b. Meditation – objectives, types, effect on body, mind and soul
- c. Yoga – objectives, types, Asanas
- d. Activities:
 - (i) Moralisation of Desires
 - (ii) Neutralisation of Anger
 - (iii) Eradication of Worries
 - (iv) Benefits of Blessings

UNIT- V : Human Rights

6 Hours

1. Concept of Human Rights – Indian and International Perspectives
 - a. Evolution of Human Rights
 - b. Definitions under Indian and International documents
2. Broad classification of Human Rights and Relevant Constitutional Provisions.
 - a. Right to Life, Liberty and Dignity
 - b. Right to Equality
 - c. Right against Exploitation
 - d. Cultural and Educational Rights
 - e. Economic Rights
 - f. Political Rights
 - g. Social Rights
 - h. Right to Information
3. Human Rights of Women and Children
 - a. Social Practice and Constitutional Safeguards
 - (i) Female Foeticide and Infanticide
 - (ii) Physical assault and harassment
 - (iii) Domestic violence
 - (iv) Conditions of working women
4. Institutions for Implementation
 - a. Human Rights Commission
 - b. Judiciary
5. Violations and Redressal
 - a. Violation by State
 - b. Violation by Individuals
 - c. Nuclear weapons and terrorism
 - d. Safeguards

Note: Study material can be obtained from the Office of the Controller of Examinations of our College.

NON- MAJOR ELECTIVE - II WOMEN'S RIGHTS

Credit Points: 2

Total Hrs.:30 Hrs

UNIT I

6 Hours

Laws, Legal Systems and Change

Definition - Constitutional law, CEDAW and International Human Rights
– Laws and Norms – Laws and Social Context – Constitutional and Legal
Framework.

UNIT II

6 Hours

Politics of land and gender in India

Introduction – Faces of Poverty – Land as Productive Resources – Locating
Identities – Women's Claims to Land – Right to Property - Case Studies.

UNIT III

6 Hours

Women's Rights: Access to Justice

Introduction – Criminal Law – Crime Against Women – Domestic
Violence – Dowry Related Harassment and Dowry Deaths – Molestation –
Sexual Abuse and Rape – Loopholes in Practice – Law Enforcement
Agency.

UNIT IV

6 Hours

Women's Rights

Violence Against Women – Domestic Violence - The Protection of Women
from Domestic Violence Act, 2005 - The Marriage Validation Act, 1982 -
The Hindu Widow Re-marriage Act, 1856 - The Dowry Prohibition Act,
1961

UNIT V

6 Hours

Special Women Welfare Laws

Sexual Harassment at Work Places – Rape and Indecent Representation – The Indecent Representation (Prohibition) Act, 1986 - Immoral Trafficking – The Immoral Traffic (Prevention) Act, 1956 - Acts Enacted for Women Development and Empowerment - Role of Rape Crisis Centers.

REFERENCE BOOKS:

1. Nitya Rao, “Good Women do not Inherit Land”, Social Science Press and Orient Blackswan, 2008.
2. International Solidarity Network, “Knowing Our Rights”, An imprint of Kali for Women, 2006.
3. P.D. Kaushik, “Women Rights”, Bookwell Publication, 2007.
4. Aruna Goal, “Violence Protective Measures for Women Development and Empowerment”, Deep and Deep Publications Pvt, 2004.
5. Monica Chawla, “Gender Justice”, Deep and Deep Publications Pvt. Ltd, 2006.
6. Preeti Mishra, “Domestic Violence Against Women”, Deep and Deep Publications Pvt, 2007.
7. Clair M. Renzetti, Jeffrey L. Edleson, Raquel Kennedy Bergen, Source Book on “Violence Against Women”, Sage Publications, 2001.

UCT 62

15UHR3N1 & 15UWR4N2

NON-MAJOR ELECTIVES I & II

QUESTION PAPER PATTERN

Duration : 3 Hours

Max. Marks: 75

Answer ALL Questions

SECTION A (5 x 5 = 25 marks)

Short answers, either or type, one question from each unit.

SECTION B (5 x 10 = 50 marks)

Essay type questions, either or type, one question from each unit.

UCT 63

KONGUNADU ARTS AND SCIENCE COLLEGE [AUTONOMOUS]
COIMBATORE - 641 029

CIA & End of Semester Theory Examination Question Paper Pattern

[For the candidates admitted from the academic year 2015-2016 Onwards]

Maximum Marks: 75

Section – A (10 X 1=10 Marks)

Q.No.1 to 10: Multiple choice types alone with four distracters each.

Section – B (5 X 5=25 Marks)

Q.No.11 to 15: Either or/Short notes type questions (one question ‘a’ or ‘b’ from each unit).

Section – C (5 X 8=40 Marks)

Q.No.16 to 20: Either or/essay type questions (one question ‘a’ or ‘b’ from each unit).
