



Karmaveer Bhaurao Patil University, Satara

Syllabi for B.Sc. I Computer Application

Under Faculty of Science and Technology

(As per NEP 2020)

With effect from Academic Year 2026-2027

Syllabi for Bachelor of Science (B. Sc.) Part – I Computer Application

PREAMBLE:

The Courses of B.Sc. Part-I Computer Application will be introduced in academic year 2026-2027 of B.Sc. Computer Application Programme. It has been designed to meet the specific needs of B.Sc. Computer Application students in accordance with the NEP 2020 guidelines. The curriculum reflects the rapidly evolving field of computer science and its applications in various domains such as software development, data science, artificial intelligence, and web technologies.

The course emphasizes both theoretical knowledge and practical skills, enabling students to understand modern computing concepts along with their real-world applications. It incorporates updated technologies like Java, Python, Artificial Intelligence, Machine Learning, and Web Development.

This approach will help students to gain industry-relevant knowledge and develop problem-solving abilities. The course also includes practical sessions and project-based learning to provide hands-on experience. Additionally, it aims to motivate students to pursue higher education, become entrepreneurs, and seek employment opportunities in IT industries and related sectors.

GENERAL OBJECTIVES OF THE PROGRAM:

1. To provide students with a strong foundation in mathematics, computer science, and information technology.
2. To develop analytical thinking, logical reasoning, and problem-solving abilities for addressing computing challenges.
3. To equip students with the knowledge and skills required to design, develop, and implement software solutions using modern technologies.
4. To familiarize students with current and emerging technologies, including Artificial Intelligence, Machine Learning, databases, networking, and cloud computing.
5. To promote the effective use of modern computing tools, programming languages, algorithms, data structures, system software, databases, and software development methodologies for developing efficient and reliable computing solutions.
6. To foster research aptitude, innovation, and critical thinking for solving real-world problems.
7. To inculcate professional ethics, social responsibility, and awareness of cyber laws in computing practices.
8. To develop communication, teamwork, leadership, and project management skills for multidisciplinary professional environments.
9. To encourage students to contribute to societal, environmental, and industrial needs through technology-based solutions.
10. To promote lifelong learning, adaptability, and continuous professional development to meet the evolving demands of the IT industry and higher education.

GENERAL OUTCOMES OF THE PROGRAM:

After completing the B.Sc. program, graduates will:

1. Apply mathematics and computing fundamental and domain concepts to find out the solution of defined problems and requirement.
2. Apply computational thinking, analytical reasoning, algorithms, and problem-solving techniques to analyse complex problems and develop appropriate and efficient solutions.
3. Understand to design, analyze and develop solutions and evaluate system components or processes to meet specific need for local, regional and global public health, societal, cultural, and environmental systems.
4. Select and apply appropriate modern computing tools, programming languages, databases, networking technologies, web technologies, AI, ML, data analytics, and cloud computing techniques, while recognizing their capabilities and limitations.
5. Ability to apply and commit professional ethics and cyber regulations in a global economic environment.
6. Recognize the need for and develop the ability to engage in continuous learning as a Computing professional.
7. Create, select, and apply appropriate techniques, resources, and modern IT tools including database management, networking AI & ML with an understanding of their limitations.
8. Demonstrate knowledge and understanding of the management principles and apply them to one own work, and as a member and a leader in a team, to manage projects in multidisciplinary environments.
9. Design and conduct experiments, review the research-based knowledge, gather and interpret data to provide valid conclusions in the context of computer applications.
10. Recognize the need for, and ability to engage in independent and life-long learning.

PROGRAM SPECIFIC OBJECTIVES:

1. To provide students with comprehensive knowledge of programming concepts, computer applications, and software development methodologies.
2. To develop proficiency in programming languages, web technologies, databases, and modern software development tools.
3. To equip students with the skills to analyze, design, develop, test, and maintain software applications for real-world problems.
4. To enable students to apply algorithms, data structures, system software, and multimedia concepts in developing efficient computing solutions.
5. To prepare students to use data analytics, business intelligence, and information systems for effective decision-making and organizational needs.
6. To develop technical competence in emerging areas such as Artificial Intelligence, Machine Learning, Cloud Computing, and Data Analytics.
7. To inculcate professional ethics, effective communication, teamwork, and leadership qualities required in the IT profession.
8. To encourage lifelong learning and continuous professional development to adapt to rapidly evolving computing technologies and industry requirements.

PROGRAMME SPECIFIC OUTCOMES:

After completing the B.Sc. (Computer Application) program, students will:

1. Demonstrate competence in Programming Technologies.
2. Analyze their abilities in systematic planning, developing, testing and executing complex computing applications in field of social media and Analytics, Web Application Development and Data Interpretations.
3. Apprise in-depth expertise and sustainable learning that contributes to multi-disciplinary creativity, permutation, modernization and study to address global interest.
4. Explore technical comprehension in varied areas of Computer Applications and experience a conducive environment in cultivating skills for thriving career and higher studies.
5. Comprehend, explore and build up computer programs in the allied areas like Algorithms, System Software, Multimedia, Web Design and Data Analytics for efficient design of computer-based systems of varying complexity.
6. Proficient use of business software such as spreadsheets, databases, and programming languages.
7. Capability to analyze business needs and create information systems that are organized, secure, and aligned with organizational goals.
8. Skillful application of computer tools for analyzing business processes, extracting insights from data, and supporting informed decision-making.

1. **TITLE:** Computer Application

2. **YEAR OF IMPLEMENTATION:** From 2026-2027

3. **DURATION:** 01 Year

4. **ELIGIBILITY:** 12th Science Pass

5. **PATTERN:** Semester

6. **MEDIUM OF INSTRUCTION:** English

7. STRUCTURE OF COURSE

As per NEP 2020 (2.0)

Sem (Level)	Courses			OE	VSC/ SEC	AEC/ VEC/ IKS	OJT/ FP/ CEP/ CC/ RP	Total credit
	Course I	Course II	Course III					
Sem I (4.5)	DSC I (2) DSC II (2) DSC P I (2)	DSC I (2) DSC II (2) DSC P I (2)	DSC I (2) DSC II (2) DSC P I (2)	OE I (2)	-	IKS I (2) (Generic)	-	22
SEM II (4.5)	DSC III (2) DSC IV (2) DSC P II (2)	DSC III (2) DSC IV (2) DSC P II (2)	DSC III (2) DSC IV (2) DSC P II (2)	OE II (2)	-	VEC I (2) DEGG and IIC	-	22
Credits	12	12	12	04	-	04	-	44

DSC: Discipline Specific Course, OE: Open Elective Course, IKS: Indian Knowledge System, VEC: Value Education Course

8. COURSE TITLE

Semester I				
Sr. No.	Components	Course Code	Course Title	Credits
1	Course-I	BCAT 111	Computer Organization and Architecture	2
2		BCAT 112	Problem Solving and Programming in C	2
3	Major Practical	BCAP 113	Practical I	2
Total				06
Semester II				
Sr. No.	Components	Course Code	Course Title	Credits
1	Course I	BCAT 121	Advance C Programming	2
2		BCAT 122	Web Page Designing	2
3	Major Practical	BCAP 123	Practical II	2
Total				06

9. EVALUATION STRUCTURE:

B.Sc. I, Level 4.5, NEP 2.0

Semester I

Course	Course Category	Course Code	Internal Evaluation	ESE	Total Marks	Credits
DSC I	T	BCAT 111	20	30	50	02
DSC II	T	BCAT 112	20	30	50	02
DSC P I	P	BCAP 113	20	30	50	02
Total					150	06

B.Sc. I, Level 4.5, NEP 2.0

Semester II

Course	Course Category	Course Code	Internal Evaluation	ESE	Total Marks	Credits
DSC III	T	BCAT 121	20	30	50	02
DSC IV	T	BCAT 122	20	30	50	02
DSC P II	P	BCAP 123	20	30	50	02
Total					150	06

INTERNAL EVALUATION STRUCTURE

- Internal evaluation of theory papers shall carry a weightage of 40%.
- Activity: For the internal evaluation of theory papers following activities will be adopted for CCE I& CCE II: class test/ open book test/ online course/ Industrial review/ Industrial visit/ e-learning video creation/ assignment/seminar/ case study/ fieldwork/ project.
- CCE III shall consist of multiple-choice questions.
- Each CCE will carry 10 marks for 2-credit theory papers and 20 marks for 4-credit theory papers, and the best two scores will be considered for final score.
- Internal evaluation of practical papers shall carry a weightage of 40%.
- For practical examinations, internal evaluation will be based on student performance, attendance, journal records, and viva voce.

CCE: Continuous Comprehensive Examination, ESE: End Semester Examination, T : Theory, P: Practical

10. OTHER FEATURES:

a. LIBRARY:

Reference books, Textbooks and journals are available in Institute and Departmental Library.
(Separate reference lists are attached along with the respective course syllabus)

b. EQUIPMENT:

- Computers: 120
- Smart Boards: 3
- Internet Connection
- MS-Office
- Turbo C
- Visual Studio Code



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Faculty of Science and Technology

Yashavantrao Chavan Institute of Science, Satara

Board of Studies in Computational Science (Computer Application)

Programme: B.Sc.

Semester - I

Type: DSC

Marks: 50

Credits: 2

From: A. Y. 2026-27

**Name of the Course & Code: Computer Organization and
Architecture (BCAT 111)**

Course Objectives: Students should be able to,

- 1) Understand the basic components of a computer system.
- 2) Learn different input/output devices and types of computer memory.
- 3) Study the concepts Operating System.
- 4) Understand the principle of Office Automation.

Course Outcomes: Students will be able to,

- 1) Study the basic components of a computer system and their functions.
- 2) Understand the concepts of Memory and its types.
- 3) Demonstrate the interactions between hardware and software components.
- 4) Learn the role of operating systems in managing computer resources.

Module	Title and Contents	Hrs.
Module -1:	Introduction to Computer and Basic Organization 1.1 Introduction of Computer, Characteristics, Advantages & Limitations. 1.2 Generation of computers, Types of Computers and its Applications. 1.3 Basic Components of Computer System. 1.4 Block Diagram of computer.	7
Module -2:	Input, Output Devices and Concept of Memory 2.1 Input Devices, Output Devices, Memory and its types. 2.2 CPU (Central Processing Unit) – ALU, Control Unit, Registers. 2.3 Computer Languages –Machine Language, Assembly Language, High-Level Language. 2.4 Translators – Assembler, Compiler, Interpreter.	8
Module -3:	Operating System concepts 3.1 Definition, Functions and types of operating system. 3.2 Structure and Services of operating system & its User Interface. 3.3 System Calls and System Programs. 3.4 Process Management and Deadlock Handling.	8

Module -4:	Microsoft Office Tools & Storage Management 4.1. MS–Word- Introduction, Formatting with Documents, creating table. 4.2. MS–Excel: -Introduction, Sorting, Queries, Graphs, Scientific Functions. 4.3. MS–PowerPoint: - Introduction, slide creation Inserting Images, Applying Animations & Slide Show Design. 4.4. MS–Access: - Introduction, Database Creation Manipulation of Files Storage Management- File System Interface, file access method Directory Structure, File system mounting.	7
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Reference Books: -

- 1) Wempen, Faithe. Computing Fundamentals: Introduction to Computers. Wiley, 2023.
- 2) Brookshear, J. Glenn, and Dennis Brylow. Computer Science: An Overview. 13th ed. Pearson, 2022.
- 3) Sinha, P. K., and Priti Sinha. Computer Fundamentals. 8th ed. BPB Publications, 2021.
- 4) Godbole, Achyut S., and Atul Kahate. Operating Systems. McGraw Hill Education, 2014.
- 5) Silberschatz, Abraham, and Peter B. Galvin. Operating System Concepts. 4th ed. Addison-Wesley, 1994.

Evaluation Pattern:

Total Marks: 50

Internal Continuous Evaluation (20 Marks):

- CCE - I: 10 Marks: Activity
- CCE - II: 10 Marks: Activity
- CCE - III: 10 Marks: MCQ Test

(Best of 2 from CCE I, II & III Selected for final Score)

End Semester Examination (30 Marks):

- Question -1: Solve the following questions
(Five questions of 2 Marks)
- Question -2: Attempt any two questions
(Three questions of 10 marks)
- Question -3: Attempt any four questions
(Five questions of 5 marks)

Note: Conversion of 50 Marks of ESE evaluation to 30 Marks



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Faculty of Science and Technology

Yashavantrao Chavan Institute of Science, Satara

Board of Studies in Computational Science (Computer Application)

Programme: B.Sc.

Semester - I

Type: DSC

Marks: 50

Credits: 2

From: A. Y. 2026-27

Name of the Course & Code: Problem Solving & Programming in C
(BCAT 112)

Course Objectives: Students should be able to,

- 1) Introduce programming paradigms, algorithms, and flowcharts.
- 2) Understand concepts of arrays.
- 3) Evaluate expressions and control program flow.
- 4) Perform decision-making and iterative task execution within programs.

Course Outcomes: Students will be able to,

- 1) Study algorithmic approaches to problem solving.
- 2) Implement basic concept of programming.
- 3) Develop modular programs using control structures and arrays in 'C'.
- 4) Demonstrate understanding of basic concepts of C.

Module	Title and Contents	Hrs.
Module -1:	Problem Solving Aspects 1.1 Introduction to problem solving using computers, Problem-solving steps, Algorithm, Flowchart. 1.2 Pseudo codes - notations, examples, advantages and limitations. 1.3 Programming Languages as tools, programming paradigms, types of languages, Compilation process (compilers, interpreters), linking and loading. 1.4 Syntax and semantic errors, Good Programming Practices (naming conventions, documentation, indentation).	8
Module -2:	'C' Fundamentals 2.1 History of 'C' language, Structure of a 'C' program, 'C' Program development life cycle. 2.2 'C' tokens, Character set, Keywords, Identifiers, Variables, Constants, Data Types. 2.3 Operators, Expressions, types of operators, Operator precedence and Order of evaluation. 2.4 Character input and output, String input and output, Formatted input and output.	8

Module -3:	Control Structures 3.1 Decision making structures- if,if-else, switch and conditional operator. 3.2 Loop control structures:- for, while ,do while. 3.3 Nested structures. 3.4 Use of break and continue, Unconditional branching (goto statement).	8
Module -4:	Arrays 4.1 Concept of array. 4.2 Types of Arrays – One, Two and Multidimensional array. 4.3 Array Operations - declaration, initialization, accessing array elements. 4.4 Memory representation of two-dimensional array (row major and column major), Array applications.	6

Reference Books: -

- 1) Mittal, Ajay. Programming in C: A Practical Approach. Pearson Education, 2010.
- 2) Sprankle, Maureen. Problem Solving and Programming Concepts. 7th ed. Pearson Education, 2007.
- 3) Kernighan, Brian W., and Dennis M. Ritchie. The C Programming Language. 2nd ed. Prentice Hall, 1988.
- 4) Dromey, R. G. How to Solve It by Computer. Prentice Hall, 1982.
- 5) Schildt, Herbert. C: The Complete Reference. 4th ed. McGraw-Hill, 2000.

Evaluation Pattern:

Total Marks: 50

Internal Continuous Evaluation (20 Marks): • CCE - I: 10 Marks: Activity • CCE - II: 10 Marks: Activity • CCE - III: 10 Marks: MCQ Test (Best of 2 from CCE I, II & III Selected for final Score)	End Semester Examination (30 Marks): • Question -1: Solve the following questions (Five questions of 2 Marks) • Question -2: Attempt any two questions (Three questions of 10 marks) • Question -3: Attempt any four questions (Five questions of 5 marks) Note : Conversion of 50 Marks of ESE evaluation to 30 Marks
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Board of Studies in Computer Science (Computer Application)

Programme: B.Sc.

Semester – I

Type: DSC P

Marks: 50

Credits: 2

From: A. Y. 2026-27

**Name of the Course & Code: Computer Application Practical I
(BCAP 113)**

Practical Batch: 20 Students /Batch

Course Objectives: Students should be,

- 1) Understand computer Architecture.
- 2) Study different operating systems and their installation process.
- 3) Analyze basic concepts of problem-solving using computers and the fundamentals of C programming.
- 4) Develop logical thinking and problem-solving skills using structured programming techniques

Course Outcomes: Students will be able to,

- 1) Study Windows operating system, Linux Operating System.
- 2) Create and manage email accounts and PowerPoint presentations.
- 3) Apply the basic syntax, data types, and operators to execute programs.
- 4) Perform different types of operations on arrays.

Module	Title and Contents	Hrs.
	1) Create an E-mail account, retrieving messages from inbox, replying, attaching files filtering and forwarding 2) Preparing a Govt. Order / Official Letter / Business Letter / Circular Letter Covering formatting commands - font size and styles - bold, underline, upper case, lower case, superscript, subscript, indenting paragraphs, spacing between lines and characters, tab settings etc. 3) Preparing a newsletter: To prepare a newsletter with borders, two columns text, header and footer and inserting a graphic image and page layout. 4) Create an advertisement Prepare a Template. Prepare a Corporate Circular letter inviting the shareholders to attend the Annual Meeting in PowerPoint 5) Study of Different OS Installation and its working. 6) Study of Basic commands to understand the system and working of Linux. 7) Write a menu driven shell script which will print the following menu and execute the given task. 1. Display calendar of current month 2. Display today's date and time	60

	3. Display usernames those are currently logged in the system. 4. Display your name at given x, y position 5. Display your terminal number 8) Write a C program to calculate the addition of two numbers. 9) Write a C program to find the largest among three numbers using if-else statement. 10) Write a C program to check whether a number is even or odd. 11) Write a C program to find the sum and average of elements of a one-dimensional array. 12) Write a C program to find the largest and smallest elements in an array. 13) Write a C program to add two matrices using two-dimensional arrays. 14) Write a C program to display the multiplication table of a number using for loop. 15) Write a C program to create a simple calculator using switch case.	
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Reference Books: -

- 1) Silberschatz, Abraham, Peter B. Galvin, and Greg Gagne. Operating System Concepts. 8th ed. Wiley India, 2014.
- 2) Tanenbaum, Andrew S. Modern Operating Systems. 3rd ed. Prentice Hall India (PHI), 2011.
- 3) Dhamdhere, D. M. System Programming and Operating Systems. 2nd ed. Tata McGraw-Hill, 2009.
- 4) Tanenbaum, Andrew S. Distributed Operating Systems. Pearson Education, 2008.
- 5) Schildt, Herbert. C: The Complete Reference. 4th ed. McGraw-Hill, 2000.

Evaluation Pattern:

Total Marks: 50

Internal Evaluation (20 Marks):

- Journal: 10 Marks
- Students' Performance: 05 Marks
- Viva: 05 Marks

Practical Exam Paper (30 Marks):

- Section I: Attempt any TWO questions (10 marks each)
- Section II: Attempt any TWO questions (05 marks each)



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Programme: B.Sc.

Semester - II

Type: DSC

Marks: 50

Credits: 2

From: A. Y. 2026-27

Name of the Course & code: Advance C Programming (BCAT 121)

Course Objectives: Students should be able to,

- 1) Learn how to declare, define, and call functions.
- 2) Understand the concept and need for structures.
- 3) Perform pointer arithmetic.
- 4) Implement basic text and binary file operations.

Course Outcomes: Students will be able to,

- 1) Design and implement modular programs using functions.
- 2) Create and manipulate user-defined data types using structures.
- 3) Apply pointers for efficient memory access and data manipulation.
- 4) Implement file operations such as creating, reading, writing, appending, and updating files.

Module	Title and Contents	Hrs.
Module -1:	Functions 1.1 Concept of function, Advantages of Modular design, Standard library functions. 1.2 User defined functions:- declaration, definition, function call, parameter passing (by value), return statement. 1.3 Recursive functions. 1.4 Scope of variables and Storage classes.	8
Module -2:	Pointers and String 2.1 Introduction to Pointers and its types, Declaration, definition, initialization, Pointer arithmetic. 2.2 Multiple indirection (pointer to pointer), Functions and pointers. 2.3 Dynamic memory management, Memory leak, dangling pointers. 2.4 String Literals, string variables, declaration, definition, initialization. Syntax and use of predefined string functions.	8

Module -3:	Structures And Unions 3.1 Concept of structure, definition and initialization, use of typedef, Accessing structure members. 3.2 Nested Structures, Structures and functions- Passing each member of structure as a separate argument, Passing structure by value / address. 3.3 Concept of Union, declaration, definition, accessing union members. 3.4 Difference between structures and union.	8
Module -4:	File Handling 4.1 File Handling Fundamentals: Concepts of streams and need for file handling. 4.2 File Types and Operations: Text and binary files, file operations, and random access to files. 4.3 File Handling Functions: Standard file handling library functions – fopen(), fclose(), fgetc(), fgets(), fputc(), and fseek().	6

Reference Books: -

- 1) Kanetkar, Yashavant P. Let Us C. 18th ed. BPB Publications, 2020.
- 2) Balagurusamy, E. Programming in ANSI C. 7th ed. McGraw-Hill Education, 2017.
- 3) Hanly, Jeri R., and Elliot B. Koffman. Problem Solving and Program Design in C. 8th ed. Pearson Education, 2015.
- 4) Schildt, Herbert. C: The Complete Reference. 4th ed. McGraw-Hill, 2000.
- 5) Kernighan, Brian W., and Dennis M. Ritchie. The C Programming Language. 2nd ed. Prentice Hall, 1988.

Evaluation Pattern:

Total Marks: 50

Internal Continuous Evaluation (20 Marks): • CCE - I: 10 Marks: Activity • CCE - II: 10 Marks: Activity • CCE - III: 10 Marks: MCQ Test (Best of 2 from CCE I, II & III Selected for final Score)	End Semester Examination (30 Marks): • Question -1: Solve the following questions (Five questions of 2 Marks) • Question -2: Attempt any two questions (Three questions of 10 marks) • Question -3: Attempt any four questions (Five questions of 5 marks) Note : Conversion of 50 Marks of ESE evaluation to 30 Marks
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Programme: B.Sc.

Semester - II

Type: DSC

Marks: 50

Credits: 2

From: A. Y. 2026-27

Name of the Course & Code: Web Page Designing (BCAT 122)

Course Objectives: Students should be able to,

- 1) Learn HTML, CSS, Java script.
- 2) Use headings, paragraphs, lists, tables, and hyperlinks to structure content.
- 3) Design web forms using various input controls and form elements.
- 4) Understand simple, well-structured, and user-friendly web pages.

Course Outcomes: Students will be able to,

- 1) Understand the fundamental concepts of HTML to create web pages.
- 2) Design web forms using various HTML form controls.
- 3) Create web pages containing text, images, tables, lists, hyperlinks, and multimedia content.
- 4) Develop basic static websites.

Module	Title and Contents	Hrs.
Module -1:	Introduction to HTML 1.1 Introduction to HTML, HTML Editors and Tools. 1.2 HTML Document Structure, Headings, Paragraphs, Line Breaks. 1.3 Text Formatting Tags (bold, italic, underline, subscript, superscript). 1.4 Lists: Ordered, Unordered, and Definition Lists, Hyperlinks (Internal, External, and Email Links), Images and Attributes (src, alt, width, height).	8
Module -2:	HTML Page Elements and Forms 2.1 Tables: Structure, Captions, and Formatting, Forms: Input Elements, Text Areas, Buttons, and Labels. 2.2 Drop-down Lists, Radio Buttons, Checkboxes, Grouping Form Elements (fieldset, legend). 2.3 Embedding Multimedia: Audio, Video, and Iframes, Semantic HTML5 Elements: header, footer, section, article, nav, aside. 2.4 File and Folder Organization for a Website.	8

Module -3:	Introduction to CSS 3.1 Introduction to CSS and its importance in Web Design, CSS Syntax, Selectors, and Properties. 3.2 Types of CSS: Inline, Internal, External. 3.3 Working with Colors, Fonts, and Text Styling, Backgrounds, Borders, and Shadows. 3.4 The CSS Box Model: Margin, Padding, Border, and Content CSS Measurement Units (px, %, em, rem).	8
Module -4:	Page Layout and Advanced Styling 4.1 CSS Layout Techniques: Float, Display, and Position. 4.2 Creating Page Layouts using Divs and CSS, Navigation Menu Styling. 4.3 CSS Flexbox Layout, CSS Grid Layout. 4.4 Responsive Web Design.	6

Reference Books: -

- 1) Frain, Ben, Responsive Web Design with HTML5 and CSS, 3rd ed. Birmingham, UK: Packt Publishing 2020.
- 2) McFarland, David S., CSS: The Missing Manual, 4th ed. Sebastopol, CA: O'Reilly Media 2015.
- 3) Robson, Elisabeth, and Eric Freeman, Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages, Sebastopol, CA: O'Reilly Media 2012.
- 4) Duckett, Jon., HTML and CSS: Design and Build Websites, Hoboken, NJ: John Wiley & Sons 2011.
- 5) Lawson, Bruce, and Remy Sharp. Introducing HTML5, 2nd ed. Berkeley, CA: New Riders 2011.

Evaluation Pattern:

Total Marks: 50

Internal Continuous Evaluation (20 Marks): • CCE - I: 10 Marks: Activity • CCE - II: 10 Marks: Activity • CCE - III: 10 Marks: MCQ Test (Best of 2 from CCE I, II & III Selected for final Score)	End Semester Examination (30 Marks): • Question -1: Solve the following questions (Five questions of 2 Marks) • Question -2: Attempt any two questions (Three questions of 10 marks) • Question -3: Attempt any four questions (Five questions of 5 marks) Note: Conversion of 50 Marks of ESE evaluation to 30 Marks
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Board of Studies in Computer Science (Computer Application)

Programme: B.Sc.

Semester – II

Type: DSC P

Marks: 50

Credits: 2

From: A. Y. 2026-27

**Name of the Course & Code: Computer Application Practical II
(BCAP 123)**

Practical Batch:20 Students /Batch

Course Objectives: Students should be able to,

- 1) Learn how to declare, define, and call functions.
- 2) Develop programs using pointers, structures and file handling.
- 3) Create and organize web pages using HTML elements and tags.
- 4) Implement simple, well-structured, and user-friendly web pages.

Course Outcomes: Students will be able to,

- 1) Use pointers with arrays, functions, and structures.
- 2) Apply appropriate file handling functions.
- 3) Develop well-structured web pages using appropriate HTML elements and semantic tags.
- 4) Develop basic static websites that meet user requirements.

Module	Title and Contents	Hrs.
	1) Write a C program to find the factorial of a number using a user-defined function (with function declaration, definition, and call). 2) Write a C program to calculate the area of a rectangle, circle, and triangle using separate functions for each shape. 3) Write a C program to find the GCD (Greatest Common Divisor) of two numbers using recursion. 4) Write a C program to demonstrate pointer declaration, initialization, and dereferencing. 5) Write a C program to swap two numbers using pointers. 6) Write a C program to concatenate and compare two strings using predefined string functions (strcat(), strcmp()). 7) Write a C program to declare a structure for student details (name, roll number, marks) and display the student information. 8) Write a C program to create a text file, write data into it, and then read the same data and display it on the screen. 9) Create a simple personal web page displaying your name, image, and a short introduction. 10) Design a web page that demonstrates different text formatting tags such as bold, italic, underline, subscript, and superscript.	60

	11) Create a web page using headings, paragraphs, and line breaks to display an article. 12) Insert images in a web page using different attributes (src, alt, width, height). 13) Design a web page with internal, external, and email hyperlinks. 14) Create a table to display student information with proper headings and borders. 15) Develop a feedback form using input fields like name, email, message, and submit button.	
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Reference Books: -

- 1) Kanetkar, Yashavant P., Let Us C. 18th ed. BPB Publications, 2020.
- 2) Frain, Ben., Responsive Web Design with HTML5 and CSS. 3rd ed. Packt Publishing, 2020.
- 3) Meyer, Eric A., CSS: The Definitive Guide. 4th ed. O'Reilly Media, 2017.
- 4) Lawson, Bruce, and Remy Sharp., Introducing HTML5. 2nd ed. New Riders, 2011.
- 5) Schildt, Herbert., C: The Complete Reference. 4th ed. McGraw-Hill, 2000.

Evaluation Pattern:

Total Marks: 50

Internal Evaluation (20 Marks): • Journal: 10 Marks • Students' Performance: 05 Marks • Viva: 05 Marks	Practical Exam Paper (30 Marks): • Section I: Attempt any TWO questions (10 marks each) • Section II: Attempt any TWO questions (05 marks each)
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