यशवंतराव चव्हाण शिक्षण प्रसारक मंडळाचे

दादासाहेब दिगंबर शंकर पाटील

कला, वाणिज्य व विज्ञान महाविद्यालय, एंडोल, जि. जळगाव

YASHWANTRAO CHAVAN SHIKSHAN PRASARAK MANDAL'S

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DEPARTMENT OF COMPUTER SCIENCE

Bachelor of Vocation in Software Development (COURSE OUTCOMES)

CLASS	COURSE	OUTCOMES (Students will be able to)
F. Y. B. Voc. Sem - I[st]	**1. GCPCS111 Professional Communication Skills Mode: Theory**	• To enable students to have firm grounding in English to be able to use it effectively in professional as well as social contexts. • To work towards strengthening the learning process of English language so that our graduates can find their feet in the fiercely competitive job market. • Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, small group, organizational, media etc. from multiple perspectives. • Students will be able to find, use, and evaluate primary academic writing associated with the communication discipline. • Students will be able to communicate effectively orally and in writing.
	2. GCPCS112 Personality Development & Behavioural Science Mode: Theory	• It generally implies to student what is unique about an individual, the characteristics that make one stand out in a crowd. • This course makes the students groom their personality and prove themselves as good Samaritans of the Society. • This course consists of individual or in-group class presentations pertaining to the applications of concepts, Theories or issues in human development. • Self Awareness knows your motivations; preferences, personality and understanding how these factors influence your • judgment, decisions and interactions with other people. • Behaviour is the way in which we conduct ourselves-the way in which we act. Student learn self motivation , modes of thinking , modes of acting , modes of interacting.
	3. GCPCS113: Essentials of Computer Mode: Theory	• Students will be able to understand what is Computer and Basic concepts of computer. • Student will aware about various types of Computers, types of input and output devices.

		• Student will be able to preparation of Algorithm and Flowchart of Program. • Student will learn computer networks, its types and basics of Internet and describe ways • computer networks are used to communicate and share resources. • Student will understand computer viruses and its types.
	4. GCPCS114: Practical based on Essentials of Computer Mode: Practical	• Student will acquire knowledge about different types of computer hardware, software and browsers. • Student will be able to create e-mail account and sending e-mails with attachment. • Student will be able to install various devices as well as operating system in the computer. • Describe various types of networks network standards and communication software.
	5. SCSD111: Programming Concept -I Mode: Theory	• To make the student learn a programming language. • To learn problem solving techniques. • To teach the student to write programs in C and to solve the problems.
	6. SCSD112: Basics of Software Engineering Mode: Theory	• Student will able to define various software application domains and remember different process model used in software development. • Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques. • Convert the requirements model into the design model and demonstrate use of software and user- interface design principles. • Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them. • Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC. • Generate project schedule and can construct, design and develop network diagram for different type of Projects. They can also organize different activities of project as per Risk impact factor.
	7. SCSD113: Basics of HTML and PHP Mode: Theory	• Describe the function of Hypertext Mark up Language (HTML) in Web communications. • Identify a Universal Resource Locator (URL) in a segment of HTML code. • Describe the basics of the Domain Name System (DNS) used on the Internet and private networks. • Understand how server-side programming works on the web. • PHP Basic syntax for variable types and calculations. • Creating conditional structures.

	8. SCSD114: Practical based on Programming Concept -I Mode: Practical	• Read, understand and trace the execution of programs written in C language. • Write the C code for a given algorithm. • Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor. • Write programs that perform operations using derived data types.
	9. SCSD115: Practical Based on Basic of HTML and PHP Mode: Practical	• Describe the function of Cascading Style Sheets (CSS) in Web communications and describe the relationship between • CSS and HTML. • Define the terms "presentational" and "semantic" mean in the context of HTML/CSS coding. • Storing data in arrays • Using PHP built-in functions and creating custom functions • Understanding POST and GET in form submission. • How to receive and process form submission data.
	10. SCSD116 Computer Configuration and Maintenance Mode: Practical	• This course helps student step by step through the typical hardware and operating system problems encountered by technicians, teaching troubleshooting techniques to decipher any problem, and giving you the skills you need to solve them. • Students will understand basic concept, structure of computer hardware networking and apply their knowledge about computer peripherals to identify / rectify problems onboard. • Communicate effectively and present technical information in oral and written reports. • Students will be able to , identify the properties , analyze the system capability ,analyze hardware requirements , analyze • How to do implementation , troubleshoot the device , think critically about the maintenance , which is very important.
F. Y. B. Voc. Sem IInd	**1 GCPCS121 Aptitude & Logical Reasoning Mode: Theory**	• Quantitative Reasoning is designed for students who have completed Foundations of Mathematical Reasoning and the co---requisite Frameworks for Mathematics and Collegiate Learning. • Student should be able to demonstrate procedural fluency with real number arithmetic operations and use those operations to represent real---world scenarios and to solve stated problems. • Student should be able to demonstrate number sense, including dimensional analysis and conversions between fractions, decimals, and percentages. Determine when approximations are appropriate and when exact • calculations are necessary. • Use appropriate mathematical and statistical language in oral, written, and graphical forms. • Student get confidence about competitive exam.

	2 GCPCS122 Environmental Ecology Mode: Theory	• The Environmental Studies major prepares students for careers as leaders in understanding and addressing complex environmental issues from a problem-oriented, interdisciplinary perspective. • Understand key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions. • Student can able to demonstrate critical thinking skills in relation to environmental affairs • Student can able to demonstrate an awareness, knowledge, and appreciation of the intrinsic values of ecological processes and communities. • Ecosystems are created by the interrelationships between living organisms and the physical environments they inhabit (land, water, air).
	3. GCPCS123: Information Processing Skills Mode : Theory	• Students can be asked to work on a computer and find out the steps of problem solving it follows. • Process skills in science, list the important skills in Mathematics, Languages or Social Sciences. • Microsoft Office is the most widely used tool for sharing/presenting professional information by a considerable number of companies in the world. All computer-based professionals today are very familiar with Office. • Microsoft Office is well known for its clean and straightforward user interface, which is easy to use and understand. • The pages are extremely user friendly, and you can easily navigate through them. The menu items explain and guide you clearly to execute your tasks effectively and effortlessly.
	4. GCPCS124: Practical based on Information Processing Skills Mode: Practical	• In MS Word are pre-defined professional designs for users. In which all the page layout, fonts, colors, graphics, outline, text boxes, etc. word processor user get by default. • In the current job market, knowledge of Microsoft Office tools is essential as it helps to make your mark. • Presentations, word files, excel sheets, working with databases – are all a part of daily tasks for most of us. • Easy access to your company's data will save money and time once you're on the cloud. • Mobile access to corporate data via smart phones and devices is possible with cloud computing, which is a great way to make sure your employees are never left out of the loop. • Quick data recovery for all kinds of emergency scenarios, from natural disasters to power outages is provided for by cloud-based services.
	5 SCSD121: Internet	• Students will be able to give a coherent account of the basic technology, organization and architecture of the Internet and the World Wide Web.

	Computing Mode: Theory	• Student will be able to create and write static web pages using appropriate layout and graphics etc. Students will be able to organise and maintain a web site of moderate size. • Analyze given assignment to select sustainable web development and design methodology • They can develop web based application using suitable client side and server side web technology • They can develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management
	6. SCSD 122: Programming Concept -II Mode: Theory	• Create algorithms to solve simple programming problems. • Describe and employ strategies that are useful in debugging. • Design, implement, test and debug programs that use calculations and selections. • Design, implement, test and debug programs that use loops and arrays. • Design, implement, test and debug programs that use functions. • Design, implement, test and debug programs that use arrays for character strings and that use pointers for character strings.
	7. SCSD123: PHP with MySQL Mode: Theory	• For developing any dynamic website, or any web application the most preferred tool is PHP MYSQL. Both PHP and MySQL are open source projects. • In any open source technology and projects, programmer have complete access to the source code • MYSQL an open source relational database management system and PHP being the server side programming language. • When both are combined it is capable of delivering highly exclusive solutions.
	8. SCCS124: Practical based on Programming Concept -II Mode : Practical	• Design, implement, test and debug programs that use loops and arrays. • Design, implement, test and debug programs that use functions. • Design, implement, test and debug programs that use arrays for character strings and that use pointers for character strings.
	9 SCCS125: Practical based on Internet Computing and Web Designing Mode: Practical	• Students will be able to Design a basic web site using HTML5 and CSS3 to demonstrate responsive web design. • Know the different page types on websites and it's navigations. • Student will be able to create web pages using different text styles. • Student will be able to design website using HTML language.
	10. SCCS126: Practical based on PHP with MySQL Mode: Practical	• Open Source, Easy and fast maintenance. • Superior performance, greater scalability, reliability. • Compatible with operating system like IIS, Apache etc. • Platforms independent and runs on Linux, Windows, or Unix. • User-Friendly and programming offers multilingual support.

		• Wider support for other popular databases like Informix, Oracle, Sybase, etc.
S. Y. B. Voc. Sem – IIIrd	भाषिक कौशल्याचा अभ्यास 1. SD-231: Communication Skill Mode: Theory	• Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc. from multiple perspectives. • Students will be able to understand and evaluate key theoretical approaches used in the interdisciplinary field of communication. I.e., students will be able to explain major theoretical frameworks, constructs, and concepts for the study of communication and language, summarize the work of central thinkers associated with particular approaches, and begin to evaluate the strengths and weaknesses of their approaches. • Students will be able to understand the research methods associated with the study of human communication, and apply at least one of those approaches to the analysis and evaluation of human communication.
	2. SD-232: Modern office Management Mode : Theory	• To understand the concept of office management. • To acquire operational skills of office management. • To develop the interest in methods and procedures of office management. • To know the secretarial procedure. • To understand office layout and environment in modern context. • To acquire the basic knowledge of office appliances and machines. • To understand office system. • To acquire knowledge of office meetings and proceedings
	3. SD-233: Practical Based on Tally ERP Mode: Practical	• To gain a broad understanding on the internal & external factors which have an impact in the business environment • To develop computer skills of recording financial transactions, preparation of annual accounts and reports using Tally • To apply the knowledge of quantitative tools & techniques in the interpretation of data for managerial decision making • To provide an in-depth knowledge on the concepts and practice of managements accounting and generate required reports for managerial decision making
	4. SD-234: Data Structure-I Mode : Theory	• Students will try to learn and remember algorithms and its analysis procedure & concept of data structures through ADT including List, Stack, Queues. • Student will able to develop application using data structure algorithms. • Student will able compute the complexity of various algorithms.

		• To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures. • Ability to have knowledge of tree and graphs concepts.
	5. SD-235 Programming in C++ - I Mode: Theory	• To understand how C++ improves C with object-oriented features. • To learn how to write inline functions for efficiency and performance. • To learn the syntax and semantics of the C++ programming language. • To learn how to design C++ classes for code reuse. • To learn how to implement copy constructors and class member functions.
	6. SD-236: Introduction to DBMS Mode: Theory	• Give an introduction about DBMS, data models, a schema, E-R diagram, relational database and benefits of database and explain transaction management in relational database system. • Student will be able to design ER model for given requirements and convert the same into database tables. • Learn about indexes, sequences, data integrity, creating and maintaining tables and user privileges. • Student will be able to study the physical and logical database designs, database modeling, and relational models. Know about functional dependency and Data • Normalization and Understand Database Implementations. • Student will be able to create and manipulate databases for various applications. • Explain transaction management in relational database system.
	7. SD-237: Practical Based on Data Structure : I And Programming In C++ - I Mode: Practical	• For a given Search problem (Linear Search and Binary Search) student will able to implement it. • For a given problem of Stacks, Queues and linked list student will able to implement it and analyze the same to determine the time and computation complexity. • Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects. • Understand dynamic memory management techniques using pointers, constructors, destructors, etc • Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. • Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming. • Demonstrate the use of various OOPs concepts with the help of programs
	8. SD-238: Practical Based on Introduction	• Student will be able to design appropriate queries to create and use the databases. • Student will be able to analyze and apply different database techniques to solve real world problems.

	to DBMS Mode : Practical	• Student will be able to retrieve any type of information from a data base by formulating complex queries in SQL. • Student will be able to create tables in database using different commands of SQL languages. • On completion of the course, students are able to develop database management system using features and services provided by MS SQL Server.
	9. SD-239: Software & Hardware Installation Skills Mode: Practical	• This course helps student step by step through the typical hardware and operating system problems encountered by technicians, teaching troubleshooting techniques to decipher any problem, and giving you the skills you need to solve them. • Students will understand basic concept t& amp; structure of computer hardware & networking and apply their knowledge about computer peripherals to identify / rectify problems onboard. • Able to identify the reasons which require a hardware/software installation/upgrade/replacement • Able to identify the risks involved when performing an installation/upgrade/replacement and take the necessary precautions to avoid such risks on both human and electronic component terms. • Discuss precautions which must be taken to avoid risks when replacing/installing/upgrading hardware components. • Able to install/upgrade/replace internal hardware components and configure the necessary software.
S. Y. B.Voc. Sem :IVth	**1. SD-241: Remote Sensing, GIS & GPS Mode : Theory**	• Apply principles of Remote Sensing in technology • Demonstrate applications of Geographical information system (GIS) • Appraise the need of geodesy and projection system in map making • Illustrate application of Global Positioning System(GPS)
	2. SD-242: Modern office Management-II Mode : Theory	• To understand the concept of office management. • To acquire operational skills of office management. • To develop the interest in methods and procedures of office management. • To know the secretarial procedure. • To understand office layout and environment in modern context. • To acquire the basic knowledge of office appliances and machines. • To understand office system. • To acquire knowledge of office meetings and proceedings
	3. SD -243: Practical Based on Cyber Crime and Network Security Mode : Practical	• Communicate to effectively both orally and in writing in a variety of audiences. • Demonstrate critical thinking by analyzing situations and by constructing and selecting solutions to problems. • Understand and appreciate the legal and ethical environment impacting individuals as well as business organizations

		• Understanding of the ethical implications of IT legal decisions. • Understand fundamentals and advanced issues of various threats faced by today's cyber infrastructure
	4. SD -244: **Data Structure –** **II Mode :** **Theory**	• Students will try to learn and remember algorithms and its analysis procedure& concept of data structures through ADT including List, Stack, Queues. • Student will able to develop application using data structure algorithms. • Student will able compute the complexity of various algorithms. • To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures. • Ability to have knowledge of tree and graphs concepts.
	5. SD -245 : **Programming in** **C++-II Mode :** **Theory**	• Gain a foundation for writing efficient, safe C++ code. • Learn how to use STL libraries. • Understand memory pitfalls in C++ • Know how to expand the C++ memory model. • Utilize object-oriented for analysis and design. • Apply multiple inheritance to an application. • Understand how streams work. • See how to persist objects via streams. • Gain experience following C++ guidelines. • Identify potential bugs in code before they occur.
	6. SD -246: **Introduction to** **Operating** **System Mode :** **Theory**	• Students should familiar with Operating System Services. Explain the history and origins of the Linux operating system Understand the theory of Linux design and operation. • Students will able to Describe the important computer system resources and the role of operating system in their management policies and algorithms. • Understand CPU scheduling algorithms, memory Management Techniques, Disk Drum Scheduling algorithms, Deadlock preventions and avoidance. • Introduction to android operating systems – its architecture, applications and uses. • Students will able to Describe and analyze the memory management and its allocation policies.
	7. SD -247: **Practical Based** **on Data** **Structure : II** **And** **Programming In** **C++ - II Mode** **: Practical**	• Analyse the efficiency of the designed algorithms. • Implement the main data structures: Lists, stacks, queues, trees, graphs and hash tables; and use them to solve computational problems. • Use recursive design. • Analyse and use the main search, sorting and traversal algorithms in data structures. • Design and implement data structures to efficiently solve problems.

		• Remember the characteristics of Procedure and Object Oriented Programming Languages • Understand the fundamentals of C++ programming structure, function overloading and constructors. • To be able to program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc. • Apply the concepts in object oriented programming in terms of software reuse and managing complexity to solve real-world problems.
	8 SD -248: **Practical Based** **on Introduction** **to Operating** **System (Linux)** **Mode : Practical**	• Student will be able to understand the high-level structure of the Linux kernel both in concept and source code I acquire a detailed understanding of one aspect (the scheduler) of the Linux kernel. • Student will be able to create Shell Scripts in linux operating system. • Student should familiar with the basic set of commands and editors in Linux operating system. • Upon completion of this course ,the student will be able to demonstrate the role and responsibilities of a Linux system administrator. • On completion of this course , student will be able to Implement basic Linux tools ,Configure the Linux environment and Text editing in the Linux environment.
	9. SD -249: **Practical Based** **on C#.NET** **Mode : Practical**	• Gain a thorough understanding of the philosophy and architecture of .NET • Acquire a working knowledge of the .NET programming model and .NET Security • Learn how to implement database applications using .NET • Learn how to debug .NET applications using .NET diagnostic classes and tools
T.Y.BVoc. **Sem-Vth**	**SD-351:** **Introduction to** **Information** **SecurityMode :** **Theory**	Appreciate the value of information to the modern organisation understand the CIA triad of Confidentiality, Integrity and Availability • Appreciate the difficulties that arise when valuable information needs to be shared • Identify the five leading-edge resources that have up-to-date information on information security. identify some of the factors driving the need for network security • Identify and classify particular examples of attacks define the terms vulnerability, threat and attack • Identify physical points of vulnerability in simple networks
	SD-352 **Principles of** **Management** **Mode : Theory**	To enable the students to study the evolution of Management, To study the functions and principles of management. • To learn the application of the principles in an organization. • To enable the effective and barriers communication in the organization.

		- To study the system and process of effective controlling in the organization. - Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, and have same basic knowledge on international aspect of management - To understand the planning process in the organization To understand the concept of organization - Demonstrate the ability to directing ,leadership and communicate effectively To analysis isolate issues and formulate best control methods
	SD-353: Entrepreneurship Development Mode : Theory	- Develop idea generation, creative and innovative skills - Aware of different opportunities and successful growth stories - Learn how to start an enterprise and design business plans those are suitable for funding by considering all dimensions of business. - Run a small enterprise with small capital for a short period and experience the science and art of doing business. - Understand the nature of entrepreneurship. - Understand the function of the entrepreneur in the successful, commercial application of innovations confirm an entrepreneurial business idea - Identify personal attributes that enable best use of entrepreneurial opportunities explore entrepreneurial leadership and management style.
	SD-354: System Analysis and Design-I Mode : Theory	- Understand both the nature of 'information systems analysis and design' and its various components. Demonstrate knowledge on the different phases of Systems Development Life Cycle (SDLC). - Appreciate the use of systems design techniques, methodologies, and tools. gather data to analyze and specify the requirements of a system. - Design system components and environments. - Build general and detailed models that assist programmers in implementing a system. - Design a database for storing data, a user interface for data input and output, and controls to protect the system and its data.
	SD-355: Java Programming I Mode : Theory	- Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc. - Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc. - Be aware of the important topics and principles of software development. Have the ability to write a computer program to solve specified problems. - Be able to use the Java SDK environment to create, debug and run simple Java programs.

	SD-356: Python Mode : Theory	- To understand why Python is a useful scripting language for developers. To learn how to design and program Python applications. - To learn how to use lists, tuples, and dictionaries in Python programs. To learn how to identify Python object types. - To learn how to use indexing and slicing to access data in Python programs. To define the structure and components of a Python program. - To learn how to write loops and decision statements in Python. To learn how to write functions and pass arguments in Python. - To learn how to build and package Python modules for reusability. - To learn how to read and write files in Python. - To learn how to design object-oriented programs with Python classes.
	SD- 357: Lab on Java Programming I Mode : Practical	- To teach fundamentals of object oriented programming in Java. Understand various concepts of JAVA. - To familiarize Java environment to create, debug and run simple Java programs. - To demonstrate java compiler and eclipse platform and learn how to use Net Beans IDE to create Java Application. - Implement Object oriented features using Java Apply the concept of polymorphism and inheritance. Implement exception handling. - Develop network and window application using awt and swings. - Knowledge of the structure and model of the Java programming language, (knowledge) - Use the Java programming language for various programming technologies (understanding) Develop software in the Java programming language,(application)
	SD-358: Lab on Python Mode : Practical	- Develop algorithmic solutions to simple computational problems. Demonstrate programs using simple Python statements and expressions. Explain control flow and functions concept in Python for solving problems. - Use Python data structures – lists, tuples & dictionaries for representing compound data. Explain files, exception, modules and packages in Python for solving problems. - Interpret the use of procedural statements like assignments, conditional statements, loops and function calls. - Infer the supported data structures like lists, dictionaries and tuples in Python. - Illustrate the application of matrices and regular expressions in building the Python programs. Discover the use of external modules in creating excel files and navigating the file systems. - Describe the need for Object-oriented programming concepts in Python.

	SD-359: Lab on Angular JS Mode : Practical	• Create single page web applications using the MVC pattern of Angular JS Understand the programming model provided by the Angular JS framework • Define Angular controllers and directives Control Angular data bindings • Get familiar with client-side Java script frameworks and the Angular framework. Use various Angular features including directives, components, and services. • Implement a functional front-end web application using Angular. Boost your hire ability through innovative and independent learning. Get a certificate on successful completion of the course.
Sem-VI	**SD361:Human Resources Development Mode : Theory**	• To enable the students to understand the HR Management and system at various levels in general and in certain specific industries or organizations. • To help the students focus on and analyse the issues and strategies required to select and develop manpower resources • To develop relevant skills necessary for application in HR related issues • To Enable the students to integrate the understanding of various HR concepts along with the domain concept in order to take correct business decisions • Demonstrate an understanding of key terms, theories/concepts and practices within the field of HRM Demonstrate competence in development and problem-solving in the area of HR Management Provide innovative solutions to problems in the fields of HRM • Be able to identify and appreciate the significance of the ethical issues in HR
	SD-362: Psychological Behavior at Working Places Mode : Theory	• Define job performance, organizational citizenship, absenteeism, and turnover. Explain factors associated with each type of work behavior. • To bring about the through understanding of entrepreneurship and constraints for the growth of entrepreneurial culture. • To demonstrate knowledge in entrepreneurship development. • To understand the concept of entrepreneurship training and various entrepreneurship training institutes in India. • To be able to demonstrate progressive learning in the project report and ownership structures. To bring about the thorough understanding of source of finance to entrepreneurs.
	SD-363:IT &Society Mode : Theory	• Collaborate in a large project with an external client, and present a professional solution, both orally and in written form to the client. • Handle, validate and analyse a very complex and multi-facetted problem in a constructive manner in a project group. • Evaluate, criticize and validate solutions to IT-related problems from perspectives such as ethics, sustainable development, work environment, economy and usefulness.

		• Illustrate, show and describe experiences from working in a multi-cultural distributed project. • Evaluate and analyse one's abilities and competencies regarding working in a multi-cultural and distributed project, as well as develop strategies that lead to lifelong learning.
	SD-364 : System Analysis and Design-II **Mode : Theory**	• A firm basis for understanding the life cycle of a systems development project; • An understanding of the analysis and development techniques required as a team member of a medium- scale information systems development project; • An understanding of the ways in which an analyst's interaction with system sponsors and users play a part in information systems development; • Experience in developing information systems models; Experience in developing systems project documentation; • An understanding of the object-oriented methods models as covered by the Unified Modelling Language.
	SD-365: Java Programming-II **Mode : Theory**	• Gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc. • Understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and exception handling mechanisms. • Understand the principles of inheritance, packages and interfaces • Summarize the strengths and weaknesses of Java programming and the basic concepts of object-oriented programming. • Identify Java code utilities in applets, Java packages, and classes.
	SD-366 : ASP.NET using C#.NET **Mode : Theory**	• Set up a programming environment for ASP.net programs. Configure an asp.net application. • Understand the Microsoft .NET Framework and ASP.NET page structure Design web application with variety of controls • Configure and deploy Web Application • Creating ASP.Net applications using standard .net controls. Develop a data driven web application. • Connecting to data sources and managing them. • Maintain session and controls related information for user used in multiuser web applications.
	SD-367: Lab on Java Programming II **Mode: Practical**	Learn the Internet Programming, using Java Applets • Create a full set of UI widgets and other components, including windows, menus, buttons, • checkboxes, text fields, scrollbars and scrolling lists, using Abstract Windowing Toolkit (AWT) & Swings • Apply event handling on AWT and Swing components.

		• Learn to access database through Java programs, using Java Data Base Connectivity (JDBC) Create dynamic web pages, using Servlets and JSP. • Make a resusable software component, using Java Bean. • Invoke the remote methods in an application using Remote Method Invocation (RMI) • Understand the multi-tier architecture of web-based enterprise applications using Enterprise JavaBeans. Develop Stateful, Stateless and Entity Beans. • Use Struts frameworks, which gives the opportunity to reuse the codes for quick development. Map Java classes and object associations to relational database tables with Hibernate mapping files
	SD-368 : Lab on ASP.NET using C#.NET **Mode : Practical**	Introduce to .Net IDE Component Framework. • Programming concepts in .Net Framework. Access the data using inbuilt data access tools • Use Microsoft ADO.NET to access data in web Application • Creating website using ASP.Net Controls. • Utilize the .NET framework to build distributed enterprise applications. • Develop ASP.NET Web Services, secure web services, and .NET remoting applications. Develop web applications using a combination of client-side and server-side technologies. Understand and experiment with the deployment of enterprise applications
	SD-369 : Lab on SQL Server **Mode : Practical**	• Understand database concepts and structures and query language • To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS. • Understand Functional Dependency and Functional Decomposition. • Perform PL/SQL programming using concept of Cursor Management, Error Handling, Package and Triggers • Execute various advance SQL queries related to Transaction Processing & Locking using concept of Concurrency control. • Understand query processing and techniques involved in query optimization. Understand features and data types in SQL server. • Create and manipulate databases for various applications.