Progressive Education Society's

Modern College of Arts, Science and Commerce, (Autonomous) Ganeshkhind, Pune – 411 016

(NEP Version II)

26th April 2025.

Syllabus for S.Y.B.B.A(CA)

NEP VERSION II (New NEP)

A.Y.2024-25

Introduction:

The degree shall be titled as Bachelor of Business Administration (B.B.A.)(Computer Application) under the Faculty of Commerce and Management. First Year B.B.A.(CA) Basedon Credit System is implemented w.e.f. the academic year 2022-2023 , Second Year B.B.A.(CA) is implemented w.e.f. 2023-2024 ,Third Year B.B.A.(CA) will be w.e.f. 2024- 2025.

Programme Objectives:

BBA (CA) Graduate's will be able to

Po1: The BBA (CA) Programme provides sound academic base to develop an advancedcareer in Computer Application with various Management and Business skills.

Po2: This course focus on conceptual grounding of computer usage as well as its practicalBusiness Application.

Po3: BBA (CA) inculcates basic programming ability amongst students which can help themto become a good programmer.

Po4: This course nurtures good Soft Skills and Managerial Skill in the students which createnoble IT Professionals.

Po5: Students get excellent exposure to learn the process of Software development in the Vthand VIth semester by developing their own projects which helps them in campus placement.

Suggested internal assessment tools for courses:

The concerned teacher shall announce the units for which internal assessment will takeplace. A teacher may choose one of the methods given below for the assessment.

1. Library notes
2. Students Seminar
3. Short Quizzes / MCQ Test
4. Home Assignments
5. Tutorials/ Practical
6. Oral test
7. Research Project
8. Group Discussion
9. Open Book Test
10. Written Test
11. PPT presentation
12. Industrial Visit

13. Viva

Teaching Methodology:

1. Classroom Teaching
2. Guest Lectures
3. Group Discussions
4. Surveys
5. Power Point Presentations
6. Visit to Industries
7. Research Papers & Projects
8. E-content

Subject List

SYBBA(CA) Sem III

Sr. No	Course Type	Course(Subject)	Course (Subject)code	Credits	Weightage for Internal Mark	Weightage for External Mark	Weightage for practical	Total Marks
1	Major 1	Object oriented concept using C++	24BBA23101	2	20	30	-	50
2	Major 2	Big Data Analytics	24BBA23102	2	20	30	-	50
3	Major 3	Computer Laboratory Based on 24 BBA23101 & 24 BBA23102	24BBA23103	2	-	50	-	50
4	IKS	Vedic Maths	24BBA23504	2	20	30	-	50
5	Minor	Computerized Accounting(Tally)	24BBA23205 (A)	4	40	60	-	100
	OR							
5	Minor	International Economics and Business	24BBA23205 (B)	4	40	60	-	100
6	OE1 / OE2	Weather Studies	-	2	20	30	-	50
7	FP	Field project	24BBA23606	2	20	30	-	50
8	VEC/ vsc	JavaScript Programming	24BBA23507	2	20	30	-	50
9	AEC	Hindi / Marathi	-	2	20	30	-	50
10	CC	NSS / NCC / Sports	-	2	20	30	-	50
		Total Credits		**22**				**550**

SYBBACA SEM IV

Sr. No	Course Type	Course(Subject)	Course (Subject)code	Credits	Weightage for Internal Mark	Weightage for External Mark	Weightage for practical	Total Marks
1	Major 1	Data Structure using C++	24BBA24101	2	20	30	-	50
2	Major 2	Node JS	24BBA24102	2	20	30	-	50
3	Major 3	Computer Laboratory Based on 24 BBA24101 & 24 BBA24102	24BBA24103	2	-	50	-	50
4	Minor	Introduction to Taxation	24BBA24204 (A)	4	40	60	-	100
		OR						
4	Minor	International Treads and Business	24BBA24204 (B)	4	40	60	-	100
5	OE1 / OE2	Mental health and Self Care	-	2	20	30	-	50
6	CEP	CEP	24BBA24605	2	20	30	-	50
7	VSC	Computer Network	24BBA24406	2	20	30	-	50
8	SEC	Digital Marketing	24BBA24407	2	20	30	-	50
9	AEC	Hindi / Marathi	-	2	20	30	-	50
10	CC	NSS / NCC / Sports	-	2	20	30	-	50
		Total Credits		**22**				**550**

SEM III

Subject Code: - 24BBA23101

Subject Name -: Object Oriented Concepts Using C++

Total Contact Hours: -**30 hrs**   **Total Credits**: - 2

Prerequisite: Basic Knowledge of C Programming

Course Objectives :

- Acquire an understanding of basic object-oriented concepts and the issues involved in

  effective class design.

- Enable students to write programs using C++ features like constructor and destructor, inheritance, polymorphism

Course Outcomes:- At the end of the course, students will able to

- Write C++ program using Encapsulation, Abstraction, Inheritance, and Polymorphism
- Apply functions ,Class and objects concepts in C++ program

Unit	Topic	No. of lecture
1	**Introduction to C++** 1.1 Basic concepts, features, advantages and applications of OOP 1.2 Principles of OOP- Encapsulation, Abstraction, Inheritance, and Polymorphism. 1.3 Introduction, applications and features of C++ 1.4 Input and Output operator in C++ 1.5 Simple C++ program	2

2	**Beginning with C++**
	2.1 Introduction
	2.2 Keywords and Data types
	2.3 Declaration of variables, dynamic initialization of variables, reference variable
	2.4 Operators:
	  2.4.1 Scope resolution operator
	  2.4.2 Memory management operators
	2.5 Manipulators
	2.6 Functions:
	  2.6.1 Function prototyping, call by reference and return by reference
	  2.6.2 Inline functions
	    2.7 Default
	      arguments
		5

3	**Classes and Objects** 3.1 Structure and class, Class, Object 3.2 Access specifiers, defining data member 3.3 Defining member functions inside and outside class definition. 3.4 Simple C++ program using class 3.5 Memory allocation for objects 3.6 Static data members and static member functions 3.7 Array of objects, objects as a function argument 3.8 Friend function and Friend class 3.9 Function returning objects 3.10	**5**
4	**Constructors and Destructors and Inheritance** 4.0 Introduction 4.1 Constructors 4.1 Types of constructor : Default constructor, Parameterized constructor, Copy constructor 4.2 Multiple constructors in a class 4.3 Constructors with default argument 4.4 Dynamic initialization of constructor 4.5 Dynamic constructor 4.6 Destructor 4.7 Introduction to inheritance 4.8 Defining Base class and Derived class 4.9 Types of Inheritance: single inheritance, multilevel inheritance, multiple inheritance, hierarchical inheritance, hybrid inheritance 4.10 Virtual Base Class 4.11 Abstract class 4.12 Constructors in derived class	**10**

5	**Polymorphism**
	5.1 Compile Time Polymorphism
	    5.1.1 Introduction, rules for overloading operators
	    5.1.2 Function overloading
	    5.1.3 Operator Overloading unary and binary
	    5.1.4 Operator Overloading using friend function
	    5.1.5 Overloading insertion and extraction operators
	    5.1.6 String manipulation using operator overloading
	5.2 Runtime Polymorphism
	    5.2.1 this Pointer, pointers to objects, pointer to derived classes
	    5.2.2 Virtual functions and pure virtual functions
	5.3 Introduction to file operations – Opening , closing and updating
		8

	Total:	30

References:

Sr.No.	Title Of the Book	Author's
1	Object Oriented programming with C++	E Balagurusamy
2	Object Oriented Programming with C++	RobertLafore
3	The Complete Reference C++	Herbert Schildt

Subject Code: **24BBA23102**
Subject: Big Data Analytics (2 Credit Course)
Total Lectures = 30   **Total Credits**: 2
Course Objectives:-

- To develop expert knowledge and analytical skills
  in current andDeveloping areas of analysis
  statistics, and machine learning

- To enable the learner to identify, develop and apply detailed analytical,
  creative, problemSolving skills.

Course Outcomes:- At the end of the course, students will able to

- Perform data gathering of large data from a range of data sources.
- Analyze existing Big Data datasets and implementations, taking
  Practicality, and usefulness metrics into consideration.

Unit	Topic	No. of lectures
1	**INTRODUCTION TO BIG DATA** 1.1 Introduction to Big Data 1.2 Types of Digital Data 1.3 Big Data Analytics 1.4 Application of Big data	**3**
2	**INTRODUCTION TO STATISTICAL CONCEPTS,DATA MODEL AND TASK** 2.1 Basics of Data Analytics 2.2 Types of Analytics – 2.2.1 Descriptive, 2.2.2 Predictive, 2.2.3 Prescriptive 2.2.4 Statistical Inference 2.3 Populations and samples 2.3.1 Statistical modelling, 2.3.2 Probability 2.3.3 Distribution 2.3.4 Correlation 2.3.5 Regression	**4**

3	**DATA QUALITY AND PRE-PROCESSING**
	    3.1 Data Quality: Why Preprocess the Data?
	      Data munging/wrangling operations
	   3.2 Data Cleaning - Missing Values, Noisy Data
	   3.3 Data Transformation – Rescaling, Normalizing, Data reduction
	     and Data discretization
	   3.4 Introduction To Machine Learning
	     3.4.1 Basics of Machine Leaning
	     3.4.2 Supervised Machine Learning
	        3.4.2.1 K- Nearest-Neighbours,
	        3.4.2.2 Naïve Bayes
	        3.4.2.3 Decision tree
	        3.4.2.4 Support Vector Machines
	   3.4.3Unsupervised Machine Learning
	        3.4.3.1 Cluster analysis
	        3.4.3.2 K means
	        3.4.3.3 EM Algorithm
	        3.4.3.4 Association Rule Mining
	        3.4.3.5 Apriori algorithms
		15

4	**DATA ANALYTICS WITH PYTHON**
	    4.1 Introduction
	    4.2 Data Manipulation
	    4.3 Data Analysis
	    4.4 Data Visualization
	       4.4.1 Introduction to Exploratory Data Analysis (EDA)
	       4.4.2 Data visualization, Basic data visualization tools –
	       Box Plots, Histograms, Bar charts/graphs, Scatter plots,
	       Line charts, Area plots, Pie charts.
		8

	Total no of lectures	**30**

Reference Books:

1.SeemaAcharya, SubhasiniChellappan, "Big Data Analytics" Wiley 2015.

2.Data Science Fundamentals and Practical Approaches, Gypsy Nandi, Rupam
3.Jay Liebowitz, "Big Data and Business Analytics" Auerbach   Publications, CRCpress (2013)
4.Mark Lutz, Programming Python, O`Reilly, 4th Edition, 010

5.Dive into Python, Mike

6.Programming Python, 4th Edition by Mark Lutz

7.ArvindSathi, "BigDataAnalytics: Disruptive Technologies for
   Changing the Game", MCPress, 2012

Subject Code: - 24BBA23103

Subject Name -: Computer lab based on 25 BBA13101 & 25 BBA13102

Total Contact Hours: -30 hrs   **Total Credits:** - 2

(**Total Practical**= 30 P (15x2hrs. for each course)

Course Objectives:-

   1) To identify concepts of various data models used.

   2) To understands the uses of operators, functions, input/output methods.

Course Outcomes:-   At the end of the course, students will able to

1) Create error free applications giving desired results.

2) Analyze problem statements and problem solving methodology.

Sr. No.	Assignment Name	No of Practical's
1	Beginning with C++	4
2	Operators and Functions in C++	4
3	Classes and Objects	5
4	Constructors and Destructors	5
5	Inheritance	6
6	Polymorphism	6
Total:		30

Sr. No.	Assignment Name	No of Practical's
1	Data preparation	7
2	Data manipulation	7
3	Data visualization	8
4	Data analysis	8
Total:		30

Subject Code: 24BBA23606

Subject: Field Project(02 credit

course) Total Contact hours = 30

Course Objective :-

1) To gain data analytics skills.

2) To develop skill at conveying activities and achievements.

Course Outcome :- At the end of the course, students will able to

1) Do hands on experience in specific computer language.

2) Get exposure to solve various real time problems in society.

Guidelines:

⋅ Students should work in a team of maximum 2 students.

⋅ Students can choose a project topic without any restriction on technology or domain. ⋅ The student group will work independently throughout the project work including: problem identification, information searching, literature study, design and analysis, implementation, testing, and the final reporting.

⋅ Project guide must conduct project presentations (minimum 4) to monitor the progress of the project groups.

⋅ At the end of the project, the group should prepare a report which should conform to international academic standards. The report should follow the style in academic journals and books, with clear elements such as: abstract, background, aim, design and implementation, testing, conclusion and full references, Tables and figures should be numbered and referenced to in the report.

⋅ The final project presentation with demonstration (UE) will be evaluated by the project guide (appointed by the college) and one external examiner (appointed by the University).

Evaluation guidelines:

CIE (20 marks)			ESE (30 marks)		
First presentation	Second presentation	Documentation	Project Logic/Presentation	Documentation	Viva
5	5	10	10	10	10

Recommended Documentation

contents:Abstract

Introduction

       -motivation

       -problem statement

-purpose/objective and goals

-literature survey

-project scope and limitations

System analysis

-Existing systems

- scope and limitations of existing systems

-project perspective, features

- stakeholders

-Requirement analysis - Functional requirements, performance requirements,security requirements etc.

System Design

- Design constraints

- System Model: DFD,ERD

- Data Model

-User interfaces

Implementation details

-Software/hardware specifications

Outputs and Reports Testing

Test Plan, Black Box Testing or Data Validation Test Cases, White Box Testing or Functional Validation Test cases and results

Conclusion and Recommendations Future Scope

Bibliography and References

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Syllabus for B.B.A (CA)

Semester :-III

Subject Code: - 24BBA24407

Subject Name -: JavaScript Programming

Total Contact Hours: -30   **Total Credits**: - 2

Prerequisite: HTML, CSS
Credit Distribution: 1 credit for theory (15 Lectures) and 1 credit for practicals.

Course Objectives: -
- To understand JavaScript fundamentals.
- To learn asynchronous programming and DOM manipulation.
- To build interactive web applications.

Course Outcomes: At the end of the course, students will able to

- Write a programs using java script syntax.
- Use asynchronous programming and dynamic DOM manipulation for interactive web development.

Unit	Topic	No. of Lectures

1	**Chapter 1: JavaScript Fundamentals**
	
	• **1.1 Overview of JavaScript**
	
	• **1.2 JavaScript Basics**
	   o Introduction to Object Orientation in JavaScript
	   o JavaScript Objects and Syntax
	
	• **1.3 Datatypes and Variables**
	   o JavaScript Datatypes
	   o Declaring Variables
	   o Understanding const, let, and var
	
	• **1.4 Expressions and Operations**
	   o Basic Operators (arithmetic, string concatenation)
	   o Using typeof Operator
		6

2	**Chapter 2: Control Flow and Functions**	6

	• **2.1 Control Structures**	
	o Conditional Statements: if and switch	
	o Looping with for, while, do...while	
	• **2.2 Functions**	
	o Defining and Invoking Functions	
	o Arrow Functions	
	o Function Parameters (including Rest Parameters)	
3	**Chapter 3: Asynchronous JavaScript**	**8**
	• **3.1 Introduction to Asynchronous Programming**	
	o Callbacks	
	o Promises	
	o Async and Await	
	• **3.2 Working with the DOM and Events**	
	o Basics of the HTML DOM	
	o Event Handling in JavaScript	
4	**Chapter 4: Advanced Data Handling and Built-in Objects**	**10**
	• **4.1 Arrays and Array Methods**	
	o Array Methods: map, filter, reduce, find, findIndex	
	o for...of Loop for Array Traversal	
	• **4.2 Useful Built-in Objects**	
	o Math and Date Objects	
	o String Methods (includes, startsWith, endsWith)	
	• **4.3 Working with Web APIs**	
	Total hours	**30**

References:-

1. HTML and Javascript- Ivan Bayross

2. Mastering HTML,CSS & Javascript Web Publishing 3.Javascript-

The Definitive Guide-David Fianagan

SEM IV

Subject Code: - 24BBA24101

Subject Name -: Data Structures using C++

Total Contact Hours: -30   **Total Credits**: - 2

Prerequisite: Basic knowledge of Object oriented Programming using C++

Course Objectives:-

> 1.To write and execute programs in C++ to solve problems
> using data structures such as arrays, linked lists, stacks,
> queues.

Course Outcomes:- At the end of the course, students will able to

> 1. Increase the ability to identify the appropriate data structure for
>   given problem.
> 2. Write a program to analyze the time and space complexity
>   of algorithm or program.

Unit	Topic	No. of lectures
1	**Introduction to Data Structure** 1.1 Pointers and dynamic memory allocation 1.2 Algorithm-Definition and characteristics, analysis 1.3 Space Complexity -Time Complexity-algorithm analysis - Asymptotic Notation 1.4 Introduction to data structures - definitions 1.5 Types of Data structure 1.6 Abstract Data Types (ADT) 1.7 structures - Polynomial Representation - Evaluation of Polynomial- Addition of Polynomial	6
2	**Arrays and Sorting** 2.1 Introduction to arrays 2.2 Types of array and Representation of array 2.3 Introduction to sorting and application 2.4 Sorting algorithms with efficiency - Bubble sort, Insertion sort, Merge sort, Quick Sort, Selection Sort 2.5 Searching techniques –Linear Search, Binary search	7

3	**Linked List**
	3.1 Introduction to Linked List
	3.2 Implementation of Linked List – Static & Dynamic representation,
	3.3 Types of Linked List
	    3.3.1 Singly Linked list(All type of operation)
	    3.3.2 Doubly Linked list (Create , Display)
	    3.3.3 Circularly Singly Linked list (Create, Display)
		8

	3.3.4 Circularly Doubly Linked list (Create, Display) 3.4 Generalized linked list		
4	**Stacks and Queue** 4.1 Introduction 4.2 Representation- Static & Dynamic 4.3 Primitive Operations on stack 4.4 Application of Stack 4.5 Conversion of Infix, prefix, postfix , Evaluation of postfix and prefix 4.6 Introduction to Queue 4.7 Representation - Static & Dynamic 4.8 Primitive Operations on Queue 4.9 linear queue, Circular queue, priority queue, Concept of doubly queue 4.10 Concept of doubly ended queue 4.11 Application of Queue 4.12 Introduction to Trees 4.13 Introduction of Graph		9
	Total:		**30**

Reference Books:-

1. Data structures, Algorithms and Applications in C++, S.Sahni, University

Press (India) Pvt.Ltd, 2nd edition, Universities Press Orient Longman Pvt.

Ltd.

2. Data structures and Algorithms in C++, Michael T.Goodrich, R.Tamassia and

.Mount, Wiley student edition, John Wiley and Sons.

3. Data structures using C and C++, Langsam, Augenstein and Tanenbaum, PHI.

Semester :-IV

Subject Code: -24BBA24102

Subject Name :- NodeJS

Total Contact Hours: -30   **Total Credits**: - 2

Prerequisite: JavaScript Programming
Course Objectives: -

- To Understand the JavaScript and technical concepts behind Node Js.

- To Recognize Structure a Node application in modules .

- To create backend of simple websites.

Course Outcomes: At the end of the course, students will able to

- Understood Node.js architecture and core concepts.

- Design a website using HTML,CSS ,NodeJs and JavaScript

Sr .No	Topic	No .of Lectures
1.	**Introduction to Node JS** 1.1 What is Node.js? 1.2 Advantage of Node.js 1.3 Traditional Web server 1 and Traditional web Server 2 1.4 Node.js Process Model	4
2.	**Working with Node.js Modules** 2.1 Buffer 2.2 Core modules 2.3 Creating Custom modules 2.4 Using NPM	6
3.	**Building a Simple Web Server** 3.1 Creating a Web Server 3.2 Request Handling and Routing 3.3 Middleware Concept 3.4 Building a basic REST API	6
4.	**Working with File System** 4.1 File Operations 4.2 Working with streams 4.3 File management	7
5.	**Events in Node.js** 5.1 Event Emitter Class	7

	5.2 Creating Custom Events 5.3 Event-Driven Programming Benefits 5.4 Real -world Applications 5.5 Introduction to Database Connectivity	
	Total	30

Reference Books:

1) Node.js complete reference guid , velentin Bojinov , David Herron, DiogeResende, packt Publishing ltd

2) Mastering Nod.js By Sandro Pasquali , packt Publishing

3) Smashing Node.js Javascript Everywhere , Guillermo Rauch, John wiley& Sons

Semester :-IV

Subject Code: - 24BBA24103
Subject Name -: Computer lab based on 25 BBA14101 & 25 BBA14102
Total Contact Hours: -30 hrs   **Total Credits: - 2**
(Total Practical= 30 P (15x2hrs. for each course)

Course Objectives:-

- To identify concepts of various data models used.
- To understands the uses of operators, functions, input/output methods.

Course Outcomes:- At the end of the course, students will able to

- Create error free applications giving desired results.
- Analyze problem statements and problem solvingmethodology.

Sr. No	Assignment Name	No. of lectures
1	Array	4
2	Sorting Techniques	6
3	Searching Techniques	4
4	Linked List	4
5	Stack	4
6	Queue	8
	Total:	30

Sr. No	Assignment Name	No of Practical's
1	Node.js web server, modules and npm	7
2	File system	6
3	Events in node.js	8
4	Node.js with database	9
	Total:	30

Subject Code: 24BBA24605

Subject: Community Engagement Program (02 credit Course)

Course Objective :-

- To gain project management skill.

- To develop skill at conveying activities and achievements.

Course Outcome :-At the end of the course, students will able to

- Get hands on experience in specific computer language.

- Get exposure to solve various real time problems in society.

Guidelines:

1. **Objective**: To engage students in volunteer work with external organizations (e.g., police, orphanages) and promote social responsibility.

2. **Eligibility**: Open to all students.

3. **Duration**: Complete the required volunteer hours within a specified time frame (e.g., 1-2 months).

4. **Activity Options**: Students can volunteer at organizations like:

   o **Police Department** (community outreach, event assistance).

   o **Orphanages** (helping with children's care, tutoring, etc.).

   o **NGOs**, hospitals, etc.

5. **Minimum Hours**: Students must complete at least 20-30 volunteer hours.

6. **Documentation**: Students must keep track of their volunteer hours and tasks in an activity log.

7. **External Organization Certification**: After completing their service, students must obtain a **certificate** from the organization (e.g., police, orphanage) confirming:

   o Total hours worked.

   o Tasks performed.

   o Authorized signature and stamp.

8. **Registration**: Students inform the college about their chosen volunteer activity and organization before starting.

9. **Approval Process**: Before starting, submit a brief proposal to the college outlining the activity and organization.

10. **Final Report:** Submit a final report summarizing the work done and personal reflections.

11. **Certificate Submission**: Submit the certificate from the external organization, along with the activity log and final report, to the college.

12. **Evaluation**: The college will evaluate the program based on hours worked, quality of service, and documentation.

13. **Completion:** Students who fulfill the requirements will receive recognition from the college for their participation.

14. **Ethics:** Maintain professionalism, respect confidentiality, and follow the organization's rules.

15. **No Monetary Compensation:** The program is voluntary, and students should not receive any payment for their work.

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Semester :-VI

Subject Code: - 24BBA24406

Subject Name :- Computer Network

Total Contact Hours: 30   **Total Credits:- 2**

Pre-Requisite: Students should have **Basic Knowledge of Computer Systems** and internetTechnologies

Course Objectives:

- To understand basics of computer networking.
- To learn usage of devices in computer networking.
- To study the need of security in computer networks and basics of security

Course Outcome: At the end of the course, students will able to

- Usebasics of networking concept to link devices innetwork

- Draw the working of networking models like OSI model AndTCP IP Mode.

- Apply the basics of cryptography.

Unit	Topic	No. of Lectures
1	**Basics of Computer Networks** 1.1 Basics of Computer Network : Definition , Goals ,Applications, Network Hardware – 1) Broadcast, 2) Point to Point ,Componentsof Data Communication 1.2 Network Topologies, Types and Communication : Mesh , Star, Bus,Ring , LAN, MAN, WAN, Internetwork, Wireless Network, Simplex, Half Duplex, Full Duplex 1.3 Server Based LANs & Peer-to-Peer LANs 1.4 Protocols and Standards	8
2	**Network Models** 2.1 OSI Reference Model : Functions of each Layer , Working of **P**hysical Layer, Working of Data Link Layer 2.2 TCP/IP Reference Model, Comparison of OSI and TCP/IP	7

	Reference Model
	
	2.3 TCP/IP Protocol Suite
	2.4 Addressing
	   2.4.1 Physical Addresses
	   2.4.2 Logical Addresses
	   2.4.3 Port Addresses,
	
	   2.4.4 Specific Addresses
	
	2.5 IP Addressing
	   2.5.1 Classfull Addressing
	   2.5.2 Classless Addressing		

3	**Transmission Media**
	
	3.1 Introduction, Types of Transmission Media
	3.2 Guided Media:
	   3.2.1 Twisted Pair Cable
	   3.2.2 Coaxial Cable
	   3.3.3 Fiber Optic Cable
	3.2 Unguided Media:
	   3.2.1 Electromagnetic Spectrum for Wireless Communication
	   3.3.2 Propagation Modes Ground,Sky,Line-of-Sight
	   3.3.3 Wireless Transmission:Radio Waves,Microwaves, Infrared
		8	

4	**Wired and Wireless LAN** 4.1 IEEE Standards 4.2 Standard Ethernet MAC Sublayer,Physical Layer 4.3 Fast Ethernet – Goals, MAC Sublayer,Topology, Implementation 4.4 Gigabit Ethernet – Goals, MAC Sublayer,Topology, Implementation 4.5 Ten-Gigabit Ethernet – Goals, MAC Sublayer, Physical Layer 4.6 Backbone Networks -Bus Backbone, Star Backbone	7	
	Total Lectures	30	

References:
1. "Computer Networking: A Top-Down Approach" by James Kurose and Keith Ross"
2. "Computer Networks" by Andrew S. Tanenbaum and David J. Wetherall"
3. "Computer Networks and Internets" by Douglas E. Comer"
4. "Introduction to Computer Networks and Cybersecurity" by Chwan-Hwa (John) Wu and J. David Irwin"
5. "Wireless Communications & Networking" by Vijay K. Garg

Subject Code: - 24BBA23507

Subject Name :- Digital Marketing

Total Contact Hours:- 30   **Total Credits:- 2**

Prerequisite:-

1. Basic Understanding of Computers and Internet
2. Basic Knowledge of Marketing Principles.
3. Basic Knowledge of Social Media Platforms
4. Familiarity with Online Content Creation

Course Objectives:-

- To explore digital marketing concepts in and as business.
- To understand concept of SWOT analysis, SEO optimization and use of various digital marketing tools.

Course Outcomes:-At the end of the course, students will able to

- Apply the concept of digital marketing in real-world .
- Articulate innovative insights of digital marketing enabling a competitive edge.

Unit	Topic	No. of Lectures
1.	**E-Commerce** 1.1 Introduction 1.2 Understanding Internet Marketing 1.3 Search Engine Optimization 1.4 Search Engine Marketing 1.5 Digital Display Marketing	**4**
2.	**Introduction to New Age Media (Digital) Marketing** 2.1 Types of Digital Marketing -Affiliate Marketing(Niche ProductList, Amazon Affiliate Program, Flipkart Affiliate Program, Posting on social Media, Google Trends) 2.2 Overview of Internet Marketing ,Social Media Marketing, Mobile Marketing.	**5**
3.	**Creating Initial Digital Marketing Plan** 3.1 SWOT analysis: Strengths, Weaknesses, Opportunities,and Threats. 3.2 Freelancing(Introduction about Freelancing, Branch inFreelancing- Designing, Video Making ,Writing, Programming, Fun and Life Stylish, Social media Marketing, Business 3.3 Target group analysis	**6**

4.	**Customer Relationship Management** 4.1 Introduction to CRM 4.2 CRM platform	**5**
5.	**Social Media Marketing** 5.1 Social Networking (Facebook, LinkedIn, Twitter, etc.) Social Media (Blogging, Video Sharing - YouTube, Photo sharing – Instagram, Podcasts) 5.2 Web analytics - levels 5.3 Modes of Social Media Marketing- 5.3.1Creating a Facebook page Visual identity of a Facebook page , Types of publications, Facebook Ads , Creating Facebook Ads , Ads Visibility 1. Creating Content For Facebook and Social Media i.Why Content is the Foundation of SMW? ii.Psychology of Social Sharing iii.Building Content that is Inherently Shareable 5.3.2Business opportunities and Instagram options Optimization of Instagram profiles , Integrating Instagram with a Web Site and other social networks ,Keeping up with posts 5.3.3Business tools on LinkedIn Creating campaigns on LinkedIn , Analyzing visitation on LinkedIn 5.3.4Creating business accounts on YouTube YouTube ,Advertising , YouTube Analytics 5.3.5LinkedIn as a Marketing Platform 5.3.6Twitter and Snapchat Marketing 5.4 Digital Marketing tools: Google Ads, Facebook Ads, Google Analytic, Zapier, Google Keyword Planner	**10**
	Total Lectures	**30**

References:

1. "Digital Marketing: Strategy, Implementation, and Practice" by Dave Chaffey and Fiona Ellis- Chadwick
2. "SEO 2024: Learn Search Engine Optimization with Smart Internet Marketing Strategies" by Adam Clarke.
3. "Social Media Marketing: A Strategic Approach" by Melissa Barker, Donald I. Barker, and Nicholas F. Neher
4. "Influence: The Psychology of Persuasion" by Robert B. Cialdini
5. "Email Marketing Rules: A Step-by-Step Guide to the Best Practices that Power Email Marketing Success" by Chad White