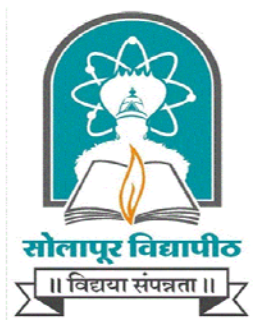# Solapur University, Solapur

B.Sc. (Computer Science)

Syllabus (Semester – I and II)

(Choice Based Credit System)

With Effect from June 2016

B.Sc. (Computer Science) Part – I Semester-I

Sr. No.	Paper Code	Title of the Paper	Contact hours/week		Distribution of Marks for Examination			Credits
			Lect	Prac	Internal	University	Total	
I	CS101	Communication Skill-I (English compulsory)	04	--	30	70	100	4
II	CS102	Fundamental of Computer	2.5	--	30	70	100	2.5
III		Programming using C	2.5	--	30	70	100	2.5
		Total	9	--	90	210	300	9

B.Sc. (Computer Science) Part – I Semester-II

Sr. No.	Paper Code	Title of the Paper	Contact hours/week		Distribution of Marks for Examination			Credits
			Lect	Prac	Internal	University	Total	
I	CS201	Communication Skill-II (English compulsory)	04	--	30	70	100	4
II	CS202	Introduction to Web Designing	2.5	--	30	70	100	2.5
III		Introduction to Programming Using C-II	2.5	--	30	70	100	2.5
		Total (Theory)	09	--	90	210	300	9
III	PRACT	LAB – I: Laboratory Course in Computer Science	--	04	30	70	100	4
		Total (Practical)			30	70	100	4

Internal- College Assessment, University- University Assessment, Lect- Theory Lecture, Pract- Practical

- **LAB –I:Laboratory Course in Computer Science is based on papers ECS102 and ECS202**

Title of the Course: B.Sc. – I (Computer Science) SEM-I

Subject: Computer Science

Fundamental of Computers

Unit I:-**Introduction to Computer** [10]

Introduction to computers, Evolution of personal computers; Generation of computers; Elements of a computer processing system- Hardware & Software, various categories of software; Computer Organization Overview-CPU, I/O devices, storage devices and media; Various type of displays and other peripherals used in PCs.

Unit II:-**Operating System Concept** [10]

Introduction to Operating system, Purpose of Operating Systems, services and features of OS, Types of Operating System, Components of OS.

Introduction to PC Operating Systems:- DOS, Windows operating System, Linux operating system, Concept and working with files and folders.

Introduction to Mobile Operating System: -Android, Windows, IOS, Symbian

Unit III:-**Microsoft Office** [20]

Microsoft Word:-Introduction to MS Word, opening, creating, saving, deleting document, page setting, formatting page, formatting text, adding images, Header footers, border and shading, bullets, mail merge, Table, graphics, label, Templates, Wizards and Printing Techniques.

Microsoft Excel:- Introduction to excel, File management in excel, operations related to workbook, Formatting sheet, adding formulate and functions, charts and maps, data menu, view menu, work with multiple worksheets, importing and exporting of data.

Microsoft PowerPoint: Introduction and Applications of Power Point, Create a New Presentation, Adding Slides, Clip Arts, Smart art, Charts, Text , images and other objects, Templates and Master Slides, Giving Animation effects, Links and Action buttons

Reference Books

1. Computer Fundaments - P.K. Sinha.
2. Fundamental of computers - V. Raja Raman.
3. Computer Fundamentals- Anita Goel
4. Fundamentals of Information Technology - Chetan Srivastava.
5. Computer Fundamental -B. Ram

Title of the Course: B.Sc. – I (Computer Science) SEM-I

Subject: Computer Science

Programming Using C

Unit I:-**Introduction to Programming** [8]

Programming languages (Machine Languages, Assembly Languages, High level languages), Compiler, Assembler, Interpreter.

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation., Concept of Algorithm, Characteristics, Notation of Algorithm, Designing Algorithms Writing step by step procedure, Flowcharts- Definition, Symbol, features, representation in terms of Flow chart, Advantages and Limitations of Flow Charts, Pseudo code generation, Tracing, Testing,

Unit II:-**Introduction to 'C'** [16]

History, Features of C, Structure of 'C' programming, C-Tokens, Data types, Operators, Control Statements-Conditional control statements, Looping, Unconditional control statements

Unit III:-**Arrays and String** [16]

Array definition and declaration, Types of array, Accessing Array, array manipulation, searching, insertion, deletion of an element from an array, basic matrix operations, dynamic array, String-Declaration and Initialization of String, operation on string, inbuilt String handling functions, arithmetic operation on string, table of string.

References

1. Let us C- Y. C. Kanetkar
2. C programming- Dennis Ritchie
3. Programming in C- Goterfried
4. Programming in C – E. Balagurusamy

Title of the Course: B.Sc. – I (Computer Science) SEM-II

Subject: Computer Science

Introduction to Web Designing

Unit I:- Overview of HTML & HTML5   [12]

Introduction to Networking, Network topology, LAN, MAN, WAN, Introduction to Internet, Requirement for Internet.

Introduction to HTML, Overview of basic HTML , Structure of HTML, Creating and opening HTML file, Singular and paired tags, Text formatting tag, Anchor tag, Lists, Image, Image Map, Table, Frames and Frameset,

HTML5: Introduction to HTML5, Need of HTML5, DOCTYPE Element, Tags-Section, Article, aside, header, footer, nav, dialog, figure etc. Events in HTML5, Input tag (Type, Auto focus, placeholder, required etc. attributes.) in HTML5, Graphics in HTML5, Media tags in HTML5

Unit II:- Introduction to CSS   [8]

Introduction to CSS, Use of CSS, Types of CSS, Selectors, Properties, Values.

CSS Properties :- Background, Text, Fonts, Link, List, Table, Box Model, Border, Margin, Padding, Display, Positioning, Floating, Opacity, Media type, Backgrounds and Borders   Image, Values and Replaced Content, Text Effects,2D/3D Transformations ,Animations, Multiple Column Layout   ,User Interface, CSS interact with JavaScript.

Unit III:- JavaScript   [20]

Introduction to JavaScript , JavaScript Variables & Data types, Operators, Bulit in functions in JavaScript ,Control structure in JavaScript ,DOM, Math, Array, History, Navigator, Location, Windows, String, Date, Document objects, user defined function, Validation in JavaScript, event & event handling in JavaScript.

Reference Books:-

1. HTML5 Black Book   Kogent Learning Solutions Inc   Dreamtech.
2. Beginning JavaScript and CSS Development with jQuery Richard York.
3. Beginning HTML and CSS   Rob Larsen.
4. HTML_&_CSS_The_Complete_Reference   Thomas A. Powell.(Fifth Edition).

Title of the Course: B.Sc. – I (Computer Science) SEM-II

Subject: Computer Science

Introduction to Programming Using C-II

Unit I:-**Function and Pointer** [16]

Definition, declaration, function prototypes, Local and global variables, User defined functions, recursion, passing array and string to function, Storage classes
 Pointers-Definition and declaration, Operation on pointer, Pointer initialization, Pointer and function, Pointer and array, Pointer of pointer, Call by value and Call by reference, Dynamic memory allocation

Unit II:-**Structures and Union** [10]

Definition and declaration, copying and comparing of structure, Array of structures , Passing structure to function, Pointer to structure , Nested structure, self referential structure, Size of and type def, Definition and declaration of union, difference between structure, union and array.

Unit III:-**File Handling** [14]

Defining, opening and closing of file, operations on file, Standard input and output functions, Formatted input and output functions, File opening modes, Error handling, Random access of file, command line argument.
 Macros and Preprocessing-Features of C preprocessor, Macro – Declaration, Expansion, File Inclusion
Graphics using C - VDU Basics, Simple library functions-getpixel, putpixel, line, rectangle, circle, ellipse, arc etc.

Reference Books:-
> 1. Let us C- Y. C. Kanetkar
> 2. C programming- Dennis Ritchie
> 3. Programming in C- Goterfried
> 4. Programming in C – E. Balagurusamy

Laboratory course in Computer Science

1) Demonstration of peripherals
2) DOS – external and internal commands, batch files commands
3) Windows Operating System –
4) Windows explorer, program manager, control panel, print manager, Creating folders, files, icons, shortcuts
5) MS – WORD – Creating new documents, typing, deleting, selecting text, undo, Redo, formatting text – auto format, formatting characters, drop caps, Paragraphs, line spacing, margins, page setup, headers and footers Writer's tools – spelling checker, auto format, auto correct, find and replace Mail merge – Data source, Main document, creating mail merge document.
6) MS – EXCEL - Creating worksheet, Graphs, resizing graphs, formulas, if Statement, types of functions
7) MS-Powerpoint-Creating presentation, slideshow, adding slides, inserting clip arts, smart art, images, sound files, linking etc.
8) Internet – creating e – mail accounts, browsing.
9) Design HTML page to display student Information
10) Design HTML page for all lists.
11) Design HTML page for Image map, table, frameset tags.
12) Create a web page using the Internal/Linked/External style sheet using Text formatting properties, CSS Borders, Margin Properties, Color properties, Use DIV and SPAN tag properties.
13) Write a JavaScript code working with functions: the alert Box, the confirm Box , the prompt Box etc.
14) Solve Following program using JAVA Script to check given number is
    i)   even or odd
    ii) Prime or not
    iii) palindrome or not.
    iv) perfect or not
15) Write a JavaScript code block using objects: String Object, Boolean Object, Number Object, Date Object, Math Object, Window Object, Navigator Object , History Object, Screen Object, Location Object etc.

16) Write a Program to convert the Temperature in centigrade degree to the Fahrenheit degree.

17) check whether given number is even or odd.

18) Write a program to find out First Fifty Prime numbers.

19) Write a program to find GCD & LCM of given number.

20) Write a program to convert given Binary number into its Octal / Decimal, Hexadecimal Equivalent.

21) Write a program to display Fibonacci series.

22) Write a Recursive function to find out the Factorial of Given Number.

23) Write a program to remove blank lines from a file.

24) Write a program to count the no. of words in a given text file.

25) Write a program to reverse the given number.

26) write a program to calculate Matrix Addition, Multiplication using Functions as well as without Functioning.

27) Write a program to find given string is Palindrome or not using function.

28) Write a program that accepts the Roll No, Name, Marks obtained in three tests of 'N' students & display the total and Average in tabular format.

29) Write a program to accepts two alphabets and pass them to the Function via Pointers Which checks for type of these alphabets. If both alphabets are Vowels then function should return to the calling function, their previous alphabets. If both alphabets are Constant then function should return their successor alphabets.

30) Write a program which uses simple graphics functions.

31) Write a program to add two Matrices; Use two Dimensional array as Pointer & Dynamic Memory allocation.

32) Write a program to input 10 names each of the length at least 8 characters sort them in a alphabetical order.

33) Write a program to demonstrate macro substitution.

34) Write a program to demonstrate file inclusion mechanism.

Syllabus Equivalence Table of B. Sc. (CS) I, SEM I

Sr. No.	Old Syllabus (June 2014) Credit System Structure	Paper Code	New Syllabus (June 2016) Choice based Credit System
	Title of the paper		Title of the Paper
1.	English paper I (compulsory)	CS101	Communication Skill-I (English Compulsory)
2.	CSSC1 CS1 – Computer Fundamentals and Programming using C – I		--
3.	--	CS102	Fundamental of Computer Programming using C

Syllabus Equivalence Table of B. Sc. (CS) I, SEM II

Sr. No.	Old Syllabus (June 2014) Credit System Structure	Paper Code	New Syllabus (June 2016) Choice based Credit System
	Title of the paper		Title of the Paper
1.	English paper II (compulsory)	CS201	Communication Skill-II (English Compulsory)
2.	ECS201– Computer Fundamentals And Programming using C – II		--
	--	CS202	Introduction to Web Designing
			Introduction to Programming Using C-II
3.	CSSC CSPR – Lab – I		--
		PRACT	LAB – I: Laboratory Course in Computer Science