

**SRI VENKATESWARA UNIVERSITY
FIRST YEAR BCA DEGREE COURSE**

**REVISED SYLLABUS UNDER CBCS
W.E.F. 2020-21**

I Semester

S.No	Paper Code	Subject	Hours/Week	No of Credits	Max. Marks Internal assessment	Max. Marks University Exam	Total Marks
1.		English – I	4	3	25	75	100
2.		Language(H/T/S) – I	4	3	25	75	100
3.		Life Skill Course – I	2	2	-0-	50	50
4.		Skill Development Course – I	2	2	-0-	50	50
5.	C1	Computer Fundamentals & Office tools	4	4	25	75	100
	C1-P	Computer Fundamentals & Office tools-Lab	2	1	-0-	50	50
6	C2	Programming in C	4	4	25	75	100
	C2-P	Programming in C Lab	2	1	-0-	50	50
7.	C3	Numerical and Statistical Methods	4	4	25	75	100
	C3-P	Numerical and Statistical Methods- Lab	2	1	-0-	50	50
	Total		30	25	125	625	750

SRI VENKATESWARA UNIVERSITY

FIRST YEAR BCA DEGREE COURSE

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FIRST SEMESTER

Computer Fundamentals and Office Tools

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C1	Computer Fundamentals and Office Tools	4	60	4

Course Objectives:

- To introduce the concepts of computer fundamentals and their applications for the efficient use of office technology in a business environment.
- To introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software.
- To provide hands-on use of Word, Excel and PowerPoint.

Course Outcomes:

- Describe the usage of computers and why computers are essential components in business and society.
- Identify categories of programs, system software and applications. Organize and work with files and folders.
- Compose, format and edit a word document and working with macros.
- Create work sheets and using various functions.
- Make presentations and inserting multimedia in them.

Syllabus

UNIT – I

Introduction: Characteristics of Computer, The evolution of Computers, The Computer Generations.

Basic Computer Organization: Input Unit, Output Unit, Storage Unit, Arithmetic Logic Unit, Control Unit, Central Processing Unit.

Secondary Storage Devices: Magnetic Disk, Optical Disk. Magneto optical Disk, Mass Storage Devices, Flash Drive and Other related Concepts.

UNIT – II

Computer Software: Types of Software, Logical systems Architecture, Acquiring Software, Software developmental Steps, Software Engineering.

Computer Languages: Machine Language, Assembly Language, High Level Language, Some High Level Languages, Characteristics of good Programming Language.

Operating Systems: What is an Operating System, Process Management, Some Popular Operating Systems.

UNIT –III

MS-Word: Features of MS-Word, MS-Word Window components, working with formatted text, Shortcut keys, Formatting documents: Selecting text, Copying & moving data, Formatting characters, changing cases, Paragraph formatting, Indents, Drop Caps, Using format painter, Page formatting, Header & footer, Bullets & numbering, Tabs, Forming tables. Finding & replacing text, go to (F5) command, proofing text (Spell check, Auto correct), Reversing actions, Macros, Inserting pictures, Hyperlinks, Mail merging, Printing documents.

UNIT IV

MS-Excel: Excel Features, Spreadsheets, workbooks, creating, saving & editing a workbook, Renaming sheet, cell entries (numbers, labels, and formulas), spell check, find and replace, Adding and deleting rows and columns Filling series, fill with drag, data sort, Formatting worksheet, Functions and its parts, Some useful Functions in excel (SUM, AVERAGE, COUNT, MAX, MIN, IF), Cell referencing (Relative, Absolute, Mixed), What-if analysis Introduction to charts: types of charts, creation of charts, printing a chart, printing worksheet.

UNIT V

MS-PowerPoint: Features of PowerPoint, Uses, components of slide, templates and wizards, using template, choosing an auto layout, using outlines, adding subheadings, editing text, formatting text, using master slide, adding slides, changing color scheme, changing background and shading, adding header and footer, adding clip arts and auto shapes. Various presentation, Working in slide sorter view (deleting, duplicating, rearranging slides), adding transition and animations to slide show, inserting music or sound on a slide, viewing slide show, Printing slides.

Text Books:

Computer Fundamentals – Pradeep .K.Sinha: BPB Publications.

Fundamentals of Computers -ReemaThareja, Oxford University Press India

References:

Fundamentals of Computers – V. Rajaraman, Prentice Hall of India

Introduction to Computers – Peter Norton Mcgraw Hill.

Computer Fundamentals and Office Tools Lab

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C1-P	Computer Fundamentals and Office Tools Lab	2	30	1

List of Experiments

- 1) Design a visiting card for managing director of a company as per the following specification.
 - Size of visiting card is $3\frac{1}{2} \times 2$
 - Name of the company with big font
 - Phone number, Fax number and E-mail address with appropriate symbols.
 - Office and Residence address separated by a line
- 2) **Create a table with following columns and display the result in separate cells for the following**
 - Emp Name, Basic pay, DA, HRA, Total salary.
 - Sort all the employees in ascending order with the name as the key
 - Calculate the total salary of the employee
 - Calculate the Grand total salary of the employee
 - Find highest salary and
 - Find lowest salary
- 3) **Prepare an advertisement to company requiring software professional with the following**
 - Attractive page border
 - Design the name of the company using Word Art
 - Use at least one clipart.
 - Give details of the company (use bullets etc)
 - Give details of the Vacancies in each category of employee's (Business manager, Software engineers, System administrators, Programmers, Data entry operators) qualification required.
- 4) **Create a letterhead of a company with the following specifications**
 - Name of the company on the top of the page 2 with big font and good style
 - Phone no, Fax no and E-mail address with symbols.
 - Main products manufactured by the company
 - Slogans if any should be specify in bold at the bottom
- 5) **Create two pages of curriculum vitae of a graduate with the following specifications**
 - Table to show qualifications with proper headings
 - Appropriate left and right margins
 - Format $\frac{1}{2}$ page using two-column approach about your self
 - Name on each page at the top right side
 - Page no. in the footer on the right side.
- 6) **Write a macro format document as below**
 - Line spacing "2" (double)
 - Paragraph indent of 0.1
 - Justification formatting style
 - Arial font and Bold of 14 pt-size

7) Create a letter as the main document and create 10 records for the 10 persons use mail merge to create letter for selected persons among 10.

8) Create an electronic spread sheet in which you enter the following decimal numbers and convert them into octal, Hexadecimal and binary numbers and vice-versa.

Decimal Numbers: 35,68,95,78,165,225,355,375,465

Binary Numbers: 101,1101,11101,11111,10001,11101111

9) Calculate the net pay of the employees following the conditions below.

	A	B	C	D	E	F	G	H	I
1	Employee Number	Employee name	Basic pay	D A	HR A	GPF	Gross pay	Income tax	Net pay
2									

DA: - 56% of the basic pay if Basic pay is greater than 20000 or else 44%.

HRA: - 15% of the Basic pay subject to maximum of Rs.4000.

GPF: - 10% of the basic pay.

INCOME TAX: - 10% of basic if Basic pay is greater than 20000. Find who is getting highest salary & who is get lowest salary?

10) The ABC Company shows the sales of different product For 5 years. Create BAR Graph, 3D and Pie chart for the following.

A	B	C	D	E	F
S.No.	Year	Pro 1	Pro 2	Pro 3	Pro 4
1	1989	1000	800	900	1000
2	1990	800	80	500	900
3	1991	1200	190	400	800
4	1992	400	200	300	1000
5	1993	1800	400	400	1200

11) Create a suitable examination database and find the sum of the marks (total) of each student and respective, class secured by the student.

Pass: if marks in each subject ≥ 35

Distinction: if average ≥ 75

First class: if average ≥ 60 but < 75

Second class: if average ≥ 50 but less

than 60 **Third class:** if average ≥ 35

but less than 50 **Fail:** if marks in any

subject < 35

12) Enter the following data into the sheet.

Name	Department	Salary
Anusha	Accounts	12000
Rani	Engineering	24000
Lakshmi	Accounts	9000
Purnima	Marketing	20000
Bindu	Accounts	4500
Tejaswi	Accounts	11000
Swetha	Engineering	15000
Saroja	Marketing	45000
Sunitha	Accounts	5600
Sandhya	Engineering	24000
Harika	Marketing	8000

- Extract records for department in Accounts and Salary >10000
- Sort the data by salary with the department using “sort commands”.
- Calculate total salary for each department using Subtotals

13) Enter the following data into the sheet.

	Raju	Rani	Mark	Rosy	Ismail	Reshma
English	76	89	43	51	76	87
2nd Lang	55	85	78	61	47	33
Maths	65	82	34	58	52	65
Computers	45	91	56	72	49	56
Human Values	51	84	54	64	32	64

Apply the conditional formatting for marks

- 35 below Red
- 35 to 50 Blue
- 51 to 70 Green
- 71 to 100 Yellow

14) Create a presentation using templates.

15) Create a Custom layout or Slide Master for professional presentation.

16) Create a presentation with slide transitions and animation effects.

17) Create a table in PPT and apply graphical representation on it.

PROGRAMMING IN C

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C2	PROGRAMMING IN C	4	60	4

Course Objectives:

- Provides knowledge on Algorithms, Flow chart and different programming languages.
- To train the students with basic concepts of programming using C.
- Provides complete knowledge of C language.
- Helps to develop logics which will help them to create program and applications in C.
- Learning the basic programming constructs, they can easily switch over to any other language in future.

Course Outcomes:

Upon successful completion of this course, students will be able to-

- Understand the basic terminology used in computer programming.
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Understand the dynamics of memory by the use of pointers and Structures.
- Apply different operations in File handling.

Syllabus

UNIT - I:

Introduction to Algorithms and Programming Languages: Algorithm - Key features of Algorithms - examples of Algorithms, Flow Charts – Pseudo code, Programming Languages – Generation of Programming Languages – Structured Programming Language. **Introduction to C:** Introduction – Structure of C Program, Writing the first C Program, File used in C Program – Compiling and Executing C Programs, Using Comments – Keywords – Identifiers, Basic Data Types in C, Variables – Constants, I/O Statements in C, Operators in C, Programming Examples, Type Conversion and Type Casting.

UNIT - II:

Control Structures and Functions: Decision Control and Looping Statements: Introduction to Decision Control Statements, Conditional Branching Statements, Iterative Statements, Nested Loops, Break and Continue Statement – Goto Statement. **Functions:** Introduction, Using functions – Function declaration/ prototype – Function definition, Function call – Return statement – Passing parameters, Scope of variables, Storage Classes, Recursive functions.

UNIT - III:

Arrays and Strings: *Arrays:* Introduction, Declaration of Arrays, Accessing elements of the Array – Storing Values in Array, Calculating the length of the Array, Operations that can be performed on Array, One dimensional array, Accessing one dimensional array, Passing one dimensional array to function, Two dimensional Arrays, Accessing two dimensional arrays, Passing two dimensional arrays to functions. *Strings:* Introduction, String Operations using String functions.

UNIT - IV:

Pointers, Structures and Unions: *Pointers:* Understanding Computer Memory – Introduction to Pointers, Declaring Pointer Variable, Pointer Expressions and Pointer Arithmetic – Null Pointers, Passing Arguments to Functions using Pointer, Pointer and Arrays – Passing Array to Function, Memory Allocation in C Programs, Memory Usage – Dynamic Memory Allocation, Drawbacks of Pointers. *Structures:* Introduction to structures, Nested Structures. *Union, and Enumerated Data Types:* Introduction to Union – accessing union elements, Enumerated Data Types.

UNIT – V:

File Handling: *Files:* Introduction to Files, Using Files in C, Reading Data from Files, Writing Data from Files, Detecting the End-of-file, Error Handling during File Operations.

PRESCRIBED TEXT BOOKS:

Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS

REFERENCE BOOKS:

1. E. Balagurusamy, COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.
3. Henry Mullish & Huubert L. Cooper: The Sprit of C, Jaico Pub, House, 1996.
4. Teach your C Skills-Kanithker

PROGRAMMING IN C Lab

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C2-P	PROGRAMMING IN C Lab	2	30	1

List of Experiments

1. Write a C program to calculate the expression: $((a*b)/c)+(a+b-c)$.
2. Write a C program to calculate $(a+b+c)^3$.
3. Write a C program to check whether the given number is Prime or Not.
4. Write a C program to find the sum of individual digits of a given number .
5. Program to convert Hours into seconds.
6. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
7. Write a program to check whether given number is Palindrome or Not.
8. Write a C program to check whether a given 3-digit number is Armstrong number or not.
9. Write a C program to print the numbers in triangular form. 1
1 2
1 2 3
1 2 3 4
10. Program to display number of days in given month using Switch – Case.
11. Write a C program to perform the following:
 - i. Addition of two matrices.
 - ii. Multiplication of two matrices.
12. Write a C program to determine if the given string is a palindrome or not.
13. Write C program to find the factorial of a given integer using recursive function.
14. Write a C program to concatenate two strings using pointers.
15. Write a C program to find the length of string using pointers.
16. Program to display Student Details using Structures.
17. Write a C program to
 - i. Write data into a File.
 - ii. Read data from a File.

NUMERICAL AND STATISTICAL METHODS

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C3	NUMERICAL AND STATISTICAL METHODS	4	60	4

Course Objectives:

- To learn how to perform error analysis for arithmetic operations.
- To demonstrate working of various numerical methods.
- To provide a basic understanding of the derivation and use of methods of interpolation and numerical integration.
- To impart knowledge of various statistical techniques.
- To develop students understanding through laboratory activities to solve problems related to above stated concepts.

Course Outcomes:

- Skill to choose and apply appropriate numerical methods to obtain appropriate solutions to difficult mathematical problems.
- Ability to apply various statistical techniques such as Measures of Central Tendency and Dispersion.
- Understanding of relationship between variables using the method of Correlation and Fit Analysis.
- Skill to execute programs of various Numerical Methods and Statistical techniques for solving mathematical problems.

Syllabus

UNIT 1: Solution of equations (polynomial and transcendental equations) interval having methods, secant, Regula – Falsi, Newton – Raphson methods, Fixed point Iteration method.

UNIT 2: Solution of system of linear equations: Gauss – Elimination method, Gauss – Jordan, Gauss – Siedel iteration method, LU- Decomposition method, Eigen values and Eigen vectors of a square matrix.

UNIT 3: Interpolation: Forward and backward differences, Newton's forward and backward formula, Lagrange's interpolation and Lagrange's inverse interpolation formula.

Numerical differentiation, integration: Numerical differentiation forward and backward formula, Trapezoidal and Simpsons formulas.

Statistical Methods:

UNIT 4 : Basic concepts and definition of statistics : Mean ,Median , Mode , standard deviation ,coefficient of variation ,skewness and kurtosis ,Karl Pearson Correlation coefficient ,Rank Correlation and illustrated examples .

UNIT 5 : Probability : Basic concepts and definition of probability , Probability axioms , Conditional probability , Addition and Multiplication theorem of probability (Based on set theory concepts) , Bayes theorem , problems and applications .

TEXT BOOKS:

1. Sunil S .Patil Numerical and Statistical Methods EBPB.
2. S.S.Shastry Introductory methods of Numerical Analysis PHI (New Delhi).

REFERENCE BOOKS:

1. Gupta S.C & Kapuram VK Fundamentals of Mathematical Statistics.
2. Numerical Analysis, Sultan Chand & Sons New Delhi.

Numerical and Statistical Methods Lab

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
I	C3-P	Numerical and Statistical Methods Lab	2	30	1

List of Experiments

Unit – 1

- 1) Find the root of the Equation $x^2 - 1.2 = 0$ by using Regula - Falsi method.
- 2) Solve the Equation $\sin x = 5x - 2$ by Iteration method.
- 3) Apply Newton - Raphson method , to find and approximate root , correct to three decimal places , of the Equation $x^3 - 3x - 5 = 0$, which lies near $x = 2$.
- 4) Find the root of the Equation $x \sin x + \cos x = 0$ by using Newton – Raphson method.
- 5) Find the root of the Equation $x^3 + x - 1 = 0$ by Iteration method, given that a root lies near 1.

Unit – 2

- 1) Solve the system of Equations $3x+y-z = 3$, $2x-8y+z=-5$, $x-2y+9z=8$ using Gauss – Elimination method.
- 2) Using Gauss –Jordan method solve the system, $2x+y+z=10$, $3x+2y+3z = 18$, $x+4y+9z=16$.
- 3) Solve the Equations $2x+3y+z=9$, $x+2y+3z=6$, $3x+y+2z=8$ by LU – Decomposition method.
- 4) Solve the system of Equations , $8x-3y+2z=20$, $4x+11y-z=33$, $6x+3y+12z=35$ by using Gauss- Seidel method.
- 5) Find the Eigen values & Eigen vectors of a square matrix $A=[8 \ 62 \ 67 \ 42 \ 43]$.

Unit – 3

- 1) Using Newton’s forward interpolation formula ,the given table of values ,

X	1.1	1.3	1.5	1.7	1.9
f(x)	0.21	0.69	1.25	1.89	2.61

Obtain the value of $f(x)$ when $x = 1.4$

2) Using Lagrange's Interpolation formula, find the value of y, corresponding to x = 10

3) from the following table

X	5	6	9	11
Y	12	13	14	16

4) From the following table of values of x & y, obtain $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ for x = 1.5

$$\frac{dy}{dx} \quad \frac{d^2y}{dx^2}$$

X	1.5	2.0	2.5	3.0	3.5	4.0
Y	3.375	7.0	13.625	24.0	38.875	59.0

5) Evaluate $\int_0^1 x^3 dx$ with five sub-intervals by Trapezoidal rule.

6) Evaluate $\int_0^1 \frac{1}{1+x} dx$ using Simpson's 3/8 rule taking h = 1/6.

Unit – 4

1) Find the Karl Pearson's coefficient of skewness for the following data :

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	10	12	18	25	16	14	8

2) Find Bowley's coefficient of skewness for the following data :

Salary	500-600	600-700	700-800	800-900	900-1000	1000-1100	1100-1200	1200-1300
No. of persons	10	28	40	64	25	18	9	6

3) Find the standard deviation from Assumed mean method for the following data :

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	1	4	17	45	26	5	2

4) Find the coefficient of skewness for the following data :

Variable	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	7	13	21	16	8	3

5) Find the rank correlation coefficient for the following data:

X	65	45	67	38	48	50	26	47	70	62
Y	64	40	58	46	52	49	38	47	59	60

UNIT-5

- 1) Three dice are tossed together. Find the probability that exactly two of the three numbers that show on them are equal.
- 2) What is the probability that a card drawn at random from the pack of playing cards may be either a Queen or a Jack?
- 3) If two cards are drawn from a well shuffled pack, find the probability that at least one of the two is Hearts.
- 4) A bag contains 4 Red, 6 Blue balls and a second bag contains 4 Blue & 6 Green balls. A ball is taken out from each bag. Find the probability that one ball is red and the other ball is Green. The probability that an event A happens in one trail of an experiment is 0.4. Three independent trails of the experiment are performed. Find the probability that the event A happens at least on.

SRI VENKATESWARA UNIVERSITY

B.C.A. DEGREE COURSE

W.E.F. 2020-21

MODEL QUESTION PAPER

Time: 3 hours

Marks: 75 marks

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks

PART – A

Answer any Five of the following question.

(5X5=25M)

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

PART – B

Answer All The Questions. Each question carries 10 marks (5X10= 50M)

9.	(A)	OR
	(B)	
10.	(A)	OR
	(B)	
11.	(A)	OR
	(B)	
12.	(A)	OR
	(B)	
13.	(A)	OR
	(B)	