**Annexure I**
**REGULATION 2021 - 22**
**B.SC. INFORMATION TECHNOLOGY**
**SEMSTER I B.SC. INFORMATION TECHNOLOGY**

| SL. | COMPONENTS | HOURS | CREDITS |
|---|---|---|---|
| 1. | PART 1 TAMIL / OTHER LANGUAGES | 6 | 4 |
| 2. | PART II ENGLISH | 6 | 4 |
| 3.<br>4. | PART III CORE SUBJECTS<br>INTRODUCTION TO INFORMATION TECHNOLOGY AND HTML<br>PROGRAMMING IN HTML- LAB | 4<br>3 | 4<br>2 |
| 5.<br>6. | PART IV ALLIED SUBJECTS<br>OFFICE AUTOMATION<br>OFFICE AUTOMATION - LAB | 3<br>2 | 3<br>1 |
| 7. | ADD ON COURSE (Mandatory) PROFESSIONAL ENGLISH | 4 | 4 |
| 8. | ENVIRONMENTAL STUDIES | 2 | 2 |
| | TOTAL (6T + 2P = 8 COURSE) | 30 | 24 |

**SEMSTER II B.SC. INFORMATION TECHNOLOGY**

| SI. | COMPONENTS | HOURS | CREDITS |
|---|---|---|---|
| 1. | PART I TAMIL / OTHER LANGUAGES | 6 | 4 |
| 2. | PART II ENGLISH | 6 | 4 |
| 3.<br>4. | PART III - CORE SUBJECTS<br>C- PROGRAMMING<br>PROGRAMMING IN C – LAB | 4<br>3 | 4<br>2 |
| 5.<br>6. | PART IV - ALLIED SUBJECTS<br>DIGITAL DESIGN<br>LINUX - LAB | 3<br>2 | 3<br>1 |
| 7. | ADD ON COURSE (MANDATORY) PROFESSIONAL ENGLISH | 4 | 4 |
| 8. | VALUE BASED EDUCATION | 2 | 2 |
| | TOTAL (6T + 2P = 8 COURSE) | 30 | 24 |

# INTRODUCTION TO INFORMATION TECHNOLOGY AND HTML

## UNIT – I
***Information Technology Basics :*** Introduction, Information, Technology, Information technology, Present Scenario, Role of Information Technology, Information technology, and internet, careers in IT industry – Computer Memory and Storage Introduction, memory hierarchy, Random Access Memory (RAM), Read Only memory (ROM).
***Input Output Media :*** Introduction, types of input devices, type of output devices.

## UNIT – II
***Internet :*** Introduction – what is Internet – History of Internet – How the web works – Web server and clients – ISP, ISDN – Domain naming system – Internet - URL - protocol – server name – port – Relative URLs and Absolute URLs

## UNIT – III
***Hypertext :*** HTML – Basic components of HTML – Formatting the HTML text – linking to other HTML Documents – Linking inside the same document – Linking to other Internet Services
***Lists in HTML :*** Ordered Lists - Using ordered lists - Unordered Lists - Directory Lists - Definition Lists - Combining list types

## UNIT – IV
***Graphics and Web pages :*** Image formats and Browsers – Graphics and HTML Documents – Images and Hyperlink anchors – Image Maps
***HTML Tables :*** aligning table elements – row and column spanning – frames in HTML – Frameset container HTML Forms – The <input> tag – Scrolling Marquees

## UNIT – V
***Introduction of CSS :*** Syntax – Selectors - Display Positioning – Grid - Fonts and Text Effects -Colors, Gradient, Background Images - @keyframes - Transitions,Transforms and Animations


**Text Books:**

1. Computer Fundamentals and windows with Internet Technology – N.KRISHNAN.

2. Fundamentals of Information Technology by Alexis Leon and Mathews Leon Vikas Publication. New Delhi

**Reference Books:**

1. Introduction to Computers, Peter Norton, sixth edition, Mc-Graw Hill Companies.

2. HTML Introduction to Web Page Design and Development, David Mercer, Tata Mc-Graw Hill Publishing Company Limited.
3. HTML & CSS :The Complete Reference, Thomas Powell

**UG-Colleges /Part-III (B.Sc. Information Technology) /Semester – I / Major Practical -1**

**Programming in HTML - LAB**

1. a. Write HTML code to develop a web page having the background in red and body "My First Page" in any other color.

   b. Create a HTML document giving details of your name, age, telephone, address, roll no. using align tag.

   c. Write HTML code to design a page containing a text in a paragraph give suitable heading style. 4. Design a page having background color given text color red and using all the attributes of font tab.

2. a. Write HTML code to create a WebPage that contains an Image as its center.

   b. Create a web Page using href tag having the attribute alink, vlink.

   c. Write a HTML code to create a web page of pink color and display moving message in red color.

3. a. Create a web page, showing an ordered list of name of your five friends.

   b. Create a HTML document containing a nested list showing the content page of any book

   c. Create a web page, showing an unordered list of name of fruits

4.  Create a table in HTML with Dummy Data Name of Train Place Destination Train No Time Fare Arrival Departure

5.  Write HTML code to create a web page that displays your class time table.

6. a. Create a web page with Table using Frame concept

   b. Create a web page having two frames one containing links and another with contents of the links. When link is clicked appropriate contents should be displayed on Frame 2.

7.  Design an application form using all input types

8.  Design a website of your own by using all html tags.

9. Create students registration and login webpage using css

10. Create a mobile showroom advertisement using css

## OFFICE AUTOMATION

### UNIT – I

***Microsoft word:*** Word processor Basics – Opening Microsoft Word – Closing the Document and Quitting Word – Starting Microsoft Word XP - Introduction to word – Saving the Document – Previewing – Printing – Closing – Changing the size of a document.

***Editing the Document:*** Opening an existing word document – Moving the cursor – Making changes in your document – Undoing any operation – Saving changes made to the Document– Checking Spelling in the Document – Automatic correction of errors – Printing the file – Saving and Closing the Document.

### UNIT – II

***Designing your Document:*** Creating a well formatted Document – Setting the Left , Right , Top and Bottom Margins – Setting page Numbers on your Document – Specifying text at the top and the Bottom of each page.

***Creating Tables:*** Selecting Text using the mouse – Inserting Rows – Inserting Columns – Deleting a Row – Deleting a Column – Formatting the Text – Mail Merge.

### UNIT – III

***Microsoft Excel:*** Introduction to Spreadsheets – Use of Spreadsheet – Spreadsheet Basics – Formatting a Spreadsheet – Graphs – Functions of Microsoft Excel – Starting Microsoft Excel – Excel Work Environment – Changing size of a Work book and Excel Window – Cell and Cell Address – Standard Toolbar – Formatting toolbar – the Formula bar – Status bar – Components of an Excel Workbook.

***Working in Excel:*** Entering data in cell address – Making changes to an entry – Mathematical Calculations – Formulas using numbers – Formula using Cell address – Defining functions simple Graphs.

### UNIT – IV

***Microsoft Access:*** Introduction to Databases – Defining a Database – Understanding RDBMS– objects of a Relational Database – Macros – Functions of a DBMS – Starting Microsoft Access – Creating Tables – Understanding Database – Creating database - Creating a Table – Working on Tables – Saving the Table – Defining primary Key – Closing the Table – Closing the Database window and Quitting Access.

### UNIT – V

***Microsoft PowerPoint:*** Starting PowerPoint – Creating a presentation – Saving a Presentation– working with views – Adding Graphics, Charts and Tables – Masters – Using Slide Transition- Printing – Closing the Slides – Quitting Microsoft PowerPoint.

**Text Book:**

1. VIKAS GUPTA, "Comdex Computer Course Kit (XP Edition)", Dreametech press, New Delhi.

**References:**

1. Stephen L. Nelson, "The Complete Reference office 2000" Tata McGraw – Hill Publishing Company limited, New Delhi.

2. N. Krishnan, "Window and MS Office 2000 with Database Concepts" Scitech publications (India) Pvt Ltd., Chennai

**Part-III (B.Sc. Information Technology) / Semester – I / Allied Practical -1**
**OFFICE AUTOMATION– LAB**

**I – SEMESTER**

**MS – Word**

1. Prepare a word document for spell checking and Thesaurus.
2. Prepare a documents and apply Cut, Copy and Paste operations.
3. Find a word and Replace with another in a document.
4. Insert Header and Footer with the name of the Dept and Page No. in a document.
5. Insert a picture in your document.
6. Insert mathematical symbols using Microsoft equation 3.0.
7. Preparing News paper format (Apply Alignment, Font, Property, Line spacing, Picture Format).
8. Preparer a Bio-Data and insert the contents of qualification within the table.
9. Mail Merge
10. Macro.

**MS – Excel**

1. Apply formulas and functions
2. Prepare a chart for population growth.
3. Create a Pivot table.
4. Apply ascending and descending.
5. Apply auto format

**MS – PowerPoint**

1. Create a power point presentation with 3 slides.
2. Create a design template with 3 slides.
3. Create a presentation with animation.

4. Create a power point presentation with 4 slides. Set slide transition time of 3 seconds and Display your presentation.

5. Create a presentation with auto content wizard.

### MS – Access

1. Create an employee database.
2. Create a students database. Set a filed to primary key.
3. Create an salary list preparation.
4. Create an report.
5. Create an Mailing labels.

## C PROGRAMMING

### UNIT – I

*Introduction* – Character set – C Tokens – Keywords and Identifiers- Constants – Variables – Data Types – Declaration of Variables – Declaration of Storage class- assigning values to Variables – defining Symbolic Constants – Declaring Variable as Constant – Declaring Variables as Volatile – Overflow and Underflow of Data.

*Operators and Expressions:* Introduction – Arithmetic Operators - Relational Operators- Logical Operators – Assignment Operators – increment and decrement operators – Conditional Operators - Bitwise Operators - Special Operators - Arithmetic Expressions - Evaluation of Expressions – precedence of Arithmetic Operators – Some computational problems – Type conversions in Expressions – Operator Precedence and Associativity – Mathematical Functions.

*Managing Input and output Operations:* Introduction - Reading a character - Writing a Character - Formatted Input - Formatted Output.

### Unit II:

*Decision Making and Branching:* Introduction – Decision Making with IF statement – Simple IF Statement – The IF..Else Statement – Nesting of IF.Else Statements – The ELSE IF Ladder – The Switch statement – The? Operator –The GOTO Statement.

*Decision Making and Looping:* Introduction – the WHILE Statement – The DO Statement- The FOR Statement –Jumps in Loops – Concise Test Expressions.

### UNIT III:

*Arrays:* Introduction – One Dimensional Arrays – Declaration of One Dimensional Arrays – Initialization of One Dimensional Arrays-Two Dimensional Arrays – Initializing Two Dimensional Arrays –Multi – Dimensional Arrays –Dynamic Arrays.

***Character Arrays and Strings:*** Introduction – Declaring and Initializing string Variables – Reading strings from Terminal – Writing Strings to screen Arithemetic Operations on Characters –putting strings to together- Comparison of Two strings – String Handling Functions –Table of strings.

## UNIT IV:

***User – Defined Functions:*** Introduction – Need for User – Defined Functions – a multi-Function Program – Elements of User- Defined Functions –Definition of Functions – Return values and their types – Function Calls – Function Declaration – Category of Functions – No Arguments and No Return Values – Arguments but No Return Values – Arguments with Return Values – No Arguments but returns a Value – Function that returns multiple values – Nesting of Functions – Recursion- Passing Arrays to Functions – Passing Strings to Functions – The Scope, Visibility and Lifetime of Variables-Multifile programs.

***Structure and Unions:*** Introduction - Defining a Structure – Declaring Structure Variables- Accessing Structure Members – Structure Initialization Copying and Comparing Structure Variables- Operations on Individual Members – Arrays of Structures – Arrays within Structures – Structures with Structures – Structures and Functions – Unions – Size of Structures – Bit Fields.

## UNIT V:

***Pointers:*** Introduction – Understanding Pointers – accessing the Address of a Variable – Declaring Pointer Variables – Initialization of pointer variables – Accessing a variable through its pointer – chain of pointers Expressions – pointer increments and scale Factor – pointers and Arrays – Pointer and Character Strings – Array of pointers – pointers as Function Arguments – Functions Returning pointers –pointers to functions –pointers and structures – Troubles with pointers. File Management in C: Introduction – Defining and Operating a File – Closing a file – Input /output Operations on Files –Error handling During I/O Operations – Random access to Files – Command Line Arguments.

**Text Book:**

Programming ANSI C 4E-E Balagurusamy, Tata McGraw – Hill Publishing company Limited.

**Reference Books:**

1. Schaum's outlines Programming with C- Byron s. Gottfrioed, Second Edition, Tata McGraw – Hill publishing company Limited.

2. The complete Reference C – Herbert Schildt, Fourth Edition, Tata McGraw-Hill Publishing Company limited.

3. Programming with ANSI and Turbo C- Asok N. Kamthane, pearson Educations.

**Part-III (B.Sc. Information Technology) / Semester – II / Major Practical**

**PROGRAMMING IN C - LAB**

1. Write a C program to check the given number is prime or not.

2. Write a program to calculate simple Interest and Compound Interest.

3. Writer a C program to find the roots of a Quadratic Equation using simple if statement.

4. Writer a C program to sort numbers in ascending order using for statement.

5. Writer a C program to print Fibonacci Series using while statement.

6. Writer a C program to find the value of 13+23+53+………+253 using do… while

   Statement.

7. Writer a C program to print the grade of a student using switch… case statement.

8. Writer a C program for simple calculator using switch/case loop.

9. Writer a C program to read in a three digit number produce following output (assuming that the input in 539) 5 hundreds 3 tens 9 units.

10. Writer a C program for swapping two variables without using third variable.

11. Writer a C program to prepare EB Bill using if…elseif ladder.

12. Writer a C program to find sum of Digits and reverse of the number using function.

13. Writer a C program to find factorial and GCD value using recursion.

14. Writer a C program to find the product of two Matrices.

15. Writer a C program to arrange the names in alphabetical order using strcmp() function.

## DIGITAL DESIGN

**Unit – I**

Digital Systems and Binary Numbers: Digital Systems – Binary Numbers – Numbers – Base Conversions – octal and Hexadecimal Numbers – Complements – Signed Binary Numbers – Binary Codes – Binary Storage and Registers- Binary Logic.
*Boolean Algebra:* Introduction – Basic Definitions – Axiomatic Definition of Boolean algebra – Basic Theorems and properties of Boolean Algebra – Boolean Functions.

**Unit – II**

*Logic Gates:* Canonical and Standard Forms – other Logic Operations – Digital Logic Gates – integrated                                                                                                          Circuits.
*Gate –Level Minimization:* Introduction – The Map Method –Four-Variable Map – Five -Variable Map – Product –of-Sums Simplification –Don't Care Conditions.
*NAND and NOR Implementation* – Other Two – Level Implementations – Exclusive OR Function.

**Unit – III**

*Combinational Logic:* Introduction – Combinational Circuits – Binary Adder – Subtractor – Decimal Adder – Binary Multiplier – Magnitude Comparator – Decoders – Encoders – Multiplexers
*Synchronous Sequential Logic:* Introduction – Sequential Circuits - Storage Elements - Latches – Storage Elements: Flip-Flops.

**Unit – IV**

*Registers and Counters:* Registers – shift Registers – Ripple Counters – Synchronous Counters – Other Counters.
*Memory:* Introduction – Random Access Memory – Memory Decoding – Error Detection and Correction – Read Only Memory

**Unit – V**

*Basic Computer Organization and Design*: Instruction Codes – Computer Registers – Computer Instructions – Timing and Control – Instruction Cycle – Memory-Reference Instructions – Input-Output and Interrupt – Complete Computer Description – Design of Basic Computer – Design of Accumulator Logic.

**TEXT BOOKS:**
1. M. Morris Mano, Michael D. Ciletti, "Digital Design", Prentice Hall of India Private Ltd
2. M. Morris Mano, Computer System Architecture, Prentice-Hall of India Private Ltd.

**REFERENCE BOOKS:**
1. Albert Paul Malvino, Donald P.Leach, "Digital Principles and Applications", Tata McGraw –Hill Publishing Company Limited, New Delhi.
2. Donald D. Givone, "Digital Principles and Design" Tata McGraw–Hill Publishing Company Limited, New Delhi.
3. RP Jain, "Modern Digital Electronics", Tata McGraw–Hill Publishing Company Limited, New Delhi
4. Andrew S. Tannenbaum, "Structured Computer Organization", Pearson India, 2016

**LINUX – LAB**

**Each exercise should be completed within three hours. It is compulsory to complete all the exercises given in the list in the stipulated time.**

1. Use any text editor in linux(say vi) to enter a C program to find the largest of three numbers, compile using gcc and display the output.

2. Use any text editor in linux(say vi) to enter a C program to find the factorial of a given number, compile using gcc and display the output.

3. Linux commands

    a. ls, mkdir, rmdir, cd, pwd, find, du(Directory oriented)

    b. cat, cp, rm, mv, wc (File oriented)

    c. ps, kill, batch, grep(Process oriented)

    d. write, mail, wall (Communication oriented

4. Linux commands

    a. date, who, who am i, man, cal, echo, bc(General purpose)

    b. Pipe, Filter

5. Write a shell script to display date in the mm/dd/yy format, time, username and current directory.

6. Write a shell script to find the sum of digits of a given number.

7. Write a program to generate Fibonacci series.

8. Write a program to check whether given string is palindrome or not

9. Write a shell script to find factorial of a given integer.

10. Write a shell script to generate mark sheet of a student. Take 3 subjects, calculate and display total marks, percentage and Class obtained by the student.

**Reference Books:**

1. Linux: A practical approach, B. Mohamed Ibrahim, Firewall Media

2. Comdex Linux and Open Office course kit revised and upgraded, Gupta, Wiley India.

3. A practical guide to Linux command, editors, and shell programming 2/e; Mark G Sobell, Prentice Hall.

4. Linux Lab - Open source Technology : Ambavade - Dreamtech