Shri Shankaracharya Technical Campus

Shri Shankaracharya Group of Institutions

(An Autonomous Institute affiliated to Chhattisgarh Swami Vivekanand Technical University Bhilai)

Scheme of Examination and Syllabus 2020

SCHEME OF TEACHING AND EXAMINATION (Effective from 2020 – 2021 Batch)

M.C.A. Second Semester

Sl. No.	Board of Studies (BOS)	Courses (Subject)	Course Code	Period per Week			Scheme of Examination			Total Marks	Credit
				L	T	P	Theory/Lab				
							ESE	CT	TA		
1	Computer Applications	Programming with Java	CA261201	3	1	-	100	20	20	140	4
2	Computer Applications	Computer Networks	CA261202	3	1	-	100	20	20	140	4
3	Computer Applications	Artificial Intelligence & Expert system	CA261203	3	1	-	100	20	20	140	4
4	Computer Applications	Operating System with UNIX	CA261204	3	1	-	100	20	20	140	4
5	Management	**Elective - I**	**Refer Table1**	3	1	-	100	20	20	140	4
6	Computer Applications	Java Lab	CA261291	-	-	4	75	-	25	100	2
7	Computer Applications	UNIX Lab	CA261292	-	-	4	75	-	25	100	2
8	Computer Applications	Web Technology Lab	CA261293	-	-	4	75	-	25	100	2
9		Personality Development	CA261294	-	-	2	-	-	-	-	-
Total Marks				**15**	**5**	**14**	**725**	**100**	**175**	**1000**	**26**

Abbreviations used: L-Lecture, T-Tutorial, P-Practical, ESE-End Semester Exam, CT- Class Test, TA-Teacher's Assessment.

Table 1

Code no.	Elective 1 (Management)
CA261221	Introduction to Management Functions
CA261222	Organizational Change &Development
CA261223	Behavioral Perspectives in Management
CA261224	Enterprise Resource Planning
CA261225	Digital Marketing

Subject Code CA261201	Programming with Java	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To learn fundamental concept of Java programming, OOPs concept and String handling. 2. To learn handling of runtime error Exception" and Multithreading. 3. To learn File handling, network programming and distributed client/server based application development. 4. To learn event handling and I/O Interface design and development with database. 5. To learn website development using and server side coding.	**CO1:**Students will be able to write OOPs programs, be able to handle Strings. **CO2:**Students will be able to handle runtime errors, and will be able to create multi-threads. **CO3:**Students will gain skills in network programming using Java network APIs, TCP / IP sockets, and distribute application development using RMI. **CO4:**Students will be able to create I / O interfaces using event handling via the Swing API and AWT API and will be able to develop standalone software. **CO5:**Students will obtain the skill to develop the website using APPLET and Servlet.

UNIT I: Concept of Object Oriented Programming (OOPs):[CO1]

Features of Java, Byte-code, JVM, Java data types, variables and arrays, vector, control statements, Introduction to Java class and object, main() function, garbage collection and finalize() method, this, inheritance, method overriding, dynamic method dispatching, calling constructor of super class, super, passing parameters to super class, final, package, interface, abstract class, class path, String and StringBuffer Class.[**7 hrs.]**

UNIT II: Exception Handling and Multithreading: [CO2]

Exception types, uncaught Exception, using try- catch, throw, throws, finally, Throwable class and object, Exception classes, create own exception subclass. Creating multiple threads using Thread class and Runnable interface, isAlive(), join(), Thread priorities, SYNCHRONIZATION, DEADLOCK handling, wait(), notify(), notifyAll() methods, InterThread Communication (ITC), suspend, resume and stop the threads. **[7 hrs.]**

UNIT III: File handling and Java Networking: [CO3]

I/O classes & Interfaces, FILE, The Stream Classes, the Byte stream (InputStream, OutputStream, FileInputStream, FileOutputStream), SERIALIZATION. Java networking: Networking classes and Interfaces, InetAddress, TCP/IP Client/Server socket, URL, URLConnection, Datagram, Distributed application development using Remote Method Invocation (RMI).[**6 hrs.]**

UNIT IV: Standalone Software development:[CO4]

Delegation event model, Event sources, Event classes, Event listener interface, Introduction to AWT, Layout managers: setLayout(), Swing: benefits of Swing over AWT, JFrames, JPanels, JLabels, JButtons , JTabbedPane, ,JSplitPane, JOptionPane, JComboBox, JListBox, JTextField, JTextArea, JScrollPane, JMenu, JToolbar, JDialog, JTable, JDesctopPane, JInternalFrame, Java Database Connectivity: JDBC, Connectivity with Oracle/MySQL/MS-Access RDBMS. [**6 hrs.]**

UNIT V: Website development:[CO5]

The Applet class, Applet Architecture, Applet skeleton, HTML APPLET Tag, Passing parameter to Applet, getDocumentBase(), getCodeBase(), Applet Context, showDocument(). Web server: Tomcat &Jboss-Introduction overview, installation, Configuring, and comparison, Servlet: Background, life cycle, A simple servlet, Servlet Request/ Response interface, reading servlet parameters,cookies, session tracking. Introduction to advanced technologies: EJB, STRUTS, HIBERNATES, SPRING, JSP, JSF, AJAX. [**7 hrs.]**

Subject Code CA261201	Programming with Java	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	The Complete Reference Java 2 (Updated to Cover J2SE 1.4),	Herbert Scheldt	5th	Tata McGraw-Hill publishing company Ltd
2)	Head First Java, Kathy Sierra	Bert Bates	2nd	O'Reilly Media

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Java2forProfessionalsDevelopers,	Michael Morgan	2nd	SAMS, Techmedia, New Delhi.
2)	Thinking in Java, The Definitive Introduction to Object-Oriented Programming in the Language of World-Wide-Web	Bruce Echel	2nd	Pearson Education.
3)	CoreJava2Volume-IFundamentals	CayS. Horstmann Gary Cornell	Volume 1	Pearson Education
4)	Java2Developer'sHandBook	Philip Hellerand Simon Roberts	1st	BPB Publication,NewDelhi
5)	Java Swing	Loyand Wood	2nd	O'Reilly

Subject Code CA261202	Computer Networks	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1.To make student know, the network architecture and insight working of network in terms of layered architecture . 2.To make students know, the general principles of network in terms of routing algorithm and Internet architecture and addressing. 3.To provide comprehensive knowledge to the students regarding the Internet connectivity and Internet service-email routing,FTP,Telnet. 4.To make students know, the Web hosting technology and maintenance. 5.To make students know, the security aspects in network and implementing it through various methodologies.	**CO1:**The students will be able to understand the structure and organization of computer networks role of each layer, functioning of physical layer. **CO2:**The students will have in depth understanding of data link layer and network layer concepts and protocol design. **CO3:** The students will have in depth understanding of user support layers concepts and protocol design. **CO4:** The student will be able to understand how to host a website in the web server and maintenance. **CO5:** The students will be able to understand the basic concepts of network security concepts; including authentication, integrity and system security design challenges.

UNIT-I: Introduction to CN and Function of Physical layer: [CO1]
The Computer Network, Layered Network Architecture, OSI reference model, Data Communication Techniques: Pulse Code Modulation (PCM), Multiplexing Techniques: Time Division Multiplexing. Physical Layer: Transmission Media-Wires, Cables; Error Detection and Correction: Single and Burst Error, Parity Check Codes, Cyclic Redundancy and Hamming Code**[7hrs]**

UNIT-II: Functions of Data Link Layer & Network Layer: [CO2]
The Data Link Layer Protocols and Network layer: Functions of data link layer protocol. IEEE 802.3, 802.4 and 802.5 Protocols. Token Ring Protocol, General Principles, Virtual Circuits and Datagram, Internetworking using Bridges, Routers and Gateways. Internet Architecture and addressing, Traffic Shaping: Leaky Bucket, Token Bucket, and Routing Algorithms: shortest path routing-Dijkstra.**[7hrs]**

UNIT-III:Functions of User Support layers and its applications:[CO3]
Element of TCP/Protocol: TCP, UDP, ICMP, IGMP, HTTP, SMTP, DHCP, Abstract Syntax notation. 1 (ASN-1), Simple Network Management Protocol (SNMP), FTP, Types of FTP, Telnet, Domains, Internet service providers (ISP), Types of ISPs, Internet connectivity such as dial up, Broadband: DSL (ADSL/SDSL),ISDN, WiFi, Satellite broadband, leased line, VSAT. Email routing, E-mail routing protocols: POP-3, IMAP. [**7hrs]**

UNIT-IV: Website Planning Hosting & Maintenance:[CO4]
Web publishing tool, Website planning, Where to host your website , Multiple sites on one server, Maintaining a web site, Web Client, and Servers-Tomcat, Registration of Website on Search engines , maintenance of a website..[**6hrs]**

UNIT-V:Internet Security:[CO5]
Internet security threats, Firewalls, Introduction to AAA, Service net, Deep net, Dark net, E-Commerce: Introduction, concepts & technology, advantages, limitations, Electronics Payment System (EPS) network, Payment gateway, Introduction to EDI.**[6hrs]**

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Subject Code CA261202	Computer Networks	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Computer Network	A.S. Tanenbaum	3rd	Prentice Hall, India.
2)	Data Communication	B.A .Frouzan	2nd	Tata McGraw Hill
3)	Internet for Every One	Alexis Leon and Mathews Leon,	2nd	Tech World.2008 print

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Data& Computer Communications	W. Stalling	International Ed	Max well Macmillan
2)	Computers Today	S.K.Basadra	2nd	Galgotia Publication
3)	Internet working with TCP/IP	D.E. Coner	Vol-I	Prentice Hall India
4)	Local Area Networks	G.E. Keiser	International Ed	McGraw Hill,

Subject Code CA261203	Artificial Intelligence & Expert System	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To make students learn to define problem of complex nature, state space of problem domain and searching techniques to solve them. 2. To make students understand concept of heuristic and how it is applied to solve AI based problem along with mechanism to represent knowledge structures and inference procedure. 3. To make students learn about various knowledge representation techniques 4. To make student learn processing of natural language and challenges associated with it. 5. To make students understand concept of Expert System, its design issues and application along with importance of learning module in expert system.	**CO1:**Students develop an ability to visualize AI problems and importance of searching and control strategies. **CO2:**Studentslearns various algorithms used in AI game playing and how to prune state space using heuristics. **CO3:**Student will have understanding of different knowledge representation structure and inference mechanism with ability to apply them in intelligent solutions of complex problem. **CO4:**Students will develop skills needed for processing of natural language at syntactic and semantic level using Grammar and also how important planning is while designing solution strategies. **CO5:**Student will be able to understand working of Expert system and importance of learning module in expert system.

UNIT – I General Issues and overview of AI : [CO 1]

The AI problems; what is an AI technique; Characteristics of AI applications Problem Solving, Search and Control Strategies General Problem solving; Production systems; Control strategies: forward and backward chaining Exhaustive searches: Depth first Breadth first search.

UNIT II Heuristic Search techniques: [CO 2]

Hill climbing; Branch and Bound technique; Best first search and A* algorithm; AND/OR Graphs; Problem reduction and AO* algorithm; Constraint Satisfaction problems Game Playing Minmax search procedure; Alpha-Beta cutoffs; Additional Refinements

UNIT – III Knowledge Representation: [CO 3]

First Order Predicate Calculus; Skolemzation; Resolution Principle and Unification; Inference Mechanisms Horn's Clauses; Semantic Networks; Frame Systems and Value Inheritance; Scripts; Conceptual Dependency

UNIT – IV Natural Language Processing and Parsing Techniques: **[CO 4]**

Context - free Grammar; Recursive Transition Nets (RTN); Augmented Transition Nets (ATN); Semantic Analysis, Case and Logic Grammars; Planning Overview - An Example Domain: The Blocks Word; Component of Planning Systems; Goal Stack Planning (linear planning); Non-linear Planning using constraint posting ; Probabilistic Reasoning and Uncertainty; Probability theory; Bayes' Theorem and Bayesian networks; Certainty Factor.

UNIT – V Expert Systems: [CO 5]

Introduction to Expert Systems, Architecture of Expert Systems; Expert System Shells; Knowledge Acquisition; Case Studies: MYCIN, Learning, Rote Learning; Learning by Induction; Explanation based learning.

Subject Code CA261203	Artificial Intelligence & Expert System	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Artificial Intelligence	Elaine Rich and Kevin Knight	3rd	Tata McGraw Hill
2)	Introduction to Artificial Intelligence and Expert Systems	Dan W.Patterson	3rd	Hall of India
3)	Artificial Neural Networks	B.Yegnanarayana	3rd	Prentice Hall of India

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Principles of Artificial Intelligence	Nils J. Nilsson	1st	Narosa Publishing house
2)	Artificial Intelligence : A Modern Approach	Stuart Rusell, Peter Norvig	2nd	Pearson Education
3)	Neural Networks	Siman Haykin	2nd	Pearson Education

Subject Code CA261204	Operating System with Unix	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To study and apply concepts relating to operating system. 2. To study CPU Scheduling, virtual memory and deadlocks. 3. To provide better understanding of Operating system concepts in the context of Unix Operating system. 4. To provide deeper understanding of Internal representation of Unix files and System call. 5. To understand Unix process structure, and working of kernel.	**CO1:** The students will be able to understand concepts relating to operating system, such as types of operating system, file system organization. **CO2:**The students will be able to understand concepts and problem solutions related with CPU Scheduling, virtual memory and deadlocks. **CO3:**The students will be able to understand Operating system concepts in the context of Unix Operating system . **CO4:**The students will be able to understand Internal representation of Unix files and various System calls. **CO5:**The students will be able to understand Unix process structure, and working of kernel.

UNIT-I:Introduction to Operating System: [CO1]

Functions provided by operating system, Operating system services,Introduction to multiprogramming, batch interactive Time sharing, and real time systems. Introduction to file systems, Access and allocation methods of file systems, Directory structure of a file system on a disk and tape, File protection. [**7hrs]**

UNIT-II:Introduction to Scheduling, Memory Management: [CO2]

CPU scheduling, various types of CPU scheduling algorithms and their evaluation. Various types of memory management schemes like paging, Segmentation etc. Concept of virtual memory, Meaning of demand paging, various page replacement algorithms. **[7hrs]**

UNIT-III:Concurrency and Deadlocks:[CO3]

Introduction to concurrent processing, Precedence graphs,Meaning of deadlocks, Resource allocation graphs, Deadlock Characterization, Various methods to avoid deadlocks like deadlock avoidance, Deadlock detection, Deadlock prevention, Banker's algorithm for deadlock avoidance. Critical section problem, Semaphore concept, Study of classical process co-ordination problem.[**7hrs]**

UNIT-IV:Introduction to Unix OS:[CO4]

Architecture and Features of Unix O/S, History of Unix, flavors of Unix, Layered architecture of Unix O/S, Unix file system and its layout(Boot block, Super block, Inode, Data block), concept of Inode, Buffer cache:Buffer headers, Structure of the buffer pool, scenarios for retrieval of a buffer, Reading and writing disk Blocks,advantage and disadvantage of buffer cache. [**6hrs]**

UNIT-V:Representation of Files, System Calls and Process: [CO5]

Inodes, Algorithms for allocation of incore inode (iget) ,iput algorithm. structure of regular file , Directories, conversions of a path name to an Inode, Super Block, Inode Assignment to a New File, Allocation of Disk Blocks. OPEN , READ ,WRITE, CLOSE, Process States and Transitions, layout of System Memory, fork() and exit() system call.[**6hrs]**

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Subject Code CA261204	Operating System with Unix	L = 3	T = 1	P = 0	Credits = 4
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1.	Operating System Design & Implementation	Tanenbaum, A.S.	Third	PHI
2.	Operating system concepts	Silberscatz	Eighth	John Weiley& Sons
3.	Operating systems	H. M. Deital	Third	Pearson Education
4.	Design of Unix O.S.	Maurice Bach	Sixth	Prentice Hall of India
5.	Advance UNIX a Programming Guide	Steven Prata	First	BPB publication, New Delhi
6.	UNIX Concepts and Applications	Sumitabha Das	Fourth	Tata McGraw Hill

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1.	Operating System in Depth Design and Programming	Thomas Doeppner	Sixth	Wiley India
2.	Operating System Concept & Design	Milenkovic M	Second	McGraw Hill
3.	Operation System	Stalling William	Seventh	Maxwell MCMillan International Edition
4.	The UNIX Programming Environment	B.W. Kernighan & R. Pike	Seventh	Prentice Hall of India
5.	UNIX and shell programming	Frouzan B.A. &Gilberg R.E.	Fourth	Cengage Learning
6.	UNIX shell programming	YashavantKanetkar	Fourth	BPB Publication

Subject Code CA261291	Java Lab	L = 0	T = 0	P = 0	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	3 Hours

Course Objectives	Course Outcomes
1. To learn fundamental concept of Java programming, OOPs concept and String handling. 2. To learn handling of runtime error Exception" and Multithreading. 3. To learn File handling, network programming and distributed client/server based application development. 4. To learn event handling and I/O Interface design and development with database. 5. To learn website development using and server side coding.	**CO1:**Students will be able to write OOPs programs, be able to handle Strings. **CO2:**Students will be able to handle runtime errors, and will be able to create multi-threads. **CO3:**Students will gain skills in network programming using Java network APIs, TCP / IP sockets, and distribute application development using RMI. **CO4:**Students will be able to create I / O interfaces using event handling via the Swing API and AWT API and will be able to develop standalone software. **CO5:**Students will obtain the skill to develop the website using APPLET and Servlet.

UNIT I: Concept of Object Oriented Programming (OOPs):[CO1]

1. Write a program to demonstrate creating object a class and call the methods of the class with different access modifiers (public, and private)
2. Write a program to demonstrate garbage collection through the finalize method() with a suitable example.
3. Write a program to create multiple constructors with different parameters in the class and use them to create objects with a suitable example code.
4. Write a program to access method and variables of two Objects (Message passing).
5. Write a program to demonstrate inheritance single and multilevel with a suitable example code.
6. Write a program to demonstrate constructors call in the multilevel inheritance.
7. Write a program to demonstrate dynamic-methods dispatching with a suitable example code.
8. Write a program to demonstrate use of 'this' with a suitable example code.
9. Write a program to demonstrate use of 'super' in the multilevel inheritance with a suitable example code.
10. Write a program to pass parameters to constructors of super class using 'super'.
11. Write a program to demonstrate interface and abstract class with a suitable example code.
12. Write a program to demonstrate how to create a package with a suitable example code.
13. Write a program to demonstrate handling the String through String class of Java. Use suitable example.

UNIT II: Exception Handling and Multithreading: [CO2]

14. Write a program to demonstrate uncaught exception without using try-catch block.
15. Write a program to demonstrate caught exception using try-catch block.
16. Write a program to demonstrate throw and throws using a suitable example code.
17. Write a program to demonstrate to create own exception class by using a suitable example code.
18. Write a program to create multi-thread using Runnable interface with a suitable example code.
19. Write a program to create multi-thread using Thread class with a suitable example code.
20. Write a program to demonstrate isAlive() method of the thread class with a suitable example code.
21. Write a program to demonstrate join () method of the multi-threads class using suitable example code.
22. Write a program to set priority and get priority of the multi-thread using suitable example code.
23. Write a program to demonstrate synchronization of multi-threads with a suitable example code.
24. Write a program to demonstrate Deadlock occurrence in the multi-threads with a suitable example code.
25. Write a program to demonstrate inter-threads communications using wait () and notify () method of the thread class by using suitable example code.

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Subject Code CA261291	Java Lab	L = 0	T = 0	P = 0	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	3 Hours

26. Write a program to demonstrate suspend (), resume () and stop () of the thread class using suitable example code.

UNIT III: File handling and Java Networking: [CO3]

27. Write a program to demonstrate read and write file content from and to the File using FileInputStream and FileOutputStream class.
28. Write a program to demonstrate handling IPAddress through InetAddress class.
29. Write a program to demonstrate how to send and receive text message using TCP/IP socket between client and server.
30. Write a program to connect on a port number and fetch the content from the server using URL and URLConnection class with a suitable example code.
31. Write a program to demonstrate broadcasting a message using Datagram class over UDP protocol using a suitable example code.
32. Write a program to create server and client to send message to the server and receive the processing data in the client using RMI with a suitable example code.

UNIT IV: Standalone Software development:[CO4]

33. Write a program to create an I/O interface by using necessary suing components.
34. Write a program to handle event of all source of event source component of Java Swing.
35. Write a program to create Frame with menu bar, toggle buttons and menu items.
36. Write a program to create desktop pane (MDI) with multiple internal frames and dialogs.
37. Crate an I/O interface with database connectivity, and insert data in to the table.
38. Crate an I/O interface with database connectivity, and retrieve the data from the table.
39. Crate an I/O interface with database connectivity, and update data record in the table.
40. Crate an I/O interface with database connectivity, and delete recode data from the table.

UNIT V: Website development:[CO5]

41. Write a program to demonstrate all method of applet class of applet life cycle with a suitable example code.
42. Write a program to call an Applet from the HTML deocument with an example.
43. Write a program to demonstrate how to pass parameters from HTML document to the Applet with a suitable example code.
44. Write a program to switch from one applet to another Applet using getDocumentBase(), getCodeBase(), Applet Context, showDocument() methods with a suitable example code.
45. Install tomcat in the server and connect to the server via any Webclient.
46. Write a program to create a simple Servlet to send message 'HELLO' to the client.
47. Write a program to receive the data send from the client's HTML document.
48. Write a program to create a HTML form document as client to send data to the HTTP Servlet, receive data and store the data in to the database by Servlet and respond to the client via Tomcat web server.
49. Write a program to demonstrate get and set cookies through HTTP Servet with a suitable example code.
50. Write a program to demonstrate session handling through HTTP Servlet with a suitable example code.

Subject Code CA261291	**Java Lab**	**L = 0**	**T = 0**	**P = 0**	**Credits = 2**
Evaluation Scheme	**ESE**	**CT**	**TA**	**Total**	**ESE Duration**
	75	**0**	**25**	**100**	**3 Hours**

Text Books:

S. No.	**Title**	**Authors**	**Edition**	**Publisher**
1)	The Complete Reference Java 2 (Updated to Cover J2SE 1.4),	Herbert Scheldt	5th	Tata McGraw-Hill publishing company Ltd
2)	Head First Java, Kathy Sierra	Bert Bates	2nd	O'Reilly Media
3)	Java2forProfessionalsDevelopers,	MichaelMorgan	2nd	SAMS,Techmedia,NewDelhi.

Reference Books:

S. No.	**Title**	**Authors**	**Edition**	**Publisher**
1)	Thinking in Java,The Definitive Introduction to Object-Oriented Programming in the Language of World-Wide- Web	BruceEchel	2nd	Pearson Education.
2)	CoreJava2Volume-IFundamentals	Cay S. Horstmann Gary Cornell	Volume 1	Pearson Education
3)	Java2 Developer's HandBook	Philip Hellerand Simon Roberts	1st	BPBPublication,New Delhi
4)	Java Swing	Loyand Wood	2nd	O'Reilly

Subject Code CA261292	UNIX Lab	L = 0	T = 0	P = 0	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	3 Hours

Course Objectives	Course Outcomes
1. To learn fundamental and Advanced Commands of Unix. 2. To learn different modes of Vi editor . 3. To learn how to execute shell script programs. 4. To learn about AWK programming	**CO1:**Students will be able to execute fundamental and advanced commands of Unix. **CO2:**Students will be able to write source code in Vi-editor with various modes. **CO3:**Students will be able to write and execute shell script programs. CO4: Students will be able to write programs using AWK.

Module I: Concept of UNIX Basic commands, directory and files related commands, administrative commands:[**CO1]**

1. Basic commands such as who, pwd, cd, mkdir, rm, rmdir, ls, mv, ln, chmod, cp, grep, sed, tr, etc. getting started (login/logout) redirection operators, pipe operator

2. Advanced commands: tr, sed, filters, redirection operators, pipe operator.

Module II: Introduction to Vi Editor :[**CO2]**

1. modes of Vi-editor : insert mode,Command Mode and Execute mode

2. set command in vi editor

Module II: Shell Script Programming : [**CO3]**

1. Consider the data file containing columns: item name ,id, number of item sold and cost per item. Write a shell script to display

i) Total no. of item sold ii) Total cost of individual item iii) Total cost of all item

2. Write shell script to display menu for the following

a. Display file contents with line number **b.** Display the file contents with page break **c.** Quit.

3. Write a shell script for accepting the following information and storing it in file.

i) customer name **ii)** item description

iii) quantity **iv)** rate the user should get the facility to enter any number of records.

4. Write menu driven shell script to execute 5 basic command of UNIX.

5. Write shell script to check the no is prime or not.

6. Find greatest among three no. using shell script.

7. Write interactive shell script to copy the contents of one file to another.

8. Display the output of ls-l command in user friendly way.

9. Write a shell script to search a word in list of file .Take the file name as input from command line argument in which one of them will contain words to search and another will contain name of files.

10. Write shell script to check whether the string is-

i. vowel **ii.** 'unix' or 'UNIX **iii.** it is two character long **iv.** quit

11. Write shell script to perform following for each file of current directory-

i. To delete a file if its extension is .old **ii.** To copy a file it its extension is .c

iii. To move a file it its extension is .txt **iv.** To display the contents of file if it has read permission

12. Write a shell script to delete one of the file if two file are similar if not, display proper message. Using command line argument.

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Subject Code CA261292	UNIX Lab	L = 0	T = 0	P = 0	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	3 Hours

13. Write a shell script to delete one of the file if two file are similar if not, display proper message. Without using command line argument.
14. Write shell script to generate multiple answer type questions.
15. Write a shell script that accepts one or more file names as arguments and converts their contents to uppercase.
16. Write a shell script using set command which uses date that prints the usual date output as default but which has options for printing just the time, just the day-month-year or just the day of week.
17. Write a shell script program to sort the numbers in descending order supplied as command line arguments.

Module IV: AWK Programming : **[CO4]**

1. Intoduction to Awk concepts and Operations.
2. AWK built in variables such as NR,NF,OFS,FS,RS etc..
3. Find the factorial of any number using Awk .
4. Write awk Program to count the number of times each word occurs in a sorted list that contains one word per line.
5. Write a program to check whether entered number is prime number or not using Awk .

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Unix Concepts and Applications	Sumitabha Das	4th Ed.	Tata McGraw-Hill
2)	Unix and Shell Programming	B.A. Forouzan	-	Cenegage Learning India Private Limited

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Unix Shell programming	Y. Kanetkar	-	BPB Publications

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Shri Shankaracharya Technical Campus

Shri Shankaracharya Group of Institutions

(An Autonomous Institute affiliated to Chhattisgarh Swami Vivekanand Technical University Bhilai)

Scheme of Examination and Syllabus 2020

MCA 2nd Semester

Subject Code CA261293	Web Technology Lab (HTML, CSS, Java Script)	L = 0	T = 0	P = 4	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	

Course Objectives	Course Outcomes
1. Insert a graphic within a web page, create a Link/Table within a web page, insert ordered and unordered lists within a web page. 2. Use cascading style sheets. 3. Create, Validate and Publish an Effective web page.	**CO1:**Use knowledge of an **HTML** editor to create personal and/or business websites following current professional and/or industry standards. **CO2:**Create cascading style-sheets (CSS) for device and browser integration **CO3:**Use critical thinking skills to design and create websites, know variable naming rules and JavaScript data types, Identify expressions and operators, know flow control, define functions and methods.

MODULE-1: HTML [CO1]

1. Program to describe various text formatting commands.
2. Program to create an Unordered list.
3. Program to create an Ordered list.
4. Program to create a Table.
5. Program to create a simple form.
6. Program to create a Hyper link.
7. Program to insert an image to Web page.
8. Program to insert scrolling text using Marquee tag.
9. Program to divide a page into Frames.
10. Program to create a simple layout of Webpage.

MODULE-2: CASCADING STYLE SHEETS [CO2]

1. Easy paragraph formatting
2. Change letter case
3. Change link colors
4. Remove link underlines
5. Make a link button
6. Create a text box
7. Create Customize Button
8. Center-align elements
9. Adjust padding
10. Highlight table rows

MODULE-3: JAVA SCRIPT [CO3]

1. Program to get value from the text box.
2. Program to swap two strings.
3. Program to add text to a particular division in the page.
4. Program to change style of a text at runtime.
5. Program to create a scrolling banner.
6. Program to change color of the text box if empty string submitted.
7. Program to Display Digital clock.
8. appendChild example.

		October 2020	1.00	Applicable for AY 2020-21 Onwards
Chairman (AC)	Chairman (BoS)	Date of Release	Version	

Subject Code CA261293	Web Technology Lab (HTML, CSS, Java Script)	L = 0	T = 0	P = 4	Credits = 2
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	75	0	25	100	

9. removeChild example.
10. onClick Event example.
11. onChange Event example.
12. onFocus Event example.
13. onSubmit Event example.
14. onMouserOver and onMouseOut example
15. Displaying Date and Time.
16. Displaying Date only.
17. Displaying Time only.
18. createElement and createTextNode example.
19. Redirection using location object.
20. Swaping two images.

Text Books:

S. No.	Title	Authors	Edition	Publisher
1.	Mastering HTML, CSS & JavaScript Web Publishing	Lemay Laura, Rafe Colburn, Jennifer Kyrnin	Seventh	BPB Publication
2.	HTML & CSS: The Complete Reference	Thomas A. & Powel	Fifth	McGraw Hill

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1.	Beginning Java Script	Paul Wilton	Fourth	SDP Publication
2.	Beginning HTML and CSS	Rob Larsen	-	John Wiley & Sons, Inc

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Scheme of Examination and Syllabus 2020

MCA 2nd Semester

Subject Code CA261294	Personality Development	L = 0	T = 0	P = 2	Credits = 0
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
			20	20	

Course Objectives	Course Outcomes
To prepare professionals with idealistic and moral values to enhance holistic development of students and improve their employability skills	**CO1:**-Student will be able demonstrate clear understanding about personality and personality traits **CO2:**- Student will be able develop positive attitude and self-motivation. **CO3:**- Student will be able demonstrate effective interpersonal skills **CO4:**- Student will be able display efficient leadership skills **CO5:**- Student will be able demonstrate productive employability skills

UNIT – I Personality Concepts

a) Introduction
b) Types of personality
c) Physical & Psychic Aspects.
d) Developing positive self-image and Excellence.
e) Preparation of Self Introduction
f) Body Language
g) Activities/ Assessment

UNIT – II Attitude and Motivation

a) Meaning of Attitude
b) Benefits of Positive Attitude
c) Developing Positive Attitude and Positive Thinking
d) Meaning of Motivation
e) Types & theories of Motivation
f) Art of Self-Motivation
g) Relationship between Attitude & Motivation
h) Activities/ Assessment

UNIT – III Interpersonal Skills

a) Introduction- Meaning, Components and Benefits of Interpersonal Skills
b) Behavioural Aspects
c) Maintenance of relationship
d) Emotional Intelligence
e) Techniques to develop Interpersonal Skills
f) Activities/ Assessment

UNIT – IV Leadership Ability

a) Introduction to Leadership
b) Skills to be a good Leader
c) Techniques to develop Leadership Skills
d) Negotiation Skills
e) Conflict Resolution/Decision Making

Subject Code CA261294	Personality Development	L = 0	T = 0	P = 2	Credits = 0
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
			20	20	

f) Activities/ Assessment

UNIT – V Employability Skills

a) Emotional Intelligence
b) Team Building
c) Group Dynamics
d) Professional Personality
e) Time Management
f) Work Ethics
g) Handling Conflict & Stress
h) Activities/ Assessment

Subject Code CA261221	Introduction to Management Functions	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To understand different aspects of management and administration and the process and type of planning. 2. To understand motivation and its theories and importance of communication in organization. 3. To understand different aspects of management functions such as marketing, production and financial management. 4. To understand HRM process and different aspects of individual behavior related to job 5. To understand how to make balance sheets, profit & loss and trial balance.	On successful completion of the course, the student will be able to : **CO1:** Students will be able to understand the theoretical understanding of management and administration and to develop insights into the step-by-step processes involved in the development of plan. **CO2:** Students will be able to adapt the concept of motivation and ways to apply motivation technique in real world and also to use communication as an effective tool for management. **CO3:** Students will be able to apply functional knowledge of management real world. **CO4:** The student will be able to understand the basics of HRM and to analyze formal and informal relation in an organization. **CO5:** Students will be able to understand how to make balance sheets, profit & loss and trial balance.

Unit-I: Fundamentals of Management: [CO1]

Management functions, Management and Administration, Principles of management. Planning – Nature of Planning, Types of Planning, steps in planning, advantages and limitations of planning.**[7Hrs]**

Unit II: Motivation and Communication: [CO2]

Motivation: Theories of Motivation, Need Hierarchy Theory, Maslow's theory, Herzberg's Theory. **Communication –** Meaning and Importance, Process of Communication, channel of communication, communication media, Communication networks, barriers to communication**. [7Hrs]**

Unit-III: Financial Management: [CO3]

Scope of Financial Management, Objectives of financial management, Meaning and objects of accounting, Accounting Cycle, Accounting concepts and conventions, accounting, equations, rules of journalizing, ledger posting, Cash book, preparation of trial balance, trading and profit and loss, account and balance sheet with adjustments relating to closing stock, outstanding expenses, prepaid expenses, Accrued income, depreciation, Bad debts, provision for bad debts, provision for discount on debtors and creditors. [**6Hrs]**

Unit IV: Human Resource Management : [CO4]

Functions and objectives, planning process, selection process, Training process, Individual Behavior, Formal and informal relations. Job satisfaction – theories of job satisfaction, determinants of job satisfaction, job satisfaction and productivity.**[6 Hrs]**

Unit-V: Concept of Marketing and Production Management:[CO5]

Concept of Marketing - Importance of Marketing, managerial Function of marketing, marketing Mix, marketing and other functions, Nature and scope of Marketing Research. **Production Management –**Concept and scope, Production Planning, production control, organization for production planning and control, inter-relationships with other management functions.**[7Hrs]**

Subject Code CA261221	Introduction to Management Functions	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Organization and management	R.D. Agrawal		Tata McGraw- Hill Education
2)	Human Resource and Personnel Management	K. Aswathappa	6th	PHI
3)	Accounting for Management	Bhattacharya S. K. and Dearden John	-	Prentice Hall of India, New Delhi

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Understanding management	Richard L. Daft, Dorothy Marcic		Cengage Learning
2)	Basic Financial Management	M.Y. Khan, P.K. Jain	2nd	TMH
3)	The Essence of Financial Accounting	Chadwick		Prentice Hall of India, New Delhi

Subject Code CA261222	Organization Change and Development	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1.To familiarize with basic organizational processes to bring about organizational development. 2.To understand the necessity of organizational change and strategies to manage the same 3.To analyse and apply organisational development interventions as per business needs 4.To understand how change is affecting organizations and countries throughout the world.	CO1: The students will get familiarized with basic organizational processes required to bring about organizational development. CO2: The students will be able to understand the necessity of organizational change and strategies to manage the same CO3: The students will be able to analyse and apply organisational development interventions as per business needs CO4: The students will be able to understand how change affects organizations and countries throughout the world.

Unit-I: Organizational Change: [CO1]

Basic Concept and definition; Nature of Organizational Change (Need, factors influencing change); Types of Planned Change; Process of change, models of planned change- Kurt lewin model, Burke-Litwin Model, Roberts and Porras model, Change agent (Roles and responsibilities, Resistance to change); Overcoming resistance (Strategies & Techniques). [**7Hrs]**

Unit II: General introduction and Process of Organization Development: [CO2]

Organizational development: Definition, Assumptions, goals, process, objectives; Strategies: Diagnostics Activities, Team Building, Survey Feedback, Process Consultation, Planning & Goal setting. **[7Hrs]**

Unit-III: OD Interventions and Organization Process Approaches: [CO3]

OD interventions. Competencies and Ethics of OD Practitioner. Individual, Interpersonal, Group process approaches, Organization confrontation meeting, Intergroup relation Intervention, and Large group intervention. Restructuring Organizations, Employee involvement, Work Design, Social technical system approach. **[7Hrs]**

Unit IV: Organizational Conflicts: [CO4]

Causes, nature, measures to resolve organizational conflicts; Inter Group behavior and collaboration; Laboratory learning techniques; Managerial Grid; Sensitivity training; Transactional analysis; Inter-group and team building interventions.**[6 Hrs]**

Unit-V: Strategic Change Intervention:[CO5]

Competitive and collaborative strategies, Organization transformation. Organization Development in Global settings: Organization development across different countries, Worldwide organization development, Global social change. Future Directions in Organization Development**. [6Hrs]**

Subject Code CA261222	Organization Change and Development	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Organisational Development	French and Bell		Pearson Education
2)	An Experimental Approach to Organization Behavior	D.R. Brown		Pearson Education
3)	Understanding and managing diversity	Carol P Harvey and M.June Allard		PHI India
4)	Organisational Behaviour	F. Luthans		TMH , New Delhi

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Organisational Behaviour	S.P.Robbins		Pearson Education
2)	Organisation Development for Excellence	Prasad		McMillan, India
3)	Understanding Organization : Organization Theory and Practices in India	Madhukar Shukla		PHI

Subject Code CA261223	Behavioral perspectives in Management	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To groom the participants through sensitizing them about proper group dynamics and conflict resolution techniques. 2. To develop the confidence in managing difficult situations and people through personality development, interpersonal relations and leadership qualities. 3. To understand how stress works and to develop acceptable behavior in professional life	CO1: Student will be able to analyze and compare different models used to explain individual behavior related to personality and authority. CO2: Student will be able to identify the various leadership styles and the role of leaders in a decision making process. CO3: Student will be able to integrate interpersonal with relation and coordination. CO4: Student will be able to exhibit stress management techniques in social and professional behavior. CO5: Student will be able to identify the processes used in developing teams and resolving conflicts

Unit-I: Personality and Authority : [CO1]

Personality, Concept: Determinants, types, Recognizing the social Value of Personality, Personality verses Character, Personality verses Individuality, Definition of Authority, Component of Authority, Rational authority, Traditional Authority, Charismatic Authority, Delegation authority – Centralized and Decentralized, Limits of authority. **[7Hrs]**

Unit II: Leadership and Counseling : [CO2]

Introduction to leadership, Leadership Vs Manager, Leadership Theories , Leadership Power, Counseling Meaning, Types of Counselling, Techniques and Problems. **[7Hrs]**

Unit-III: Relations and Co-ordination: [CO3]

Interpersonal Relations, Introduction to Interpersonal Relations, Analysis Relations of different ego states, Analysis of Transactions, Need for co-ordination, Type of interdependence: Pooled, Sequential, reciprocal, Approaches to achieving effective co-ordination, problem of co-ordination. **[6 Hrs]**

Unit IV: Stress and Conflict Management: [CO4]

Stress, Introduction to Stress, Causes of Stress, Impact Management for Stress, Managing stress, Causes of stress, Stress reduction strategies, Conflict, Introduction to Conflict, Causes of Conflict, and Managing Conflict. **[6Hrs]**

Unit-V: Group Dynamics :[CO5]

Defining and Classifying Groups, Work group Behavior, Techniques for Group Decision making-Importance Groups in organizations, Advantage and Disadvantages of group decision making, Factors that influence group effectiveness Team interactions in Group, Group Building Decision Taking, Team Building, Interaction with the team. **[7Hrs]**

Subject Code CA261223	Behavioral perspectives in Management	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Management	Stephen P. Robbins	10th	Pearson Publication
2)	Management Theory and Practices	P. Subba Rao		Himalaya Publishing House

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Organization and management	R.D Agarwal		Tata McGraw Hill publishing
2)	Principles and Practice of Management	L.M Prasad	7th	Sultan Chand & Sons publication
3)	Principles of Management: Concepts and Cases	Dr. Rajesh Viswanathan		Himalaya Publishing House

Subject Code CA261224	Enterprise Resource Planning	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. To provide student knowledge about BPR and role of IT in BPR and how to improve Business Process. 2. Describe the evolution of ERP Systems, provide an overview of how ERP systems help address issues caused by all functional systems. 3. Provide an overview of Typical business process like HR , Finance, Sales order processing, marketing etc and problem in traditional view. 4. Review issues associated with implementing ERP systems and to discuss pros and cons of implementing ERP. 5. To gain an understanding of the theories and concepts underlying e-commerce.	**CO1:-** Student will acquire an understanding of business process, organizational functional areas, need of reengineering, business process efficiency. **CO2** Student will be aware of advantages of an enterprise, how technology acts as business process enabler. **CO3** Student will be able to select best ERP vendor, Contracts with vendors, consultants and employees. **CO4.** Student will have an understanding of ERP modules. ERP project management and monitoring, Pitfalls of ERP packages, ERP implementation lifecycle, Implementation methodology, organizing the implementation **CO5** Students are expected to realize the problems involved in designing and building ecommerce systems.

Unit-I: Conceptual foundation of Business Process Reengineering: [CO1]

Role of information Technology and. BPR; Process improvement and Process redesign, Process identification and mapping; Role/Activity diagrams, Process Visioning, and benchmarking. [**7Hrs]**

Unit II: Enterprise Resource Planning : [CO2]

Evolution of ERP, structure of ERP- two tier architecture, three tier architecture, Electronic data processing, management information system, Executive information system, overview of supporting technologies, ERP as an integrator of information needs at various Levels. **[7Hrs]**

Unit-III: Typical Business Processes: [CO3]

Core processes, Product control, Sales order processing, Purchase, Materials management, Human resource, Finance processes, Marketing, Strategic planning, Research and development, Problems in traditional view**. [6Hrs]**

Unit IV: ERP implementation : [CO4]

Reasons for growth of ERP market, Process of ERP, ERP implementation: process, implementation strategies, problems, people involved, cost of implementation, critical success factors for ERP implementations, ERP selection, identifying ERP benefits, Risks involved, team formation, Consultant intervention, Role of users and vendors. Case studies: SAP, ORACLE, SARA. **[6 Hrs]**

Unit-V: Introduction to E-Commerce:[CO5]

E-Commerce Framework, E-Commerce and Media Convergence, Anatomy of E-Commerce Applications, E-Commerce Consumer Applications, e-Commerce Organization Applications. Components of I-way, Network Access Equipment, National-Independent ISPs, Regional- level ISPs, Local -level ISPs. , Types of E-Payment Systems, Smart Cards, Credit Card -Based e-payment Systems. **[7Hrs]**

		October 2020	1.00	Applicable for
Chairman (AC)	Chairman (BoS)	Date of Release	Version	AY 2020-21 Onwards

Subject Code CA261224	Enterprise Resource Planning	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	ERP, Concepts and Practices	V.K. Garg & N .K. Venkatkrishnan	Second Edition	PHI
2)	Enterprise wide Resource Planning-theory and practice,	Rahul V Rahul V. Altekar	Fifth	PHI
3)	Frontiers of Electronic Commerce	Frontiers of Electronic Commerc	Third Edition	Pearson Education

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Enterprise Resource Planning	Alexis Leon	Second Edition	TMH
2)	Concepts in ERP	Monk & Brady	Fourth Edition	Thomson learning
3)	Electronic Commerce	David Kosiur	Second Edition	Microsoft Press

Subject Code CA261225	Digital Marketing	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Course Objectives	Course Outcomes
1. The purpose of this syllabus is to make students aware about the basics of marketing. 2. The course discusses about the important role of search engine optimization. 3. To make student aware about Email marketing. 4. To make student aware about Social Media Marketing. 5. To make student aware about Mobile Marketing.	**CO1:** Students will be able to understand basics of marketing and able to understand how segmentation and targeting can be done. **CO2:** Students will be able to understand concepts of Search Engine Optimization (SEO). **CO3:** Students will be able to Understand the Role of Email marketing. **CO4:** The student will be able to Understand about the basics and importance of web marketing and Social Media marketing channels such as: facebook,Twitter,Instagram,youtube etc. **CO5:** Students will be able to understand about the role of mobile marketing.

Unit-I: Introduction to Marketing:: [CO1]

Importance and Scope of Marketing, Elements of Marketing - Needs, Wants, Demands, Consumer, Markets and Marketers; Marketing Vs Sales. Introduction to Digital Marketing, Benefits & Opportunity of Digital Marketing, Inbound and Outbound Marketing, Content Marketing, Understanding Traffic, Understanding Leads, Digital Marketing use in 'Business to Business' (B2B), 'Business to Consumer' (B2C) and 'Not-for-Profit' marketing.[**7Hrs]**

Unit II: Search Marketing (SEO): [CO2]

Introduction to Search Engine , Search Engine Optimization (SEO), importance of SEO for business websites, Search Results & Positioning, Benefits of Search Positioning, Role of Keywords in SEO, Meta Tags and Meta Description, On-page & Off-page optimization, Back Link, Internal & External Links, Ranking, SEO Site Map, Steps for B2B SEO and B2C SEO, Advantages & Disadvantages of SEO .**[7Hrs]**

Unit-III: Email Marketing: [CO3]

Introduction to Email Marketing, Elements of Email, Email List Generation, Email Structure, Email Delivery, Online Data Capture, Off Line data Capture, Creating an Email campaign, Campaign Measurement, Concept of A/B testing & it's use in email marketing. Digital Display Advertising: Concepts, Benefits, Challenges, Ad Formats, Ad Features, Ad Display Frequency. Overview of Google AdWords. [**6Hrs]**

Unit IV: Social Media Marketing: [CO4]

Key Concepts, Different Social Media Channels – Facebook,YouTube,Twitter,Instagram, Business Page-Setup and Profile, Social Media Content, Impact of Social Media on SEO, Basic concepts – CPC, PPC, CPM, CTR, CR. Case Study of Facebook(Facebook Account Setup, Facebook Marketing Strategy, Competition Analysis, Increase the Likes to Pages, Audience Targeting, Creating a post strategy). Importance of Landing Page. How to create & test landing Pages. User Generated Content (Wikipedia etc.),Multi-media - Video (Video Streaming, YouTube etc), Multi-media - Audio & Podcasting (iTunes etc),Multi- media - Photos/Images (Flickr etc) .[**7 Hrs]**

Unit-V: Introduction to Mobile Marketing:[CO5]

Overview of the B2B and B2C Mobile Marketing, Use of Mobile Sites, Apps (Applications) and Widgets, Overview of Blogging Web Analytics: Introduction to Web Analytics, Web Analytics – Types & Levels, Introduction of Analytics Tools and it's use case (Google Analytics and others), Analytics Reporting, Traffic and Behaviour Report, Evaluate Conversions . **[6 Hrs]**

Subject Code CA261225	Digital Marketing	L = 2	T = 1	P = 0	Credits = 3
Evaluation Scheme	ESE	CT	TA	Total	ESE Duration
	100	20	20	140	3 Hours

Text Books:

S. No.	Title	Authors	Edition	Publisher
1)	Fundamentals of Marketing	Stanton William J.	10th	McGraw Hill, N. Delhi
2)	Principles of Marketing	Kotler Philip & Armstrong Graw	6th	Pearson Education, New Delhi
3)	Digital Marketing	Vandana Ahuja		Oxford Higher Education

Reference Books:

S. No.	Title	Authors	Edition	Publisher
1)	Digital Marketing	. Seema Gupta		McGrawHill
2)	Indian Cases in Marketing	Neelamegham S		Vikas Publication, New Delhi