BAGALKOT UNIVERSITY, JAMAKHANDI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

for

Bachelor of Arts with Computer Science

(General Degree)

w.e.f.

Academic Year 2024-25 and onwards

By the end of the program the students will be able to:

The Bachelor with Computer Science program enables students to attain following additional attributes besides the afore-mentioned attributes, by the time of graduation:

1. Apply standard Software Engineering practices and strategies in real -time software project development
2. Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems
3. The ability to apply the knowledge and understanding noted above to the analysis of a given information handling problem.
4. The ability to work independently on a substantial software project and as an effective team member.

Syllabus and Credits Structure under Choice Based Credit System [CBCS] ***General Degree***

for the Three Years B.A. with Computer Science Undergraduate Programme with effect from 2024-25

SEMESTER-I											
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**	**Teaching Department**
			IA	**SEE**	**Total**	**L**	**T**	**P**			
L1		Language 1	20	80	100	4	-	-	3	3	----------
L2		Language 2	20	80	100	4	-	-	3	3	----------
DSC1	2B1COMM01T	Introduction to Computers	20	80	100	3	-	-	3	3	Computer Science
	2B1COMM01L	Office Management Tools	10	40	50	-	-	4	2	3	Computer Science
DSC2		Theory Course Title	20	80	100	3	-	-	3	3	----------
		Lab Course Title	10	40	50	-	-	4	2	3	----------
DSC3	Theory	Theory Course Title	20	80	100	3	-	-	3	3	----------
	Lab	Lab Course Title	10	40	50	-	-	4	2	3	----------
COM1		Constitutional Values/ Environmental Studies	10	40	50	1	-	2	2	2	Constitutional Values: • Political Science Environmental Studies: • Chemistry/Geology/Geography/ Botany
Total Marks					**700**	**Semester Credits**			**23**		

SEMESTER-II											
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**	**Teaching Department**
			IA	**SEE**	**Total**	**L**	**T**	**P**			
L3		Language 3	20	80	100	4	-	-	3	3	----------
L4		Language 4	20	80	100	4	-	-	3	3	----------
DSC4	2B2COMM02T	Programming with C	20	80	100	3	-	-	3	3	Computer Science
	2B2COMM02L	C Programming lab	10	40	50	-	-	4	2	3	Computer Science
DSC5	Theory	Theory Course Title	20	80	100	3	-	-	3	3	----------
	Lab	Lab Course Title	10	40	50	-	-	4	2	3	----------
DSC6	Theory	Theory Course Title	20	80	100	3	-	-	3	3	----------
	Lab	Lab Course Title	10	40	50	-	-	4	2	3	----------
COM2		Constitutional Values/ Environmental Studies	10	40	50	1	-	2	2	2	Constitutional Values: • Political Science Environmental Studies: • Chemistry/Geology/Geography/ Botany
Total Marks					**700**	**Semester Credits**			**23**		

Year	I	**Course Code: 2B1COMM01T**	**Credits**	03
Sem.	1	**Course Title: Introduction to Computers**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks:20		Summative Assessment Marks : 80	Duration of ESA:03hrs.	

Course Outcomes	After completing this course satisfactorily, a student will be able to: • Confidently operate Desktop Computers to carry out computational tasks • Understand working of Hardware and Software and the importance of operating systems • Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts

Unit No.	**Course content**	**Hours**
Unit I	**Fundamentals of Computers** :I **Fundamentals of Computers:** Introduction to Computers - Computer Definition, Characteristics of Computers, Evolution and History of Computers, Types of Computers, Basic Organization of a Digital Computer; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High-Level Languages.	10
Unit II	**Structure and Working of Computer:** Functional Block Diagram of Computer. CPU, ALU, Memory Unit, Bus Structure of Digital Computer – Address, Data and Control Bus. Computer Memory: Memory Concept, Memory Cell, Memory Organization, Semiconductor Memory – RAM, ROM, PROM, EPROM, Secondary Storage Devices – Magnetic Tape, Magnetic Disk (Floppy Disk and Hard Disk.), Compact Disk. **Number Systems:** different types, conversion from one number system to another; Computer Codes – BCD, Gray Code, ASCII and Unicode; Boolean Algebra – Boolean Operators with Truth Tables;	11

Unit III	**Computer Language and Software:** Algorithm, Flowcharts, Machine Language, Assembly Language, High Level Language, Assembler, Compiler, Interpreter. Characteristics of Good Language. Software – System and Application Software. Translator Programs – Assembler, Interpreter and Compiler; Planning a Computer Program - Algorithm, Flowchart and Pseudo code with Examples	11
Unit IV	**Networking:** Concept, Basic Elements of a Communication System, Data Transmission Media, Topologies, LAN, MAN, WAN, InternetInternet Basics: Introduction, Features of Internet, Internet application, Services of Internet, Introduction to web, web browsers, http/https, URL.	10

Recommended Learning Resources

- Computer concept and C programming by P.B.Kottur
- Fundamentals of computers by V. Rajaraman
- Windows 7 step by step by Joan Preppernau (Author), Joyce Cox (Author)
- Microsoft Office 2013 Bible Paperback – 2013 by Lisa A. Bucki (Author), John Walkenbach (Author), FaitheWempen (Author), Michael Alexander (Author)

Reference Books

- Computer fundamentals by Pradeep K Sinha and Priti Sinha
- Microsoft Office Professional 2013 Step by Step By Beth Melton, Mark Dodge, Echo Swinford, Andrew Couch

<table>
<tr><td>Year</td><td>I</td><td colspan="3">Course Code: 2B1COMM01L</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>I</td><td colspan="3">Course Title:: Office Management Tools</td><td>Hours</td><td>50</td></tr>
<tr><td colspan="3">Course Pre-requisites, if any:</td><td colspan="4"></td></tr>
<tr><td colspan="3">Formative Assessment Marks:10</td><td colspan="2">Summative Assessment Marks:40</td><td colspan="2">Duration of ESA: 03hrs.</td></tr>
<tr><td colspan="3"></td><td colspan="4">Part A:
1. Microsoft Word: Demonstrate how a document to be prepared and formatted.
2. Microsoft Excel: Demonstrate how a spread sheet to be prepared and calculations are performed.
3. Microsoft PowerPoint: Demonstrate how presentations are prepared.</td></tr>
<tr><td colspan="3"></td><td colspan="4">Part B:
1. Draft a letter asking for quotations of different peripheral devices for your computer lab and mail the letter using mail merge in open office writer.
2. Create a database of students, which contains marks obtained by students of a class in different subjects and then calculate maximum, minimum, average and sum of marks in each subject. Also calculate % of each student using functions and formulas in Libre/Open Office Calc also draw pie chart and bar graph also.
3. Make a simple presentation on your college, use 3D effects, animation on network topologies.
4. Demonstrate how to create email-id and uploading and downloading files.</td></tr>
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Year	I	**Course Code: 2B2COMM02T**	**Credits**	03
Sem.	2	**Course Title:** Programming with C	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 20	Summative Assessment Marks:80	Duration : 3hrs.

Course Outcomes	After completing this course satisfactorily, a student will be able to: • Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts • Read, understand and trace the execution of programs written in C language • Write the C code for a given problem • Perform input and output operations using programs in C • Write programs that perform operations on arrays.

Unit No.	**Course Content**	**Hours**
Unit-I	**Introduction to C Programming:** Overview of C; History and Features of C; Structure of a C Program with Examples. C Programming Basic Concepts: C Character Set; C tokens - keywords, identifiers, constants, and variables; Data types; Declaration & initialization of variables; Symbolic constants.	10
Unit-II	**Input and output with C:** Formatted I/O functions - printf and scanf, control stings and escape sequences, output specifications with printf functions; Unformatted I/O functions to read and display single character and a string - getchar, putchar, gets and puts functions.	10

Unit III	**C Operators & Expressions:** Arithmetic operators; Relational operators; Logical operators; Assignment operators; Increment & Decrement operators; Bitwise operators; Conditional operator; Special operators; Operator Precedence and Associatively; Evaluation of arithmetic expressions; Type conversion. **Control Structures:** Decision making Statements - Simple if, if_else, nested if_else, else_if ladder, Switch Case, goto, break & continue statements; Looping Statements - Entry controlled and exit controlled statements, while, do-while, for loops, Nested loops	12
Unit IV	**Derived data types in C:** Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays - Declaration, Initialization and Memory representation. Strings: Declaring &Initializing string variables; String handling functions - strlen, strcmp, strcpy and strcat.	10

Recommended Leaning Resources

1. C: The Complete Reference, By Herbert Schildt. 4th Edition by Herbert Schildt 2000 | Published: October 6, 2000.
2. C Programming Language, By Brain W. Kernighan, 2nd Edition AT & T Bell Laboratories Murray Hill, New Jersey.

Reference Books:

1. P. K. Sinha &Priti Sinha: Computer Fundamentals (BPB)
2. E. Balaguruswamy: Programming in ANSI C (TMH)
3. Kamthane: Programming with ANSI and TURBO C (Pearson Education)
4. V. Rajaraman: Programming in C (PHI – EEE) 5. S. Byron Gottfried: Programming with C (TMH)
6. YashwantKanitkar: Let us C
7. P.B. Kottur: Programming in C (Sapna Book House

Year	I	**Course Code: 2B2COMM02T**	**Credits**	02
Sem.	II	**Course Title:** C Programming lab	**Hours**	50

Course Pre-requisites ,if any:	Knowledge of Programming	
Formative Assessment Marks:10	Summative Assessment Marks:40	Duration of ESA: 03hrs.

1. Program to find area and perimeter of circle
2. Program to find largest of three numbers
3. Program to find check whether the given number is even or odd
4. Program to find the character is vowel or not using switch statements
5. Program to find factorial of a given number
6. Program to generate a multiplication table
7. Program to print palindrome of given number
8. Program to find sum and average of n number
9. Program to find the sum of digits of given number
10. Program to reverse given string using built in function.
11. Program to find the length of a string without using the built-in function
12. Program to read and print an array
13. Program to read and print a matrix.
14. Program to perform addition of two matrices