



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

579

I SEMESTER

Sl. No	Part	Subject Code	Subject Title	Hrs/week	Exam hrs	C A	S E	Tot	Cr d
1	I	17UACT11/ H11/S11	Tamil/Hindi/ Sanskrit	6	3	25	75	100	3
2	II	17 UAC E11	English	6	3	25	75	100	3
3	III Core	17 UIT C11	Programming in C	5	3	25	75	100	4
4	III Core	17 UIT CP1	Programming in C - Lab	4	3	40	60	100	3
5	IV Allied	17 UIT A11	Statistics	4	3	25	75	100	4
6	IV SBS	17 UIT S11	Introduction of Information system	3	3	25	75	100	3
7	IV	14UAC VE1	Value Education	2	3	25	75	100	2
			Total	30					22

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



SOURASHTRA COLLEGE, MADURAI- 625004
 (An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
 (Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III CORE	Title : PROGRAMMING IN C	Subject Code : 17 UIT C11
Semester : I	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To know the basic of C Language
2. To understand about control and looping statements.
3. To understand about arrays, structure and files in C language

UNIT-I: Basic Structure of C Program - Constants, Variables and Data types : Character set – C tokens – Keywords and Identifiers – Constants – Variables - Data types – Declaration of variables and storage class – Assigning values to variables - Defining Symbolic Constants – Declaring variable as constants.

UNIT-II: Operators and Expressions : Arithmetic , Relational , Logical , Assignment , Increment and Decrement , Conditional , Bitwise , Special operators – Arithmetic Expression – Evaluation of Expressions – Operator Precedence and Associative. **Managing Input and Output Operations :** Reading and Writing a character – Formatted input and output.

UNIT-III: Decision making and Branching : If statement-simple If –If-Else-Nested If-Else –Else If Ladder-Switch statement-Conditional ?: Operator-GoTo Statement. Decision making and Looping: WHILE statement- DO Statement – FOR statement. **Arrays:** One-Dimensional Arrays-Declaration of One-Dimensional arrays – Initialization of One-Dimensional arrays- Two Dimensional arrays-Initializing Two Dimensional Arrays-Multi Dimensional arrays.

UNIT-IV: Character arrays and Strings : Declaring and Initializing String Variables- Reading Strings-Writing Strings-Arithmetic operations on characters-putting strings together-Comparison of Two strings-String Handling functions.

User Defined Functions: Definition of Functions-Return values and their types-Function calls-Function Declaration- Category of Function- Recursion.

UNIT-V:Structures and Unions : Defining-Declaring Structure variables-Accessing structure members – Arrays of structures-Arrays within structures – Unions.File Management: Defining and Opening a File-Closing a File –I/O operations on Files.

TEXT BOOK(S):

1. Programming in ANSI C – E. Balagurusamy - Fourth Edition – Tata McGraw Hill.

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit - I:- Chapter 1 – 1.8 , Chapter 2 – 2.2 to 2.12

Unit-II: Chapter 3: 3.1 to 3.11 & 3.15,Chapter 4: 4.2 to 4.5

Unit-III: Chapter 5: 5.2 to 5.9 Chapter 6:6.2 to 6.4, Chapter 7:7.1 to 7.7

Unit-IV: Chapter 8: 8.2 to 8.8 Chapter 9: 9.5 to 9.13 & 9.16.

Unit-V: Chapter 10:10.2 to 10.4,10.8,10.9,10.12 Chapter 12: 12.2 to 12.4

REFERENCE BOOKS:

1. Programming in C – Radha Ganeshan- Scitech Publication
2. Programming with C – Smarajith Gohsh – Phi Publication

Web site Links: (E-learning resources)

<http://www.cprogramming.com>, www.codingunit.com



SOURASHTRA COLLEGE, MADURAI- 625004
 (An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
 (Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III CORE	Title : PROGRAMMING IN C LAB	Subject Code : 17UIT CP1
Semester : I	HOURS : 4 hours / Week	CREDITS : 3

OBJECTIVES:

1. To know the Basic Programming in C.
2. To understand about the Programming in Control statements, Looping Statements.
3. To understand about the Programming in Arrays, Structures and Files

Simple Programs:

1. Write a C Program for Addition of Two numbers
2. Write a C Program for Swapping Two numbers.
3. Write a C Program to find Simple Interest and Compound Interest.

Control Statements (if , if – else , if .. else .. elseif)

4. Write a C Program to find the Biggest of Three Numbers.
5. Write a C Program to Check the given number is Positive , Negative and Zero.
6. Write a C Program to Check the given number is ODD or EVEN.
7. Write a C Program to Calculate the Sales and Commission.
8. Write a C Program to Calculate EB-Bill .

Looping Statement (for , While , do-while ,Switch..Case)

9. Write a C Program to find the Factorial of a given Limit.
10. Write a C Program to Generate Fibonacci Series.
11. Write a C Program to Generate Multiplication Table.
12. Write a C Program to Check the given number is ADAM or NOT.
13. Write a C Program to Check the given number is ARMSTRONG or NOT.
14. Write a C Program to find the Sum of Digits , Sum of Series , Reverse the number using Switch Case.

Arrays and Strings :

15. Write a C Program for Addition of Two Matrices.
16. Write a C Program for Transpose of a Matrices.
17. Write a C Program for Multiplication of Two Matrices.
18. Write a C Program for Ascending Order.
19. Write a C Program for Searching Number
20. Write a C Program for Counting Vowels in a given String.
21. Write a C Program for arranging the Names in Ascending Order

Structures and Funtion.

22. Write a C Program for swapping two number using call by value and call by references.
23. Write a C Program for Calculating Marks of a student using Structure

Files:

24. Write a C Program for Writing a Employee Salary in a File
25. Write a C Program for Reading a Employee Salary as a Process File



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

582

PART - III ALLIED	Title : STATISTICS	Subject Code : 17UIT A11
Semester : I	HOURS : 4 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand about review of data.
2. To understand about collection analysis, and interpretation of numerical data.
3. To summarize data from mean or standard deviation

UNIT-I: CENTRAL TENDENCIES

Introduction – Arithmetic Mean (AM) - Partition values (Media , Quatiles , Deciles and Percentiles) – Mode – Geometric Mean and Harmonic Mean.

UNIT-II: MEASURES OF DISPERSION

Introduction – Measures of Dispersion – Range – Quartile Deviation – Mean Deviation – Standard Deviation.

UNIT-III: Coefficient of DISPERSION

Coefficient of dispersion – Coefficient of variation – relative advantage of different measure of dispersion – Moments – Skewness – Kurtosis.

UNIT-IV: CURVE FITTING:

Introduction – Principles of least squares – fitting of a straight line – fitting of second degree parabola

UNIT-V: CORRELATION AND REGRESSION:

Introduction - Correlation – Karl pearson Coefficient of correlation – Rank Correlation – Repeated ranks – Regression – lines of regression

TEXT BOOK(S):

Statistics - Dr. S. Arumugam ,Thangapandi ,Issac

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I - Chapter 2(2.0 to 2.4) Page : 11-56

Unit II - Chapter 3(3.0 to 3.2) Page: 60 - 76

Unit III - Chapter- 4(4.0, 4.2) Page: 82 - 91

Unit IV - Chapter-5(5.0,5.1) Page: 95 - 104

Unit V - Chapter 6.0,6.1,6.2,6.3 (Lines of regression and related problem only) Page : 106 – 141

REFERENCE BOOKS:

STATISTICAL METHODS by S.P.GUPTA, SULTAN CHAND AND SONS 2004

Web site Links: (E-learning resources)

<https://statistics.laerd.com/statistical-guides>

<http://www.statpac.com/statistics-calculator>

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



PART - IV SBS	Title:INTRODUCTION OF INFORMATION SYSTEM	Subject Code : 17 UIT S11
Semester : I	HOURS : 3 hours / Week	CREDITS : 3

OBJECTIVES:

1. To Study about basic of a Computer.
2. To Study about the Input and Output Devices
3. To Study about Telecommunication and Network.

UNIT-I: Introduction to Computers: Introduction – Importance of Computers – Characteristics of Computer – Uses of Computers – Overview of Computer System – Parts of a Computer – Importance of Hardware – **Classification of Computers:** Introduction – Portable computers – Personal Computers – Workstations – minicomputers – mainframes – Super Computer – Comparison of Computers – **Central Processing Unit:** Introduction – CPU – Memory – Registers – Instruction set – Machine Cycle – How the CPU and Memory work

UNIT-II: Computer Memory: Introduction –Random Access Memory – Read Only Memory – **Secondary Storage Devices:** Introduction – Classification of Secondary Storage Devices – Advantages of Secondary Storage Devices – Magnetic Disks – Optical Disks – Magnetic Tape – Zip Disk – Jaz Disk – Super Disk – MO Disk.

UNIT-III: Input Devices and Technologies: Introduction – keyboard – Mouse – Trackball – Game Controllers – Scanners – Barcode Reader –OCR – Digitizer – Voice Recognition – web Cams – Digital Camera – Video Cameras - **Output Devices and Technologies:** Introduction – Monitor – Printer – Plotter.

UNIT-IV: Computer Software: Introduction – What is Computer Software – Classification of Software – Operating System – Utilities – Compilers and Interpreters – **Programming Language :** Introduction – Machine Language – Assembly Language – High Level Language – Types of High Level Language.

UNIT-V: Telecommunication and Network: Introduction – Telecommunication Process – Communication Process – Communication Media – Characteristic of Communication Media – Types of Networks – Network Topologies – Network Protocols.

TEXT BOOK(S):

Introduction to Information Systems Alexis Leon and Mathews Leon Mc Graw Hill Education Second Reprint 2009.

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Page 17-28 , 29 – 37 , 38 – 47

Unit II : Page 51-56 , 57-68

Unit III: Page 71-84 , 87-98

Unit IV: Page 101,105,106,113-122

Unit V: Page 143 – 161

REFERENCE BOOKS:

1. Introduction to Computers, Peter Norton, sixth edition, Mc-Graw Hill Companies.
2. Fundamental of Computer, V.Rajaraman Fifth edition, Kindle Edition



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

584

II SEMESTER

Sl. No	Part	Subject Code	Subject Title	Hrs/ week	Exam hrs	C A	S E	Tot	Crd
1	I	17UACT11/ H11/S11	Tamil/Hindi/ Sanskrit	6	3	25	75	100	3
2	II	17 UAC E21	English	6	3	25	75	100	3
3	III Core	17 UIT C21	Object Oriented Programming in C++	5	3	25	75	100	4
4	IV Core	17 UIT CP2	Programming in C++ Lab	4	3	40	60	100	3
5	III Allied	17 UIT A21	Digital Principles and Applications	4	3	25	75	100	4
6	IV SBS	17 UIT S21	Data Structures	3	3	25	75	100	3
7	IV	14 UAC ES1	Environmental Studies	2	3	25	75	100	2
			Total	30					22

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



PART - III CORE	Title : Object Orient Programming in C++	Subject Code : 17 UIT C21
Semester : II	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To know the Basic of C++.
2. To understand about Class and Objects in C++.
3. To understand about various inheritance

UNIT-I: Principles of Object Oriented Programming (OOP):

Software Evolution – OOP Paradigm – Basic Concepts of OOP – Benefits of OOP- Object Oriented Languages – Application of OOP – Introduction to C++- tokens, keywords, identifiers, variables, Operators, manipulators, expressions and Control structures in C++.

UNIT-II: Functions: Functions in C++ - Main Function – Function Prototyping – Call by reference-return by reference – function overloading – Friend and virtual functions.

Classes and Objects: Defining Member Functions – Making an outside Function Inline – Nesting of Member Functions- Private Member Function – Arrays within a Class – Static Member Functions – Arrays of Object – Friend Functions.

UNIT-III: Constructors and Destructors:

Introduction – Constructors – Parameterized Constructors – Constructors with Default Arguments – Copy constructors – Dynamic Constructors - .Destructors.

Operator Overloading and Type Conversions: Defining Operator Overloading – Overloading Unary Operators, Binary Operators – Rules for Overloading Operators – Type Conversions.

UNIT-IV: Inheritance:

Single inheritance – Multilevel Inheritance – Multiple inheritance- Hierarchical Inheritance – Hybrid Inheritance – Pointers, virtual functions and polymorphism, Managing I/O operations.

UNIT-V: Working with files:

Classes for file stream operations – Opening and closing a file – Detecting End of file – File pointers – Updating a file – Error Handling during file operations- command line arguments

TEXT BOOK(S):

Object Oriented programming with C++-E.Balagurusamy, Tata McGrawHill, NewDelhi.

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit -I: Chapter 1: 1.2, 1.4, 1.5, 1.6, 1.7, 1.8 Chapter 3: 3.1, 3.2, 3.3, 3.4, 3.10, 3.13, 3.19, 3.24

Unit-II: Chapter 4: 4.2, 4.3, 4.4, 4.5,4.9, 4.10 Chapter 5: 5.4, 5.6, 5.7, 5.8, 5.9, 5.12, 5.13, 5.15

Unit-III: Chapter 6: 6.1, 6.2, 6.3, 6.4, 6.7, 6.8, 6.11 Chapter 7: 7.2, 7.3, 7.4, 7.7, 7.8

Unit-IV: Chapter 8: 8.3, 8.5, 8.6, 8.7, 8.8. Chapter 9: 9.1 to 9.6 Chapter 10: 10.1 to 10.6

Unit-V: Chapter 11: 11.2, 11.3, 11.4, 11.5, 11.6,11.8,11.9, 11.10

REFERENCE BOOKS:

P.Radha Ganesan, “ Programming Skills in C++”, scitech publications.

Fundamentals of Programming C++”, written by Richard L. Halterman,

Web site Links: (E-learning resources)

<http://www.cplusplus.com/doc/tutorial/>

<https://www.tutorialspoint.com/cplusplus/>



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

586

PART - III CORE	Title : Programming in C++ LAB	Subject Code : 17 UITCP2
Semester : II	HOURS : 4 hours / Week	CREDITS : 3

OBJECTIVES:

1. To understand about programming in C++
2. To understand about programming in OOPs.
3. To understand about programming in File.

Basic Programs (control statements , looping statement , functions)

1. Write a C++ Program for Calculating Simple Interest Inline Function
2. Write a C++ Program Calculating EBBILL.
3. Write a C++ Program Check the Given number is Positive , Negative or Zero
4. Write a C++ Program Check Pass or Fail for a Student Marks
5. Write a C++ Program to Generate Fibonacci Series.
6. Write a C++ Program for Constructor and Destructor.
7. Write a C++ Program for friend function.

Classes and Objects (inside the class and outside the class)

8. Write a C++ Program for accessing the class inside.(Student Marks)
9. Write a C++ Program for accessing the class from outside.(Student Marks)

Function Overloading & Operator Overloading

10. Write a C++ Program for Function Overloading.
11. Write a C++ Program for Binary Operator.
12. Write a C++ Program for Unary Operator.

Inheritance

13. Write a C++ Program for Single Inheritance in Student Mark.
14. Write a C++ Program for Multi Level Inheritance in Employee Payroll
15. Write a C++ Program for Multiple Inheritance in Employee Payroll.

Files

16. Write a C++ Program for Creation of a File
17. Write a C++ Program for Processing a File.



SOURASHTRA COLLEGE, MADURAI- 625004
 (An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
 (Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III ALLIED	Title : DIGITAL PRINCIPLES AND APPLICATIONS	Subject Code : 17 UITA21
Semester : II	HOURS : 4 hours / Week	CREDITS : 4

OBJECTIVES:

1. To know the number systems.
2. To understand the basic concepts of binary operations.
3. To know the digital circuits inside the computer.

UNIT-I:

Binary Numbers – binary to decimal – decimal to binary – octal – hexa decimal – ASCII code – Excess-3 code – Gray Code.

Unit-II

Basic gates - Inverter – OR gates – AND gates –Universal Logic gates- NOR gates – NAND gates –Boolean Laws and Theorems

Unit –III:

Sum of product method – K-Map truth tables – Pairs,Quads , Octets – K-Map simplifications – Don't care – product of sum method – product of sum simplification.

UNIT-IV:

Multiplexers – Demultiplexers – 1- of - 16 Decoders- BCD-to-Decimal Decoder – 7 segment decoders – Encoders – Exclusive-OR gates – parity generators – checkers.

UNIT-V:

Binary Addition – Binary Subtraction – 2's & 1's complement representation – Complement Arithmetic – Arithmetic building blocks- Flip-flops: Edge triggered RS Flip-flop-Edge triggered JK Flip-flop

TEXT BOOK(S):

Digital Principles and Applications - Albert Paul Malvino & Donald P.Leach – Seventh Edition , Tata McGrawHill Edition 2002 , New Delhi

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

- Unit I – Chapter 5 – 5.1 to 5.8
- Unit II – Chapter 2 – 2.1 to 2.3 Chapter 3 – 3.1
- Unit III – Chapter 3 – 3.2 to 3.8
- Unit IV – Chapter 4 – 4.1 to 4.8
- Unit V – Chapter 6 – 6.1 to 6.7 Chapter 8 – 8.3 , 8.5

REFERENCE BOOKS:

1. Tocci R.J.Widmer N.S."Digital Systems: Principles and Applications" Eighth Edition, Pearson Education (singapore) Pvt Ltd Reprint 2004.
2. Floyd. Digital Fundamentals 8/e, Pearson Education Reprint 2006

Web site Links: (E-learning resources)

- https://www.tutorialspoint.com/computer_fundamentals/computer_number_system.html
- http://www.electronics-tutorials.ws/logic/logic_3.html



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

588

PART - IV SBS	Title : DATA STRUCTURES	Subject Code : 17 UITS21
Semester : II	HOURS : 3 hours / Week	CREDITS : 3

OBJECTIVES:

1. To know the basic definition of data structures and its types
2. To know about the efficiency of linear and non-linear data structures
3. To learn about the concept of Trees.

UNIT-I: Need for data structures – data types – Abstract data types (ADT) -Definition of data structure – types of data structures – Algorithm analysis: – problem solving – categories of problem solving – Problem solving strategies with examples.

UNIT-II: **Stack** :Introduction – ADT stack – Implementation of Stack : Representation using arrays and Linked lists – Applications of stack : Well formedness of parenthesis-Syntax checking using stacks –Infix, Prefix and Postfix forms of expressions – Recursive functions – Tower of Hanoi.

UNIT-III: **Queues** : Introduction – Implementation of Basic operations on Array based – On Linked list based - circular queues - Dequeue. **Linked List** : Introduction - Memory allocation – Benefits and limitations – Types – Basic operations of Singly Linked List – Insertion – Print – Deletion.

UNIT-IV: **Sorting**: Introduction – types – bubble sort – Insertion – shell – Selection – Merge – Quick sort – Heap Sort – Radix sort .

UNIT-V: **Trees** –Introduction - Binary trees – types of binary trees – complete, almost complete and strictly binary trees – skew trees – Representation of Binary trees : Linear Representation- Simple Algorithms on Binary trees - Binary tree traversals – inorder, preorder and postorder traversal

TEXT BOOK(S):

Chitra, Rajan - Data Structures – Vijay Nicole Publishers

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Chapter 1: Page no -1-6 Chapter 2: page No - 9-13

Unit II: Chapter 5: Page No. 81 to 104

Unit III: Chapter 6: Page no 111 to 121 Chapter 4 : Page No. 41 to 46 , 49, 54.

Unit IV: Chapter 11: Page No 253 to 287

Unit V: Chapter 7: Page No 125 to 139

REFERENCE BOOKS:

1. Sartaj sahani, “Data Structures and Application in C++” , MC-Graw Hill,2000
2. Weiss, Data structures and algorithm analysis in C++, 3rd edition Pearson education .

Web site Links: (E-learning resources)

[http:// www.tutorialspoint.com/data_structures_algorithms/data_structures_basics.html](http://www.tutorialspoint.com/data_structures_algorithms/data_structures_basics.html)
<http://www.studytonight.com/data-structures/introduction-to-data-structures>

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

589

III SEMESTER

Sl. No	Part	Subject Code	Subject Title	Hrs/week	Exam hrs	C A	SE	Tot	Crd
1.	I	17UACT31/H31/S31	Tamil/Hindi/Sanskrit	6	3	25	75	100	3
2.	II	17UACE31	English	6	3	25	75	100	3
3.	III Core	17UITC31	Relational Database Management System and Sql	4	3	25	75	100	4
4.	III Core	17UITCP3	Oracle Lab	4	3	40	60	100	3
5.	III Allied	17UITA31	Resource Management Techniques	4	3	25	75	100	4
6	IV SBS	17UITSP1	Multimedia Lab	3	3	40	60	100	3
7	IV NME	17UITN31	Foundation of Information Technology	2	3	25	75	100	2
			Total	30					22

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



PART - III CORE	Title : RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)	Subject Code : 17 UITC31/ 16 UITC31
Semester : III	HOURS : 4 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand about the concept of Data and Information.
2. To understand about the Relational Data base Management.
3. To learn the PL/SQL programming concepts.

UNIT-I: Introduction to Database Management Systems: (Introduction, Why a Database, Characteristics of Data in a Database, Database Management System, Why DBMS, Types of DBMS) – Introduction to RDBMS (Domain Constraints, Entity Integrity, Reference Integrity, Operational Constraints) – Database Architecture and Data Modeling.

UNIT-II: E-R Modeling:- (Introduction, E-R Model, Components of an E-R Model, E-R Modeling Symbols) – Data Normalization (1NF, 2NF,3NF, Boyce-codd Normal Form(BCNF), 4NF, 5NF, Domain Key Normal Form(DKNF),Demoralization).

UNIT-III: Introduction to SQL- Tables, Views and Indexes:- (Creating a Table, Modifying a table, Deleting a Table) –Insert, update and delete operations (Insert statement, Bulk inserts of Data, Update statement, delete statement).

UNIT-IV: Queries and Sub queries :- (Queries and Sub queries) – Aggregate functions (Introduction, General rules, Count(),Count(*),SUM(),AVG(),MAX() and MIN())-Joins and Unions – Evolution of Computing models.

UNIT-V: Data Integrity – Transaction management and concurrency control (COMMIT, ROLLBACK and SAVEPOINT commands). **Introduction to PL/SQL:-** Introduction, PL/SQL variables, Character Set, PL/SQL sentence structure, Comments, PL/SQL Data Types, Control Structures, Iterative Control statements, PL/SQL Blocks.

TEXT BOOK(S):

1. Alexis Leon and Mathews Leon “Data base Management System” Leon Vikas Publishing Chennai,2002

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit- I Chapter 1: Pg.No: 1- 6,Chapter 5: Pg.No:99-117, Chapter 7:Pg.No:159-165

Unit-II Chapter 8: Pg.No: 117-186,Chapter 9: Pg.No:195-212,Chapter 11:Pg.No:241-254

Unit –III Chap 14: Pg.No:296-310,Chapter 15: Pg.No:319-322, Chapter 19:Pg.No:395-398

Unit-IV Chap 17: Pg.No: 355-378,Chapter 18: Pg.No:385-390,Chapter 21:Pg.No:413-426

Unit-V Chapter 28: Pg.No: 567-575,Chapter 29: Pg.No:605-606, Chapter 46.D:Pg.No:933-953

REFERENCE BOOKS:

1. Raghu Ramakrishanan & Johannes Gehrke “Database Management Systems”
2nd edition, McGraw Hill international Edition,2003
- 2.C.J.Date, An introduction to Database Systems, Pearson education 8th edition

Web site Links: (E-learning resources)

<http://www.studytonight.com/dbms/rdbms-concept.php>

<https://www.tutorialspoint.com/sql>



PART - III CORE	Title : ORACLE LAB	Subject Code : 17 UITCP3/ 16 UITCP3
Semester : III	HOURS : 4 hours / Week	CREDITS : 3

OBJECTIVES:

1. To Understand the knowledge about Simple, Join Queries
2. To Understand the knowledge about Constraints
3. To Understand the knowledge about PL/SQL programming skills.

SQL Queries:

1. Interfacing with Database systems-SQL-DML Command Querying the Database
2. Creation of Database Using Integrity constraints and Making Queries.
3. Learning Built in Commands and Functions.
4. Conversion functions, miscellaneous functions and groups functions.
5. Processing of sub Queries.

PL/SQL

1. Program using Iterative controls and Sequence Controls.
2. Program using Exception Handling
3. Program using Implicit Cursors and Explicit Cursors.
4. Application development programs like Payroll, EB bill report generation, students Details.
5. Program to join the tables.
6. Programming with Triggers



SOURASHTRA COLLEGE, MADURAI- 625004
 (An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
 (Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III ALLIED	Title :RESOURCE MANAGEMENT TECHNIQUES	Subject Code : 17 UITA31/ 16 UITA31
Semester : III	HOURS : 4 hours / Week	CREDITS : 4

OBJECTIVES:

To solve many application problems like Traveling salesman problem, Graphical method, Least cost method, Vogel's approximation method, using various techniques.

UNIT-I: Definition of OR - Development of OR – History of OR – Mathematical Modeling - Characteristics & Phases - Tools, Techniques & Methods - Scope of OR – Uses of OR.

UNIT-II: Linear Programming Problem - Formulation of LPP – Managerial Problems in LPP – Different forms of LPP – Matrix Form, Standard Form, Canonical Form, and Slack & Surplus Variables - Graphical Solution: General, No Feasible, Unbounded Problems.

UNIT-III : Solving the Linear Programming Problem with three variables: Simplex Method - Computational Procedure – Artificial Variables Technique – Big M Method with two variables only.

UNIT-IV: Mathematical formulation of Assignment problem - Method for solving the assignment Problem.- Hungarian Algorithm method – Balanced Assignment problem – Unbalanced Assignment problem – Traveling Salesman Problem.

UNIT-V: Mathematical Formulation of Transportation Problem – Balanced Transportation Problem – Unbalanced Transportation Problem – Finding the Initial Basic Feasible Solution – North West Corner Rule, Column Minima Method, Row Minima Method, and Matrix Minima Method - Vogel's Approximation Method, Finding Optimality for Transportation Problem

TEXT BOOK(S):

Resource Management Techniques – Prof.V.Sundaresan,K.S.Ganapathy Subramanian, K.Ganesan A.R.Publications

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

- Unit I - Chapter 1(1.1 to 1.7)
- Unit II - Chapter 2(2.1,2.2,2.3,2.5), Chapter 3(3.1 , 3.2)
- Unit III- Chapter 3(3.3, 3.4, 3.2,3.2.1)
- Unit IV- Chapter 8(8.2, 8.3, 8.5, 8.6, 8.7, 8.9)
- Unit V - Chapter 7(7.1 to 7.5)

REFERENCE BOOKS:

1. Arumugam and Issac, Linear Programming Problem, Prentice Hall 2002.
2. Kanti and Swarap, Manmohan, Operation Research, Harvard University Press, 2001.

Web site Links: (E-learning resources)



PART - IV NME	Title :FOUNDATION OF INFORMATION TECHNOLOGY	Subject Code : 17UITN31/ 16UITN31
Semester : III	HOURS : 2 hours / Week	CREDITS : 2

OBJECTIVES:

1. To understand about basic of computer.
2. To understand about the hardware and software.
3. To understand about programming and network

UNIT-I: Introduction of Information

Introduction – Characteristic of Information, Uses of information , Flow of Information , Levels of Information , Categories of Information – Classification of Computers(Analog , Digital , Hybrid , General , Special , Micro , Mini , Mainframe , Laptop, Portable)

UNIT-II: Basic principles of operation of Digital Computer

Input Unit (Magnetic Tape, Disk, Floppy Disk, MICR, OCR, BAR CODE READER, OMR, Keyboard, Mouse, Joystick, Touch screen, Video Display Unit) – CPU – Output unit (Impact Printer and Non-Impact Printer)

UNIT-III: Hardware and Software

Computer System – Hardware – Software (System Software and Application Software) – Generation of Computer (First to Fifth)

UNIT-IV: Data and File

Data processing concepts – Data processing Cycle – Objectives – Steps – Operation – File Organisation (Elements of File , Objective of File ,Sequential,Direct and Indexed File Organisation).

UNIT-V: Programming and Network

Problem solving and Programming – concept of Programming – Programming Tools – Types Network(LAN, WAN,MAN)

TEXT BOOK(S):

Text book of Information Technology- R.Saravana kumar, R.parameshwaran, and T.Jeyalakshmi-S, CHAND and company Ltd.

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

- Unit-I : Chapter 1: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 3.1
- Unit-II : Chapter 3: 3.2
- Unit-III : Chapter 3: 3.3, 3.5.2
- Unit-IV : Chapter 4: 4.1, 4.2, 4.3, 4.4, 4.5, Chapter 5: 5.2
- Unit-V : Chapter 6: 6.1, 6.2, 6.3, Chapter 7: 7.2.1, 7.2.2, 7.2.3

REFERENCE BOOKS:

1. Introduction to Computers, Peter Norton, sixth edition, Mc-Graw Hill Companies.
2. Fundamental of Computer, V.Rajaraman Fifth edition, Kindle Edition

Web site Links: (E-learning resources)

- https://www.tutorialspoint.com/computer_fundamentals
- <http://ecomputernotes.com/fundamental/input-output-and-memory/list-various-input-and-output-devices>



PART - III SBS	Title : MULTIMEDIA LAB	Subject Code : 17UITSP1/ 16UITSP1
Semester : III	HOURS : 3 hours / Week	CREDITS : 3

OBJECTIVES:

1. To understand about basic tools usage in photoshop.
2. To understand about basic of usage of multimedia.
3. To understand about the basic techniques usages.

Photoshop:

1. Write the procedure for cloning the image to another image using clone object tool.
2. Write the procedure to change the text to 3d-text in photoshop.
3. Write the procedure for lighting and lens effect photoshop.
4. Write the procedure for merging two picture in photoshop.
5. Write the procedure for rain effect in photoshop.
6. Write the procedure for making photo gallery in photoshop.

Flash:

1. Write the procedure for moving an object in flash.
2. Write the procedure for moving an object. Also use guide layer to move the object in the same area in flash.
3. Write the procedure for morphing an object in flash.
4. Write the procedure for animating a given text in flash
5. Write the procedure for masking a text in flash.



IV SEMESTER

Sl. No	Part	Subject Code	Subject Title	Hrs/week	Exam hrs	CA	SE	Tot	Crd
1	I	17UACT31/H31/S31	Tamil/Hindi/Sanskrit	6	3	25	75	100	3
2.	II	17UACE41	English	6	3	25	75	100	3
3.	I	17UITC41	Visual Basic	5	3	25	75	100	4
4.	II	17UITCP4	VB and . Net Lab	5	3	40	60	100	3
5.	III Allied	17UITA41	Numerical Methods	4	3	25	75	100	4
6.	IV SBS	17UITSP2	Shell Programming and Linux Lab	3	3	40	60	100	3
7.	IV NME	17UITN41	Software Presentation	2	3	25	75	100	2
8	V		EXTENSION ACTIVITY	0					1
			Total	30					23



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

596

PART - III CORE	Title : VISUAL BASIC	Subject Code : 17UITC41/ 16UITC41
Semester : IV	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand about objects in VB.
2. To understand about statements in VB.
3. To understand about function and graphics usage in VB

UNIT-I: Starting a new project – The properties of window – Common form properties – Scale properties – Color Properties – Making a form responsive – Printing a visual representation of a form – types – creating standalone windows programs – The toolbox – creating controls – The name(Control name) property – properties of command buttons – simple event procedures for command buttons – access keys – Image controls – Textboxes – labels – Navigating between controls – Message boxes – The Grid – The ASCII representation of forms.

UNIT-II: Statements in Visual Basics – Variables – Setting properties with code – Data types – Working with variables – More on strings – More on numbers – Constants – Input boxes – Displaying information on a form – The format function – Picture boxes – Rich Text Boxes – The Printer Object – Determination loops – indeterminate loops – Making decisions – Select case – Nested If-Then – The GOTO – String functions – Numeric Functions – Date and Time Functions – Financial functions

UNIT-III: Function procedures –sub procedures – Advanced uses of procedures and functions – Using the Object Browser to Navigate among your subprograms – List : One dimensional arrays – Arrays with more than one dimension – Using Lists and Array with functions and procedures – The new array-based string – Records(User-Defined Types)

UNIT-IV: The With statements – Enums – Control arrays – List and Combo boxes – The Flex grid control – Code modules: Global Procedures – The DoEvents Function and Sub Main – Accessing Windows function – Error Trapping – Creating an object in Visual Basic.

UNIT-V: Fundamentals of graphics – Screen scales – The line and shape controls – Graphics via code – Line and Boxes – Circles, Ellipses and Pie Charts. The Mouse event procedures – Dragging and dropping operations – File commands – Sequential files – Random access files – Binary files – Sharing files – File system controls – The file system objects – The Clipboard – Running another windows program from within

TEXT BOOK(S):

Gary Cornell “Visual BASIC 6 from the Ground up” Tata Mcgraw Hill Edition 1999



CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Chapter 3: Page No: 63-94 Chapter 4: Page No: 97-134

Unit II: Chapter 5: Page No: 148-187 Chapter 6: Page No: 193-218 Chapter 7: Page No: 220-253
Chapter 8: Page No: 288-297

Unit III: Chapter 9: Page No: 303-333 Chapter 10: Page No: 338-374

Unit IV: Chapter 10: Page No: 378-379 Chapter 11: Page No: 384-422 Chapter 12: Page No: 438-451

Unit V: Chapter 16: Page No: 592-630 Chapter 17: Page No: 648-662 Chapter 18: Page No: 676-721
Chapter 19: Page No: 726-739 Chapter 20: Page No: 747-752

REFERENCE BOOKS:

1. Paul Sheriff “Visual Basic” PHI -1999
2. Peter Norton’s & Michael Groh 1998 “Guide to Visual Basic 6 Techmedia”

Web site Links: (E-learning resources)

<http://ecomputernotes.com/visual-basic>

<http://www.vbtutor.net/>



PART - III	Title : VB AND .NET LAB	Subject Code : 17UITCP4/
CORE		16UITCP4
Semester : IV	HOURS : 5 hours / Week	CREDITS : 3

OBJECTIVES:

1. To know about the basic programming concept.
2. To know about the various object used in programming.
3. To know about the Advance programming in .Net

VB Lab

1. Program for Calculating Simple and Compound Interest
2. Program for Listbox Manipulation
3. Program to Designing a Calculator
4. Program for Drive,Dir,FileBox
5. Program moving an Object using Timer Control
6. Program for creating an EDITOR
7. Program for Checking ADAM Numbers
8. Program for Generating Fibonacci Series
9. Program for Checking ARMSTRONG Number
10. Program for String Manipulation

Console Application from .Net

11. Calculating Sales and Commission.
12. Calculation of EB-Bill using Structure
13. Structure using Multiple Records.
14. SORTING Numbers in an given array
15. FUNCTION OVERLOADING using Switch Case

Windows Application from .Net

16. Creation of Class Checking ARMSTRONG & REVERSE a Number.
17. Displaying Directories Using TREEVIEW
18. Dialog Control (Open,Save,Color,Font)
19. Factorial, +ve –ve zero,Sum of series using Status and Progress Bar.
20. Retrieving Record using DATAGRID
21. Displaying Record Using ComboxBox, ListBox and DataGrid.
22. Searching and Retrieving Record.



PART - III ALLED	Title : NUMERICAL METHODS	Subject Code : 17UITA41/ 16UITA41
Semester : IV	HOURS : 4 hours / Week	CREDITS : 4

OBJECTIVES:

To solve many application problems like Iteration Method, Newton Raphson Method ,Trapezoidal rule.

UNIT-I: Algebraic & Transcendental Equations : Errors in Numerical Computation – Iteration method – Bisection Method – Regula Falsi method – Newton Raphson method.

UNIT-II: Simultaneous Equations : Gauss Elimination method – Calculation of Inverse of Matrix – Gauss seidel iteration method. Curve fitting Method of Least squares.

UNIT-III: Interpolation: Newton’s interpolation formulae – Central Differences interpolation formulae – Lagrange’s interpolation formula – Inverse interpolation.

UNIT-IV: Numerical differentiation: Newton’s Forward and Backward difference formulae – Numerical Integration: Trapezoidal rule – Simpson’s rule. Eigen values and Eigen vectors of a matrix.

UNIT-V: Numerical solution of differential equations: Euler’s method – Taylor’s series method – Rangekutta methods

TEXT BOOK(S):

S.Arumugam and A Thanagapandi issac ,A.Somasundaram “Numerical Methods sci Tech publication Chennai 2002

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

- Unit I - Chapter 3(3.0 to 3.5)
- Unit II - Chapter 4(4.3, 4.5, 4.8) Chapter 2(2.4)
- Unit III - Chapter 7(7.1 to 7.3, 7.6)
- Unit IV- Chapter 8(8.1, 8.2, 8.5) Chapter 5(5.0 to 5.2)
- Unit V - Chapter 10(10.1 to 10.4)

REFERENCE BOOKS:

1. Mathews J.H.” Numerical Methods for Maths,science and Engineering”PHI new Delhi 2001
2. Numerical Methods T.Veerarajan and T.Ramachandran 2nd edition TataMcGrawHill 2006



SOURASHTRA COLLEGE, MADURAI- 625004

(An Autonomous Institution Re-accredited with 'B' grade by NAAC)

B.Sc – INFORMATION TECHNOLOGY- SYLLABUS

(Under CBCS w.e.f. 2017 – 2018 onwards)

600

PART - IV SBS	Title : SHELL PROGRAMMING AND LINUX LAB	Subject Code : 17UITSP2/ 16UITSP2
Semester : IV	HOURS : 3 hours / Week	CREDITS : 3

OBJECTIVES:

1. To understand about the commands
2. To understand the usage of commands in program.
3. To understand about the basic program in Linux

1. Shell Script for calculating Simple Interest
2. Shell Script for Swapping Two Numbers
3. Shell Script for Calculating EB-BILL
4. Shell Script for Checking +ve,-ve,zero numbers
5. Shell Script for Checking ODD or EVEN number
6. Shell Script for Generating ARMSTRONG Number
7. Shell Script for Generating PRIME Numbers
8. Shell Script for Checking ADAM Number
9. Shell Script for Generating an Multiplication Table
10. Shell Script for Generating Fibonacci Series
11. Shell Script for Finding NATURAL NUMBER,REVERSED,SUM OF DIGITS
12. Shell Script for Occurrence of a Characters



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

601

PART - IV NME	Title: SOFTWARE PRESENTATION	Subject Code : 17UITN41/ 16UITN41
Semester : IV	HOURS : 2 hours / Week	CREDITS : 2

OBJECTIVES:

1. To understand about the Fundamentals of computer.
2. To understand about the Office automation
3. To Learn how present the project using office.

UNIT-I: Fundamentals of Computers : Early computers – Modern computer – Computer Hardware – Input devices – Output devices – Storage devices – Types of computer – Computer Software – Communication devices.

UNIT-II: Microsoft Word – Introduction – Menus – Creating a new blank document – Tool bars – Saving the document – Preview – Print – Editing the document – Formatting – setting margins , page numbers – Headers and footers – Tables – Mail merge.

UNIT-III : Microsoft Excel – work environment – Tool bars – Create , Save and closing Excel workbook – Charts – Formulas and functions – Calculate the workbook data – Common Excel Functions – Copying values – Deleting rows and columns – Inserting rows and columns – Automatic filling of entries.

UNIT-IV: Microsoft Access – Creating tables – Defining the primary key – Adding validations to the table – Updating tables.

UNIT-V : Microsoft PowerPoint – Working in Power point – create, save and working with text in slides – Formatting the text - Adding animation to slides.

TEXT BOOK(S):

Comdex computer course kit-Vikas Gupta, Dream Tech publishers,2005

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit- I: Chapter 1:Pg.No.16 to 26, 37 to 44

Unit-II: MS Word : Chapter 1: Pg.No. 186 to 191 Chapter 2: Pg.No. 195 to 206

Chapter 3: Pg.No. 213 to 218 Chapter 4: Full(Pg.No.222 to 243) Chapter 5: Pg.No.248 to 250, 252 to 254,256 to 264 Chapter 6: Full Pg.No.272 to 290

Unit-III: MS Excel: Chapter 1: Pg.No.300,301,305 Chapter 2: Full(Pg.No.314 to 321) Chapter 3: 325 to 330, 340 to 345.

Unit-IV: MS Access: Chapter 2: Full (Pg.No.378 to 391) Chapter 4: Full (Pg.No.394 to 412)

Unit-V: MS Power Point: Chapter 1 & Chapter 2 Full.(Pg.No.450 to 482)



V SEMESTER

Sl. No	Part	Subject Code	Subject Title	Hrs/ week	Exam hrs	C A	SE	Tot	Crd
1.	III Core	17UITC51	Java Programming	5	3	25	75	100	4
2.	III Core	17UITC52	Operating System	5	3	25	75	100	4
3.	III Core	17UITC53	TCP/IP	5	3	25	75	100	4
4.	III Core	17UITCP5	Java Programming Lab	5	3	40	60	100	4
3.	III Core	17UITCP6	Python Programming Lab	5	3	40	60	100	4
4.	III Elective	17UITE51*	Python Programming	5	3	25	75	100	5
		17UITE52*	Introduction to Unified Modeling Language						
		17UITE53*	Biometrics						
6.	SELF STUDY	16USSS11	Soft Skills	-	-	-	-	100	-
			Total	30					25

***One elective subjects to be chosen from the three elective subjects.**



PART - III CORE	Title : JAVA PROGRAMMING	Subject Code : 17UITC51
Semester : V	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To Understand the programming knowledge in Java.
2. To Understand about the concepts of object oriented programming.
3. To Understand about the concepts of Multithread packages and exceptions.

UNIT-I: Fundamentals of OOP JAVA Evolution -features, comparison between C and C++ -Java and Internet -World Wide Web -Web browsers -H/W and S/W requirements -support systems - Java environment -JDK, JVM, API, IDE. Overview of Java Language -Constants -Variables Data types - Tokens -Simple Java Program Structure - Implementing Java program..

UNIT-II: Operators and Expressions: Arithmetic Operators – Relational, logical, assignment, Increment and decrement, conditional, Bit-wise, special operators – Arithmetic expressions, Evaluation of expressions – Type conversions - Operator precedence and associatively- Selection and Iteration– IF – IF... Else -Nested IF else - Switch Operator- While statement -Do -FOR -Jumps in loops- Labeled Loops.

UNIT-III: Classes-Objects -Methods -Defining a class -Adding methods. Variables - creating objects -Accessing class members- Constructors methods overloading -static members’ .Nesting of methods

UNIT-IV: Inheritance -Overriding methods -Final variables and methods -Final classes- Finalize methods -Abstract methods and classes -Visibility control. Packages: System packages -Definition - Using system packages -Naming conventions -creating packages -Accessing a package -Using a package -Adding a class to a package.

UNIT-V: Multithreaded programming : creating threads – Extending thread class – Life cycle of a thread -Using thread methods - Thread Exception- Managing Errors and exceptions :Types of errors - Exceptions –Syntax of Exception handling code – Multiple Catch statements – Using Finally statement – Throwing our own exceptions.



TEXT BOOK(S):

E.Balagurusamy, A Primer Programming with Java, Tata McGraw -Hill Publishing Company Ltd., New Delhi, 2002

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I – Chapter 1(1.1 to 1.5), Chapter 2(2.1 to 2.9), Chapter 3(3.2,3.5,3.6), Chapter 4(4.2 ,4.3,4.4)

Unit II – Chapter 5(5.2 to 5.14), Chapter 6(6.2 to 6.7), Chapter 7(7.2 to 7.6)

Unit III – Chapter 8(8.1 to 8.10)

Unit IV – Chapter 8(8.11 to 8.18), Chapter 11(11.3 to 11.8)

Unit V – Chapter 12(12.1 to 12.7), Chapter 13(13.1 to 13.7)

REFERENCE BOOKS:

1. Patrick Naughton & Herbert Schmidt, The Complete reference Java 2, 5th Edition, Tata McGraw Hill, 2006.

2. Jon Byous, Java Technology: The Early years, Sun Developer Network, 2005.

Web site Links: (E-learning resources)

www.tutorialspoint.com/java , <http://www.w3schools.in/java-tutorial/>



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III CORE	Title : OPERATING SYSTEM	Subject Code : 17UITC52
Semester : V	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To Understand about Computer System Structure and Operating System Concepts
2. To Understand about process management, CPU scheduling, Deadlock
3. To Understand about the storage management and File system implementation

UNIT-I: Introduction: Definition–SimpleBatch System, Multiprogrammed – TimeSharing – Distributed System – **Computer System Structure** : Hardware Protection (Dual Mode Operation ,I/O Protection , Memory Protection , CPU Protection – **Operating System Structure:** System Components – Operating system services, System calls, System programs.

UNIT-II Process Management :Process concepts, scheduling,operations – cooperating processes(Creation and Termination) – Interprocess communication(Message Passing System , Naming, Synchronization , Buffering) – **Threads** : Multithreading models and issues.

UNIT-III: CPU Scheduling and Deadlock : Scheduling Basic Concept – Scheduling Criteria – Scheduling Algorithms (FCFS ,SJF,RR) –Multilevel Queue Scheduling - Algorithm Evaluation (Deterministic , Queuing , Simulations) -Deadlock Characterization, Prevention, Avoidance and Detection- Recovery from deadlock

UNIT-IV: Memory Management: Swapping – Contiguous Memory Allocation – Paging – Segmentation – Segmentation with Paging – Demand Paging – Process Creation – Page replacement – Thrashing.

UNIT-V: File-System and Disk Scheduling : File Concepts – Access methods – Allocation method – Directory Structure(Single Level ,Two Level,Tree Structured) – **FileSystem Implementation** : – Allocation Methods (Contiguous Allocation ,Linked Allocation , Indexed Allocation) – Disk Management – Swap Space Management

TEXT BOOK(S):

Sliberschartz A.Galvin P.B. Gange F.,”Operating System Concepts” – 6th Edition 2012, John Wiley and Sons.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

606

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Chapter 3: Page No: 63-94 , Chapter 4: Page No: 97-134

Unit II: Chapter 5: Page No: 148-187, Chapter 6: Page No: 193-218, Chapter 7: Page No: 220-253,
Chapter 8: Page No: 288-297

Unit III: Chapter 9: Page No: 303-333, Chapter 10: Page No: 338-374

Unit IV: Chapter 10: Page No: 378-379, Chap 11: Page No: 384-422, Chapter 12: Page No: 438-451

Unit V: Chapter 16: Page No: 592-630, Chapter 17: Page No: 648-662,Chapter 18: Page No: 676-
721,Chapter 19: Page No: 726-739,Chapter 20: Page No: 747-752

REFERENCE BOOKS:

1. MauriceJ.Bach “Design of Unix Operating System” Prentice Hall of India NewDelhi-2002
Davis Operating System Pearson education 6th edition

Web site Links: (E-learning resources)

<http://www.ics.uci.edu/~ics143/lectures.html>, <http://www.studytonight.com/operating-system>



PART - III CORE	Title : TCP / IP	Subject Code : 17UITC53
Semester : V	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand about Basic of Networks
2. To understand about the Classes of IP Address
3. To understand about DNS and DHCP

UNIT-I: Basics of Networks

Definition – Need for Network – Types of Network – Types of Topology – Transmission Media : Coaxial Cables , Twisted Pair Wire , Optic Fibre – Connecting Devices : Repeater , Hub , Switches , NIC – OSI Model : Layered Architecture – OSI Model – Layers in TCP/IP Protocol Suite.

UNIT-II : Network Layer

Switching: Circuit and Packet Switching – Connection Less and Connection Oriented Services – Network Services: Services Provided at Source Computer , Each Router , Destination Computer – Ipv4 Address: Introduction – Classful and Classless addressing.

UNIT-III: TCP

Transport Layer Services : Process to Process ,Addressing , Encapsulation and Decapsulation, Multiplexing and Demultiplexing ,Flowcontrol, Connection and Connection less Protocols –Simple, Stop&Wait , Go-Back N - TCP Services – TCP Connection : Error Control, Checksum, Acknowledgement, Retransmission. Client Server Paradigm : Client, Server ,Concurrency, Socket Interface.

UNIT-IV: DHCP and DNS

Introduction – DHCP Operation – Configuration- DNS: Need for DNS – Namespace – DNS in the Internet- DNS Msg – Types of Record.

UNIT-V: FTP and WWW

FTP : Connections ,Communication, Command processing, File Transfer – WWW Architecture : Hypertext and Hypermedia, Web client, Web server, Uniform Resources Locator (URL) – Web Documents: Static Documents, Dynamic Documents, Active Documents- Electronic mail : Architecture , UserAgent , SMTP Commands & Responses , Mail Transfer Phases.

TEXT BOOK: TCP/IP Protocol Suite 4th Edition – Behrouz A.Forouzan TATA McGrawHill Edition.



SOURASHTRA COLLEGE, MADURAI- 625004

(An Autonomous Institution Re-accredited with 'B' grade by NAAC)

B.Sc – INFORMATION TECHNOLOGY- SYLLABUS

(Under CBCS w.e.f. 2017 – 2018 onwards)

608

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Page 20 – 30

Unit II : Page 95 – 107 , 115 – 142

Unit III : Page 375-379,386,390,391,395,465,466,543-546

Unit IV: Page 569 – 579, 582-592, 598,599

Unit V: Page 630 -639, 657-659,660-663,681-686,687-691.

REFERENCE BOOKS:

1. Andrew S. Tanenbaum, “Computer Networks”, 4th Edition, Pearson Education,
2. E.Douglas Comer, David L. Stevens, “Internetworking with TCP/IP - Volume I II and III

Web site Links: (E-learning resources)

<http://www.studytonight.com/computer-networks>

<http://www.techwarehouse.com/engine/d9e99072/Basic-Networking-Tutorial>



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

609

PART - III CORE	Title : JAVA PROGRAMMING LAB	Subject Code : 17UITCP5
Semester : V	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To improve the creativity during problem solving.
2. To understand the concepts of Java.
3. To develop programming skills in java.
 1. Program using Switch-Case statement to perform the following operations.
 - (i) Sum of natural numbers.
 - (ii) Factorial of a given number.
 - (iii) Display the cubes of numbers between 1 to 100.
 2. Program to print the mark list of a student.
 3. Program print the numbers in ascending order.
 4. Program for Constructor Overloading
 5. Program for Method Overloading.
 6. Program to implement Dynamic Method Dispatch.
 7. Program for User Defined Exception.
 8. Program to implement Multithreading.
 9. Program to print the academic and sports marks of a student using interface.
 10. Program for Employee Net Pay Calculation using Parameter attribute.
 11. Program to print the Employee details using Button, Label and Text Field.
 12. Program to implement simple arithmetic operations using Frame Application.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

610

PART - III CORE	Title : PYTHON LAB	Subject Code : 17UITCP6
Semester : V	HOURS : 5 hours / Week	CREDITS : 4

Ex. No.	Name of the Programs
1.	Write a Python program to compute addition of two numbers.
2.	Write a Python program to finding Total, Average and grade system of Student Marks.
3.	Write a Python program to calculate Area and Circumference of a Circle.
4.	Write a Python program to compute Temperature Conversion.
5.	Write a Python program to calculate of Simple Interest (SI).
6.	Write a Python program to check whether the number is Positive Number or Negative Nos.
7.	Write a Python program to check whether the year is Leap Year or Not.
8.	Write a Python program to calculate greatest of three numbers.
9.	Write a Python program to check whether the number is Prime Number or Not.
10.	Write a Python program to check whether the number is ODD or EVEN Number.
11.	Write a Python program to Swapping of two numbers without using temporary variable.
12.	Write a Python program to print the Fibonacci series using recursion.
13.	Write a Python program to calculate Factorial of a given number using recursion function.
14.	Write a Python program to calculate sum of digits of a given number using function.
15.	Write a Python program to reverse the given input number using function.
16.	Write a Python program to check whether the number is Palindrome Number or Not.
17.	Write a Python program to check whether the number is Armstrong Number or Not.
18.	Write a Python program to find the minimum and maximum of a list of numbers.
19.	Write a Python program: “tuple1 = (10,50,20,40,30)” i. To display the elements 10 and 50 from tuple1 ii. To display length of a tuple1. iii. To find the minimum element from tuple1. iv. To add all elements in the tuple1. v. To display same tuple1 multiple times.
20.	Write a Python program. i. To calculate the length of a string. ii. To reverse words in a string. iii. To display same string multiple times. iv. To concatenate two strings. Str1=“South India” , using string slicing to display “India”

Passed in the BOS Meeting
held on 15-3-2017

Signature of Chairman/HOD



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

611

PART - III CORE	Title: PYTHON PROGRAMMING	Subject Code : 17UITE51
Semester : V	HOURS : 5 hours / Week	CREDITS : 5

UNIT – I : Basics and Operators

Introduction to Python – Values and Types –Python Keywords-Identifier/Variable – I/O statements – (The printf () Function - The input () Function –The eval () Function) – Commenting in Python. Operators and Expressions – Arithmetic Operators – Operator Precedence and Associativity – Changing Precedence and Associativity of Arithmetic Operators – Translating Mathematical Formulae into Equivalent Python Expressions –Bitwise Operator –The Compound Assignment Operator

UNIT –II : Operators, Lists and Tuples

Boolean Type – Boolean Operators – Using Numbers with Boolean Operators – Using String with Boolean Operators – Boolean Expressions and Relational Operators. Lists – Creating Lists – Accessing Elements of a List –Negative List Indices –List Slicing [Start : End] –List Slicing with Step Size –Python Built-In Functions for Lists –The List Operator –Tuple – Introduction to Tuples – Creating Tuples – Inbuilt functions for Tuples –Indexing and Slicing – Operations on Tuples – Lists and Tuples – Sort the tuples.

UNIT –III : Decision Making Statements & Loop Control Statements

Decision Making Statements – Conditional Expressions – Loop Control Statements – The while Loop – The range () Function – The for Loop – Nested Loops – The break Statement – The continue Statement.

UNIT –IV : Functions and Strings

Functions – Syntax and Basics of a Function –Use of a Function – Parameters and Arguments in a Function – The Local and Global Scope of a Variable – The return Statement –Recursive Functions –The Lambda Function –The String Operators –String Operations.

UNIT –V : File Handling and Exception Handling

File Handling – Need of file Handling –Text Input and Output – Exception Handling - Errors and Exception –Python Exception and its Hierarchy –Handling Exception –Raising Exception – Modules –Packages on Python.

TEXT BOOK:

Problem Solving and Python Programming – Ashok Namdev Kamthane and Amit Ashok Kamthane - McGrawHall Education 2018



SOURASHTRA COLLEGE, MADURAI- 625004

(An Autonomous Institution Re-accredited with 'B' grade by NAAC)

B.Sc – INFORMATION TECHNOLOGY- SYLLABUS

(Under CBCS w.e.f. 2017 – 2018 onwards)

612

REFERENCE BOOKS:

1. Problem Solving and Python Programming – P.Radha Ganesan - Chess Educational Publishers
2. Python Programming A Modular Approach – Sheetal Taneja and Naveen Kumar Pearson Publication
3. Tony Gaddis, Starting out with Python (3C), Pearson, 2015.
4. Kenneth A.Lambert, Fundamentals of Python.
5. James Payne, Beginning Python using Python 2.6 and Python 3.
6. Charles Dierach, Introduction to Computer Science using Python.
7. Paul Gries, Practical Programming : An Introduction to Computer Science using Python 3.
8. Balagurusamy, “Introduction to Computer & Problem Solving using Python”, Mc Graw Hill Education, 2016.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

613

PART - III CORE	Title : INTRODUCTION TO UNIFIED MODELING LANGUAGE	Subject Code : 17UITE52
Semester : V	HOURS : 5 hours / Week	CREDITS : 5

OBJECTIVES:

1. To Understand about the basis of UML.
2. To Understand about the Pattern approach
3. To Understand about Modeling methodologies

UNIT I: Object Oriented Methodologies: Introduction – Survey of some of the Object oriented methodologies – Rumbaugh et al's Object modeling technique – The booch methodology – The Jacobean et al. methodologies – patterns – frameworks – the Unified approach.

UNIT-II

Unified Modeling language – Introduction – Static and Dynamic models – why modeling – Introduction to the Unified modeling language – UMS diagrams – UML class diagram – user-case diagram – UML dynamic modeling – model management – UML extensibility – UML meta model.

UNIT-III:

Object oriented analysis process – introduction – Why analysis is a difficult activity – Business object analysis – use-case driven object oriented analysis – business process modeling – use-case model – developing effective documentation – case study.

UNIT-IV:

Object analysis: classification – classification theory – approaches for identifying classes – noun phrases approach – common class patterns approach – use-class driven approach – classes, responsibilities and collaborators – naming classes.

UNIT-V:

Identifying object relationships, attributes and methods – associations – super-sub class relationships – A part of relationships aggregation – case study – class responsibility – defining attributes for ViaNet Bank objects – Object responsibility – Defining methods for Vianet Bank objects.

TEXT BOOK(S):

Object oriented systems development using Unified Modeling Language – Ali Bahrami – TMH edition, 2008

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

UNIT I: Chapter 4

UNIT II: Chapter 5

UNIT III: Chapter 6

UNIT IV: Chapter 7

UNIT V: Chapter 8

REFERENCE BOOKS:

Object oriented analysis and design using UML – Mahesh P Matha – PHI, 2008



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

614

PART - III CORE	Title : BIOMETRICS	Subject Code : 17UITE53
Semester : V	HOURS : 5 hours / Week	CREDITS : 5

OBJECTIVES:

1. Knowledge about Finger Prints
2. Knowledge about Facial recognition Technology
3. Knowledge about Retina Scanning

UNIT-I:

How Authentication technologies work : What you Know-Passwords and PINs– Cards and Tokens – What you are: Biometrics – Multi-Factor authentication – Subverting the system – Deploying Authentication systems – Economics of Authentication -How **Biometrics work :** Brief History of Biometrics – Why Use Biometrics – Key Elements of Biometric System.

UNIT-II

Fingerprint and Hand Geometry: – History of Fingerprints – Hand Geometry - **Facial and Voice recognition:** Facial recognition application – Facial recognition Technology – Voice Verification

UNIT-III:

Eye Biometrics:Iris and retina Scanning: – Iris recognition technology – Applications – Retina Scanning – Accuracy. **Signature Recognition and Keystroke Dynamics:** Signature Recognition – Keystroke Dynamics

UNIT-IV:

Esoteric Biometrics – Vein pattern – Facial Thermography – DNA- Sweat pores – Hand Grip – Fingernail Bed – Body Odor – Ear – Gait- Skin Luminescence – Brain Wave Pattern – Footprint and Foot Dynamics – The Future.

UNIT-V:

Biometrics in large Scale Systems- Getting Started- Documenting the procurement process – specifying the systems – Same AFIS RFP Overview. **Biometric Testing and Evaluation:** -Who tests and Who Benefits- The three bears principle- Best practices for Biometrics testing – Types of Testing – Certification.

Text Book:

Biometrics – The Ultimate References, John D.Woodward, Jr.Nicholas M.Orlans , Peter T.Higgins – Dreamteach Publishers 2003

REFERENCE BOOKS:

Guide to Biometric Reference Systems and Performance Evaluation

Petrovska – Delacretaz , Dijana,chollet, Gerard,Dorizzi,Bernadette

Web site Links: (E-learning resources)

<http://www.biometric-solutions.com/fingerprint-recognition.html>

**VI SEMESTER**

Sl. No	Part	Subject Code	Subject Title	Hrs/ week	Exam hrs	C A	SE	Tot	Cr d
1.	III Core	17UITC61	Software Engineering	5	3	25	75	100	4
2.	III Core	17UITC62	Web Designing with PHP	5	3	25	75	100	4
	III Core	17UITC63	Mobile Computing	5	3	25	75	100	4
3.	III Core	17UITCP7	Web Design & PHP Lab	5	3	40	60	100	4
4.	III Elective	17UITE61*	Principles of Information Security	5	3	25	75	100	5
		17UITE62*	Software Testing						
		17UITE63*	E-Commerce						
5.	III Elective	17UITEV1	Project and Viva Voce	5	3	40	60	100	5
6.	SELF STUDY	16UGKC11	General Knowledge	-	-	-	-	100	-
			Total	30					26

* One elective subject to be chosen from the three elective subjects.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

616

PART - III CORE	Title : SOFTWARE ENGINEERING	Subject Code : 17UITC61
Semester : VI	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand the concepts of Software Engineering.
2. To understand the concepts of Cost estimation.
3. To understand the concepts of Verification and Validation Techniques.

UNIT-I:

Introduction to Software Engineering Some definitions – Project size Categories- Quality and productivity factors - Managerial issue. Planning a software project: Definition the problem - Developing a solution strategy- planning the development process - planning an organization structure - other planning activities.

UNIT-II Software Cost Estimation:

Software - Cost factors - software cost estimation techniques - Specification techniques – staffing - level estimation - estimating software maintenance costs.

UNIT-III: Software requirements definition:

The software requirements specification -Formal Specification Techniques - Languages and Processors for requirements specification.

UNIT-IV: Software Design:

Fundamentals Design concepts - Modules and modularizing Criteria Design Notations – Design Techniques - Detailed Design Consideration - Test plan - Mile stones walk through and inspection - Design guide lines.

UNIT-V: Verification and validation Techniques:

Quality Assurance - static analysis - symbolic exception - Unit testing and Debugging – System Testing - formal verification. Software maintenance: Enhancing maintainability during development – managerial aspects of software maintenance.

TEXT BOOK(S):

Richard E.Fairly, "Software Engineering Concepts", McGraw Hill Book Company.

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

- Unit I - Chapter 1 (1.1, 1.3, 1.4) , Chapter 2(2.1 to 2.5)
- Unit II - Chapter 3(3.1 to 3.4)
- Unit III - Chapter 4(4.1 to 4.3)
- Unit IV - Chapter 5(5.1 to 5.5, 5.7 to 5.9)
- Unit V - Chapter 8(8.1 to 8.7)

REFERENCE BOOKS:

Roger S.Pressman, "Software Engineering : A practitioner's approach" McGraw Hill International Book Company.

Web site Links: (E-learning resources)

www.tutorialspoint.com/software_engineering/
www.computernotes.com/software-engineering



SOURASHTRA COLLEGE, MADURAI- 625004
 (An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
 (Under CBCS w.e.f. 2017 – 2018 onwards)

PART - III CORE	Title: WEB DESIGNING WITH PHP	Subject Code : 17UITC62
Semester : VI	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To enable the students to understand the importance Scripting Language.
2. To become familiar with HTML and PHP

UNIT-I: HTML

Introduction to HTML – Tags – Commonly used HTML commands : Structure of an HTML Program , Titles and Footer , Text Formatting , Emphasizing Materials in a Web Page – Text Styles – Types of Lists – Adding Graphics to HTML Documents – Tables – Hyperlink – Frames.

UNIT-II Basics of PHP

Basics of PHP: Data types – Variables – scope of variables – constants – here documents – Operators: Unary Operator, Binary Operator and Ternary Operator – Arrays – conditional statements: if statements, else if clause, switch statement.

UNIT-III: Iterations: for loop, while loop, do while loop, for each loop, infinite loop, loops within loop – Functions: User-defined Functions: Functions with arguments – multiple arguments – Accept and return Value by reference – By value.

UNIT-IV: PHP server variables: Functions for variables – Controlling script functions – Array functions – Working with Date and Time – Performing mathematical operations – Working with string functions: Finding a string – Return first occurrence – Replacing – Converting to and from ASCII – measuring string – Trimming and wrapping - changing string case.

UNIT-V: Working with FORMS

Form Elements: Textbox , Text Area , Password , Radio button , Checkbox , Combo box , hidden field , Image , SUBMIT and Reset Buttons – Adding Elements to a Form: Textbox , Text Area , Password Field , Radio Button , Select box , Checkbox – Error Handling in PHP.

TEXT BOOK(S):

HTML, Javascript, DHTML and PHP – Ivan BayRoss 4th Edition BPB Publications

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I – Chapter 2(Pg.No.19 to 25), Chapter 3(Pg.No.33 , 34), Chapter 4(Pg.No.38 to 41), Chapter 5(Pg.No.47 to 52), Chapter 6(Pg.No.58 to 63), Chapter 7(Pg.No.74 to 75)

Unit II – Chapter 17(Pg.No.278 to 315)

Unit III – Chapter 17(Pg.No.319 to 330, 332) Chapter 18(Pg.No.339 to 346)

Unit IV – Chapter 18(Pg.No.356 to 397)

Unit V – Chapter 19(Pg.No.410 to 427) Chapter 21(Pg.No.481 to 505)

REFERENCE BOOKS:

Web Programming unleashed – Bob BreedLove,et al

Web site Links: (E-learning resources)

<http://www.w3schools.com/html>

<http://www.javatpoint.com/php-tutorial>

<https://www.tutorialspoint.com/php/>



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

618

PART - III CORE	Title: MOBILE COMPUTING	Subject Code : 17UITC63
Semester : VI	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To understand the Basic Mobile Computing
2. To understand the GPRS
3. To understand the WAP

UNIT-I: Introduction - Mobility of Bits and Bytes - Wireless the beginning - Mobile computing - Mobile Computing Architecture - Three tier architecture - Design consideration for mobile computing.

UNIT-II Evolution of Telephony - Mobile computing through telephone - Emerging Technologies - Introduction - Bluetooth - Radio Frequency Identification

UNIT-III: GPRS - Introduction and Packet Data Network - GPRS Network Architecture - Operations - Data services in GPRS

UNIT-IV:

Wireless Application Protocol - Introduction - WAP - MMS - GPRS application – CDMA

UNIT-V:

Wireless LAN : Introduction - wireless LAN Advantages - Wireless LAN security - Wifi Versus 3G

TEXT BOOK(S):

Mobile Computing Technology applications and Service creation Asoke K Talukder, Roopa R.Yavagal TMH publishing company Newdelhi 2005

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

Unit I: Chapter 1: 1.1-1.3 Chapter 2: 2.4-2.6

Unit II: Chapter 3: 3.1-3.4 Chapter 4: 4.1-4.3

Unit III: Chapter 7:7.1-7.5

Unit IV: Chapter 8: 8.1-8.4 Chapter 9: 9.1-9.2, 9.4-9.5

Unit V: Chapter 10: 10.1-10.2, 10.4, 10.8, 10.12

REFERENCE BOOKS:

Mobile Computing – Rajkamal Published by Oxford Higher Education/Oxford University Press, 2011



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

619

PART - III	Title: WEB DESIGN & PHP LAB	Subject Code : 17UITCP7
CORE		
Semester : VI	HOURS : 5 hours / Week	CREDITS : 4

OBJECTIVES:

1. To Understand about the Tags.
2. To Understand about Web Page Creation
3. To Understand programming in PHP

HTML :

1. Design student ID card using image tag.
2. Display various Subjects using Lists.
3. Design class Timetable using Tables.
4. Display various Text styles and Colors using Frames.
5. Design Student Admission Form.

PHP:

6. Arithmetic operations.
7. If, Else, Else-If statements.
8. For each statement and is function statements.
9. Continue Break statements.
10. Arrays.
11. String functions.
12. Personal information using Post method.
13. Bus Ticket Reservation using Post method.
14. Employee Details using Get method.
15. Student Details using Get method.
16. Calendar function.
17. Multiplication Table.
18. Inheritance.
19. Validation.
20. Session.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

620

PART - III ELECTIVE	Title: PRINCIPLES OF INFORMATION SECURITY	Subject Code : 17UITE61
Semester : VI	HOURS : 5 hours / Week	CREDITS : 5

OBJECTIVES:

1. To understand about the basic of security
2. To understand about various Threats.
3. To understand about Security Technologies.

UNIT-I: Information Security:

History of Information Security – What is Security – Components of Information System - Security System Development Life Cycle – Security Professionals and the Organization – Communities of Interest – Information Security Is it an Art or Science.

UNIT-II Why Security is Needed :

Business Needs First – **Threats:** Deliberate Software Attacks : Virus,Worms,Trojan Horses – Deviations in Quality of Services – Forces of Natures – Human Error or Failure – Thefts – Technical Hardware Failure or Errors – Technical Software Failure or Errors. **Attacks:** Malicious Code , Hoaxes , Backdoors , Password Check , Denial of Service , Spoofing , Spam , Mail bombing , Timing Attack.

UNIT-III: Managing IT Risk:

Overview of Risk Management – **Risk Identification** : Plan and Organize the Process , Asset Identification and Inventory , Information Asset Valuation – **Risk Control Strategies:** Defend , Transfer ,Mitigate , Accept , Terminate – **Selecting Risk Control Strategy:** Feasibility Studies , Cost Benefit Analysis (CBA), Evaluation, Assessment and Maintenance of Risk Control.

UNIT-IV: Plan for Security:

Information Security , Planning and Governance – Information Security Policy , Standards and Practices : Definition, EISP , ISSP – **Security Education , Training and Awareness Program – Continuity Strategies :** Business Impact Analysis , Incident Response Planning. **Security Technology : Access Control** – Identification, Authentication , Authorization , Accountability.

UNIT-V: Security Technology : Firewalls – Firewall Processing Modes , Firewall Categorized by Generation , Firewall Categorized by Structure , Remote Access , VPN **Scanning And Analysis Tools : Port Scanner , Firewall Analysis Tools , Operating System Detection Tools , Vulnerability Scanners , Packet Sniffers - Biometric Access Tools.**



SOURASHTRA COLLEGE, MADURAI- 625004

(An Autonomous Institution Re-accredited with 'B' grade by NAAC)

B.Sc – INFORMATION TECHNOLOGY- SYLLABUS

(Under CBCS w.e.f. 2017 – 2018 onwards)

621

TEXT BOOK(S):

Principles of Information Security – Michael E. Whitman and Herbert J. Mattord 4th Edition

CHAPTERS and SECTIONS (For UNIT-I, II, III, IV and V)

Unit I: Chapter 1: Page No. 3-11, 16-19, 26-32

Unit II: Chapter 2 : Page No. 39-48, 54-57, 61-62, 63-68, 72 (Timing attack only)

Unit III: Chapter 4: Page No. 117-132, 144-153

Unit IV: Chapter 5: Page No. 168-178, 203-221 Chapter 6: Page No. 238-242

Unit v: Chapter 6: Page No. 242-255, 270-277 Chapter 7: Page No. 318-326, 331-333

REFERENCE BOOKS: Computer Security Art and Science, Matt Bishop, Pearson/PHI, 2002



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

622

PART - III ELECTIVE	Title: SOFTWARE TESTING	Subject Code : 17UITE62
Semester : VI	HOURS : 5 hours / Week	CREDITS : 5

OBJECTIVES:

1. To understand Basic Testing Concepts
2. To understand Various Testing
3. To understand the Execution and Reporting

UNIT-I: Software Development Life Cycle models:

Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. **White-Box Testing:** Static Testing – Structural Testing –Challenges in White-Box Testing

UNIT-II : Black-Box Testing:

What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing - **Integration Testing:** Integration Testing as Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash.

UNIT-III: System and Acceptance Testing:

System Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing – Nonfunctional Testing – Acceptance Testing – Summary of Testing Phases

UNIT-IV: : Performance Testing:

Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. **Regression Testing:** What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.

UNIT-V: Test Planning, Management, Execution and Reporting:

Test Planning – Test Management – Test Process – Test Reporting –Best Practices. **Test Metrics and Measurements:** Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics



SOURASHTRA COLLEGE, MADURAI- 625004

(An Autonomous Institution Re-accredited with 'B' grade by NAAC)

B.Sc – INFORMATION TECHNOLOGY- SYLLABUS

(Under CBCS w.e.f. 2017 – 2018 onwards)

623

TEXT BOOK(S):

SOFTWARE TESTING Principles and Practices – Srinivasan Desikan & Gopalswamy Ramesh, 2006, Pearson Education

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

UNIT-I: 2.1-2.5, 3.1-3.4

UNIT-II: 4.1-4.4, 5.1-5.5

UNIT III: 6.1-6.7

UNIT IV: 7.1-7.6, 8.1-8.5

UNIT-V: 15.1-15.6, 17.4-17.7

REFERENCE BOOKS:

1. **EFFECTIVE METHODS OF SOFTWARE TESTING–William E.Perry, 3rd ed,Wiley India.**
2. **SOFTWARE TESTING – Renu Rajani, Pradeep Oak, 2007, TMH**

Web site Links: (E-learning resources)

www.tutorialpoint.com



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

624

PART - III ELECTIVE	Title: E-COMMERCE	Subject Code : 17UITE63
Semester : VI	HOURS : 5 hours / Week	CREDITS : 5

OBJECTIVES:

1. This subject deals with E-commerce concepts like E-Commerce, MCommerce, E-Security and E-payment.
2. Knowledge on E-commerce and Real World and Cyberspace problem awareness.
3. To inculcate knowledge on E-Commerce concepts in the present IT world.

UNIT-I:

What is e-commerce? – E-Commerce is not E-Business – the drivers – Myths You should know – Advantages and Issues in E-Commerce – Benefits and Limitations of the Internet– Role of E-Strategy – Integrating E-commerce – E-Commerce Business Models – Management Implications.

UNIT-II Mobile-Commerce-The Business of Time:

What is M-Commerce? – Why wireless? – How wireless Technology is employed? – Wireless LAN – Wireless application Protocol -Implications for Management.

UNIT-III: Business-to-Business E-Commerce:

What is B2B E-Commerce? – Supply chain Management and B2B – B2B Models – B2B Tools-EDI.

UNIT-IV: E-Security

Security in Cyberspace – Designing for Security – How much risk you afford? – The VIRUS – Security Protection and Recovery – Role of Biometrics - How to secure your system? – Security and Terrorism

UNIT-V: Getting the money: Real World Cash – Electronic Money – Requirements for Internet-Based Payments – How would you like to pay? – B2B and E-Payment – M-Commerce and M-Payment – General Guide to E-Payment.

TEXT BOOK(S):

ELECTRONIC COMMERCE from Vision to Fulfillment – Elias M. Awad, 3rd edition, PHI. (Chapters: 1, 6, 11, 13 &15)

CHAPTERS and SECTIONS (For UNIT-I, II, III,IV and V)

REFERENCE BOOKS:

1. E-COMMERCE Strategy, Technologies and Applications – David Whiteley, 2001, TMH.
2. INTRODUCTION TO E-COMMERCE – Jeffrey F. Rayport, Bernard J. Jaworski, TMH.

Web site Links: (E-learning resources)

https://www.tutorialspoint.com/e_commerce/e_commerce_security.html.



SOURASHTRA COLLEGE, MADURAI- 625004
(An Autonomous Institution Re-accredited with 'B' grade by NAAC)
B.Sc – INFORMATION TECHNOLOGY- SYLLABUS
(Under CBCS w.e.f. 2017 – 2018 onwards)

625

PART - III ELECTIVE	Title: PROJECT AND VIVA VOCE	Subject Code : 17UITEV1
Semester : VI	HOURS : 5 hours / Week	CREDITS : 5

1. A Maximum of two students can join to do the project work.
2. Students must undertake the project work under the guidance of a faculty member
3. Progressive reports have to be submitted to the guide periodically
4. The internal test marks is 40 and is divided into the following components
 - (i) Two Presentations – 2 x 10 = 20 Marks
 - (ii) Progressive Reports - 10 Marks
 - (iii) Internal Viva-voce - 10 Marks
5. The external examination will be jointly conducted by both the Internal and External Examiners
6. The Student must submit 3 copies (2 copies for students + 1 copy for the Dept.) of their project Report two week before the external examination.
7. The maximum marks for the external examinations is 60 and it may be divided into the following components
 - (i) Project Report - 20 marks
 - (ii) Project Presentation - 20 marks
 - (iii) Project viva-voce - 20 marks