

SRI VENKATESWARA UNIVERSITY
BCA (CLOUD COMPUTING) – W.E.F. 2023-24
SEMESTER – II

Sl. No.	Course	Name of the Subject	Total Marks	Internal Exam	Sem . End Exam	Teaching Hours	Credits
1.	First Language	English	100	25	75	4	3
2.	Second Language	(Telugu / Hindi / Sanskrit / Tamil / Urdu)	100	25	75	4	3
3.	Skill Enhancement Course-1		50	---	50	2	2
4.	Skill Enhancement Course-2		50	---	50	2	2
5.	Major - Course 3	Computer Networks	100	25	75	3	3
6.	Major - Course 3	Computer Networks Practical Course	50	---	50	2	1
7.	Major - Course 4	Programming in C	100	25	75	3	3
8.	Major - Course 4	Programming in C Practical course	50	---	50	2	1
9.	Minor		100	25	75	3	3
10.	Courses with Practicals		50	---	50	2	1

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SEMESTER – II

(MAJOR)

Course Structure

w.e.f. AY 2023-24

Year	Semester	Paper	Title of the Course	No. of Hrs./ Week	No. of Credits
1	II	3	Computer Networks	3	3
			Computer Networks Practical Course	2	1
		4	Programming in C	3	3
			Programming in C Practical Course	2	1

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SEMESTER – II

COURSE 3: COMPUTER NETWORKS

Theory _____ Credits: 3 _____ 3 hrs/week

I. Learning Outcomes: After this course, the student will be able to

1. Identify the different components in a Communication System and their respective roles.
2. Describe the fundamental concepts on data communication and the design of computer networks.
To get familiarized with the basic protocols of computer networks.
- 3.
4. Describe the technical issues related to the local Area Networks
5. Identify the common technologies available in establishing LAN infrastructure.

II. Syllabus

UNIT- I

Introduction to Network:-Definition, Applications, line configuration, Network topologies, Transmission mode, Types of Networks (LAN, WAN, MAN), Protocols, Network models: The OSI model, TCP/IP Protocol Suite.

Physical Layer: Signals –Analog signals, Digital signals, Transmission media - Guided & Un-Guided.

UNIT- II

Network LAN Technologies: Ethernet, Fast Ethernet, Gigabit Ethernet, and Wireless LAN's.

Data Link Layer: Error Detection and correction - Types of Errors, Error Detection, Error correction. Data link Protocols – Stop-and-wait ARQ, Go-back-n ARQ, Automatic Repeat Request (ARQ).

UNIT- III

Network Devices: Modem, Hub, Switch, Router, Repeaters, bridges, Gateway.

Network Layer: Internetwork Protocol (IP), Addressing (Classes, Dotted-decimal notation, Sample Internet), Subnet mask, Network layer Protocols – ARP, IPv4, and IPv6.

UNIT- IV

Transport Layer: TCP protocol, UDP protocol, Process-to-Process delivery, Congestion: Congestion control, congestion avoidance, congestion discarding, Quality of Service (QOS).

UNIT-V

Application Layer: Domain Name System (DNS) - domain name space, distribution of name space, DNS in the Internet, SMTP, SNMP, FTP, POP3, HTTP, WWW.

III. REFERENCES

Text Books:

1. Data Communication and Computer Networks by Behrouz A. Forozoun, Published by Thomas MC GRAW HILL 2nd edition.
2. Andrew S. Tanenbaum, "Computer Networks", Fourth Edition, 2003
3. An introduction to computer network by PETER L DORODAL.

V. Co-Curricular Activities:

a) Suggested Co-Curricular Activities:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

B. General

1. Group Discussion
2. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS: Some of the following suggested assessment methodologies could be adopted:

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Programming exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

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SEMESTER – II
COURSE 3: COMPUTER NETWORKS

Practical

Credits: 1

2 hrs/week

PRACTICAL SYLLABUS: COMPUTER NETWORKS

Skill Outcomes: After this course, the student will be able to

1. Write HTML program to implement get() and post() methods
2. Describe the simple file transfer between two systems by opening socket connection to out server on one system and sending a file from one system to another.
3. To get familiarized with the basic protocols of computer networks.
4. Describe the technical issues related to the local Area Networks

PRACTICAL SYLLABUS:

1. Write a program for print the IP Address of a WWW.YAHOO.COM
2. Write a program for to print the IP Address of the local machine and hostname.
3. Write HTML program to implement get() and post() methods
4. Write a program for to identify the well known ports on a Remote system.
5. Write a program for to print the parts of URL.
6. Write a program for to send & receive data from datagram packet.
7. Write a program for a chat application.
8. Write a program for the simple file transfer between two systems by opening socket connection to out server on one system and sending a file from one system to another.
9. Write a program for the HTTP server.

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BCA (CLOUD COMPUTING) – W.E.F. 2023-24
SEMESTER – II
MODEL QUESTION PAPER
COURSE 3: COMPUTER NETWORKS
(w.e.f. 2023-24)

Time :3Hrs

Max Marks 75

SECTION - A

Answer any Five of the following

5 X 3= 15 Marks

1. Short answer question from Unit-1
2. Short answer question from Unit-1
3. Short answer question from Unit-2
4. Short answer question from Unit-2
5. Short answer question from Unit-3
6. Short answer question from Unit-3
7. Short answer question from Unit-4
8. Short answer question from Unit-4
9. Short answer question from Unit-5
10. Short answer question from Unit-5

SECTION - B

Answer any Five of the following

5 X 12= 60 Marks

11. Long answer question from Unit-1
12. Long answer question from Unit-1
13. Long answer question from Unit-2
14. Long answer question from Unit-2
15. Long answer question from Unit-3
16. Long answer question from Unit-3
17. Long answer question from Unit-4
18. Long answer question from Unit-4
19. Long answer question from Unit-5
20. Long answer question from Unit-5

Note: The question paper setter is requested to set question paper based on a model question paper and ensuring coverage across all units equally.

SRI VENKATESWARA UNIVERSITY
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SEMESTER – II
COURSE 4. PROGRAMMING IN C

(w.e.f. 2023-24)

Theory **Credits: 3** **3 hrs/week**

I. Learning Outcomes: Upon Successful Completion of The Course, A Student Will Be Able to:

1. Understand the evolution and functionality of a Digital Computer.
2. Apply logical skills to analyse a given problem
3. Develop an algorithm for solving a given problem.
4. Understand “C” language constructs like Iterative statements, Array processing, Pointers, etc.
5. Apply “C” language constructs to the algorithms to write a “C” language program.

II Syllabus

UNIT I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Programming methodologies(paradigms) -

Introduction to C: Introduction– features of C – Structure of C Program – Writing the first C Program – Files used in C Program – Compiling and Executing C Programs.

UNIT II

Programming Constructs: Tokens – Using Comments – Basic Data Types in C – Variables – I/O Statements in C - Operators in C- Programming Examples.

Decision Control and Looping Statements: Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multidimensional arrays.

Strings: Declaring and Initializing string variables, character and string handling functions.

UNIT IV

Functions: Introduction – Function declaration/ prototype – Function definition – function call – return statement – Categories of functions - Recursion - Parameter Passing techniques - Scope of variables – Storage Classes.

Pointers: Introduction to Pointers – declaring and initializing pointer Variables – accessing values using pointers - Pointer Arithmetic – Dynamic Memory Allocation.

UNIT V

Structures and Unions: Introduction – Structure definition - accessing structure members – Array of Structures - union definition – difference between structures and unions, Enumerated Data types.

Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Command Line Arguments.

III. References:

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The „C“ Programming language” - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us „C“ – BPB Publications.

IV. Recommended Co-Curricular Activities:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
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B. General

1. Group Discussion
2. Try to solve MCQ“s available online.
3. Others

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SEMESTER – II

4. Programming in C

Practicals

Credits:1

2 hrs/week

List of suggested programs :

1. Write a program to check whether the given number is Armstrong or not.
2. Write a program to find the sum of individual digits of a positive integer.
3. Write a program to generate the first n terms of the Fibonacci sequence.
4. Write a program to find both the largest and smallest number in a list of integer values
5. Write a program to demonstrate reflection of parameters in swapping of two integer values using **Call by Value & Call by Address**
6. Write a program that uses functions to add two matrices.
7. Write a program to calculate factorial of given integer value using recursive functions
8. Write a program for multiplication of two M X N matrices.
9. Write a program to perform various string operations.
10. Write a program to search an element in a given list of values.
11. Write a program to sort a given list of integers in ascending order.
12. Write a program to calculate the salaries of all employees using **Employee (ID, Name, Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary)** structure.
 - a. DA is 30 % of Basic Pay
 - b. HRA is 15% of Basic Pay
 - c. Deduction is 10% of (Basic Pay + DA)
 - d. Gross Salary = Basic Pay + DA+ HRA
 - e. Net Salary = Gross Salary - Deduction
13. Write a program to illustrate pointer arithmetic.
14. Write a program to read the data character by character from a file.
15. Write a program to create **Book (ISBN, Title, Author, Price, Pages, Publisher)** structure and store book details in a file and perform the following operations
 - a. Add book details
 - b. Search a book details for a given ISBN and display book details, if available
 - c. Update a book details using ISBN
 - d. Delete book details for a given ISBN and display list of remaining Books

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