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**PARK'S COLLEGE** (AUTONOMOUS)

www.parkscollege.ac.in

# PARK'S COLLEGE (AUTONOMOUS), TIRUPUR-5

## B.Sc Computer Science

## <u>VISION</u>

❖ Attain global excellence in the field of education and training and produce professionals of world standards to face the competitive tomorrow. Accept and adhere to the latest emerging technologies without crossing the boundaries of our rich culture.

## <u>Mission</u>

❖ Create human assets with high ethics who would considerably contribute for the betterment of the nation.
❖ Provide a curriculum that better matches the requirements of the individual, industry and the society.
❖ Keep quality education affordable and reachable to all segments and sections of the society.
❖ Welcome technological developments in full swing and implement the best of them constantly.

## Programme Educational Objectives (PEO)

Under Graduate of B.Sc. (Computer Science) program will be

**PEO1:** Make use of strong technical aptitude and domain knowledge to build up smart software solutions for the development of society.

**PEO2:** Utilizing research and entrepreneurial altitude enhanced with a rich set of communication, teamwork and leadership skills to outshine in their profession.

**PEO3:** Exhibiting permanent improvement in their profession through continuous learning, oblige human values and ethics.

# PROGRAMME OUTCOMES (PO) FOR B.Sc. (COMPUTER SCIENCE)

On completion of B.Sc.(Computer science) programme, the students are expected to

**PO1:** Apply the knowledge of mathematics, science, and computing to the solution of complex scientific problems.

**PO2:** Identify, formulate, research literature, and analyze complex scientific problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and applied sciences.

**PO3:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**PO5:** Create, select, and apply appropriate techniques, resources, and modern computing and IT tools including prediction and modeling to complex scientific activities with an understanding of the limitations.

**PO6:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

**PO7:** Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the scientific practice.

**PO9:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10:** Communicate effectively on complex activities with the scientific community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO11:** Demonstrate knowledge understanding of the scientific and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**PO12:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

# Course Outcomes

| Course Code and Course Name | Course Outcomes |
|---|---|
| LANGUAGE-I(T01) | **CO1:** புதுக்கவிதை, மரபுக்கவிதை வாயிலாக இலக்கிய, வாழ்வியல் அறநெறிகளை உரைத்தல்.<br>**CO2:** சிறுகதை வழி வெளிப்படும் சமுதாயச் சிந்தனைகளை அறிந்து விழிப்புணர்வைப் பெறுதல்.<br>**CO3:** தன்னம்பிக்கையை ஏற்படுத்தல்.<br>**CO4:** மாணவர்களுக்கு மொழி அறிவை வளர்த்தல்.<br>**CO5:** இலக்கியங்கள் தோன்றி வளர்ந்த பின்புலத்தையறிதல். |
| ENGLISH-I(E01) | **CO1:** To identify English as an easy language for the purpose of learning<br>**CO2:** To acquire language skills with literary appreciation and critical thinking<br>**CO3:** To construct a sentence competitively in the spoken and written communication<br>**CO4:** To develop a passion for Literature and language<br>**CO5:** To develop the different usage of sentences and modes . of letter writing |
| 25AGC1 PROGRAMMING IN C | **CO1:** Understand the basic terminology used in C programming.<br>**CO2:** Write, compile and debug programs in C language.<br>**CO3:** Design programs involving decision structures, loops and functions.<br>**CO4:** Understand the dynamics of memory by the use of pointers.<br>**CO5:** Understand the concept of files in C language |
| 25AGC2 DIGITAL FUNDAMENTALS AND COMPUTER ORGANIZATION | **CO1:** Acquire knowledge about Number System and Binary Codes, Complements, BCD, Excess3, Gray Code<br>**CO2:** Knowledge on Logic Circuits, Half adder, Full adder<br>**CO3:** Acquire knowledge about Register and Counter<br>**CO4:** Knowledge on Priority Interrupt Asynchronous data transfer.<br>**CO5:** Acquire knowledge Memory Organization. |
| 25AAL1 MATHEMATICAL STRUCTURE FOR COMPUTER SCIENCE | **CO1:** Understand the basic concept Matrix.<br>**CO2:** Know the concept of Numerical Algebra<br>**CO3:** Know about Simultaneous Linear Algebraic Equations<br>**CO4:** Know about Interpolation and Newton's forward and Backward for equal intervals<br>**CO5:** Understand the Numerical Differentiation |

| Course Code and Course Name | Course Outcomes |
|---|---|
| **25ACL1** **CORE LABORATORY 1: PROGRAMMING IN C** | **CO1:** Understand the basic concept of C Programming. <br> **CO2:** Acquire the knowledge about Operators, Control Statements & Looping. <br> **CO3:** Understand the role of functions and files involving the idea of modularity. <br> **CO4:** Understand the string operations in detail. <br> **CO5:** Acquire the knowledge about the pointer concept. |
| **ENVIRONMENTAL STUDIES** | **CO1:** Understand and gain a rigorous foundation in various scientific disciplines as they apply to environmental science, such as ecology, evolutionary biology, hydrology, and human behavior. <br> **CO2:** Understand the primary environmental problems and the science behind those problems and potential solutions. <br> **CO3:** Acquire the knowledge about the social issues. <br> **CO4:** Learn about the field work of the environmental issues. <br> **CO5:** Acquire the knowledge about the pollution and its effects. |
| **COMMUNICATIVE ENGLISH** | **CO1:** Develop and effectively communicate through verbal/oral communication and improve the listening skills. <br> **CO2:** Develop and actively participate in group discussion / meetings / interviews and prepare & deliver presentations. <br> **CO3:** Understand and develop effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, inter-personal relationships, conflict management and leadership quality. <br> **CO4:** Understand the individual through goal/target setting, self motivation and practicing creative thinking. <br> **CO5:** Enrich the personality. |
| **LANGUAGE-II** | **CO1:** சிற்றிலக்கியம், காப்பியம் வாயிலாக இலக்கிய, வாழ்வியல் அறநெறிகளை உரைத்தல். <br> **CO2:** கட்டுரை வழி வெளிப்படும் சமுதாயச் சிந்தனைகளை அறிந்து விழிப்புணர்வைப் பெறுதல். <br> **CO3:** தன்னம்பிக்கையை வளர்த்தல். <br> **CO4:** இலக்கணங்களைக் கற்று தருதல், படைப்புத் திறனை உக்குவித்தல். <br> **CO5:** மாணவர்களை வேலை வாய்ப்புடன் கூடிய போட்டித் தேர்வுகளுக்குத் தயார்ப்படுத்துதல். |

| Course Code and Course Name | Course Outcomes |
|---|---|
| **ENGLISH-II** | **CO1:** To read and comprehend English in the context of acquisition of  soft (life) skill.<br>**CO2:** To acquire knowledge about three basic genres of literature namely poetry, prose and drama along with their subdivisions emergence in various ages.<br>**CO3:** To understanding of the various aspects of the Essay-its elements, kinds, structure and the nuances of language<br>**CO4:** To communicate clearly, effectively and handle their day to day affairs well with their knowledge of language skills.<br>**CO5:** To apply the basic grammatical rules learnt from the prescribed text. |
| **25AGC3**<br>**OBJECT ORIENTENTED PROGRAMMING USING JAVA** | **CO1:** To understand the principles and practice of object oriented analysis<br>**CO2:** Ability to implement basic concepts, compile, test and run Java programs comprising more than one class, to address a particular software problem<br>**CO3:** Ability to make use of members of classes found in the Java API packages and interfaces<br>**CO4:** Understand the concept of File handling in java<br>**CO5:** Demonstrate the ability to employ various types of selection constructs in a Java program. |
| **25AGC4**<br>**FUNDAMENTALS OF DATA STRUCTURES** | **CO1:** Analyze performance of algorithms and choose the appropriate data structure and algorithm design method for a specified application<br>**CO2:** Demonstrate understanding of the abstract properties of various data structures such as stacks, queues, lists, trees and graphs and Use various data structures effectively in application programs.<br>**CO3:** Understand and apply fundamental algorithmic problems including   Tree traversals, Graph traversals, and shortest paths.<br>**CO4:** Demonstrate understanding of various sorting algorithms, including  bubble sort, insertion sort, selection sort, heap sort and quick sort.<br>**CO5:** Gain knowledge about Hashing and Collisions and B-Trees |

| Course Code and Course Name | Course Outcomes |
|---|---|
| **25AAL2**<br>**PROBABILITY AND STATISTICS** | **CO1:**Understand the basic concept of Probability and Conditional probability.<br>**CO2:**Know the concept of random variables, expectations and moment generating functions.<br>**CO3:** Know about some standard distributions.<br>**CO4:** Know about correlation and regression.<br>**CO5:**Understand the concept of testing of hypothesis |
| **25ACL2**<br>**CORE LABORATORY 2 : OBJECT ORIENTENTED PROGRAMMING USING JAVA** | **CO1:**To understand the Principles of object oriented Programming<br>**CO2:** Ability to implement to compile, test and run Java programs.<br>**CO3:**Ability to make use of applet Programming<br>**CO4:**Understand the concept of Thread handling in java<br>**CO5:**Get Basic Knowledge on Menu creation in Applets |
| **HUMAN RIGHTS,CONSTITUTION OF INDIA AND IPR** | **CO1:**Understand and apply written and oral communication skills to business.<br>**CO2:**Understand and analyze the global legal environment.<br>**CO3:**To familiarize the complex problems, find and deploy a variety of legal authorities, and communicate effectively in a variety of settings.<br>**CO4:**Understand and Develop skills in business situations.<br>**CO5:**Acquire the knowledge about the constitution of India. |
| **COMMUNICATIVE ENGLISH** | **CO1:**Develop and effectively communicate through verbal/oral communication and improve the listeningskills.<br>**CO2:**Develop and actively participate in group discussion / meetings / interviews and prepare & deliver presentations.<br>**CO3:**Understand and develop effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter- personal relationships, conflict management and leadership quality.<br>**CO4:**Understand the individual through goal/target setting, self motivation and practicing creative thinking.<br>**CO5:**Acquire the knowledge about the correct usage and conversation practice. |
| **LANGUAGE-III** | **CO1:** பக்தி இலக்கியம் வாயிலாக இலக்கிய, வாழ்வியல் அறநெறிகளை உரைத்தல்.<br>**CO2:** நீதி இலக்கியம் வாயிலாக வாழ்வியல் அறநெறிகளை உரைத்தல்.<br>**CO3:** நவீன கருவிகளை அறியச் செய்தல்.<br>**CO4:** இலக்கணங்களைக் கற்றுத் தருதல், படைப்புத் |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | திறனை ஊக்குவித்தல். <br> **CO5:** தற்கால கவிஞர்களைப் பற்றியும், சங்க இலக்கியங்களைப் பற்றியும் அறியச் செய்தல். |
| **ENGLISH-III(E03)** | **CO1:** To identify the concepts of basic Grammar. <br> **CO2:** To understand the proficiency of the English writer's narrative <br> skill's of their experience. <br> **CO3:** To express their own notions, in prose, poetry and short story. <br> **CO4:** To develop an interest for literature and language <br> **CO5:** To distinguish the development of prose through different periods. |
| **25AGC5 RELATIONAL DATABASE MANAGEMENT SYSTEM** | **CO1:** To analyze Data Base Management System design methodology. <br> **CO2:** Acquire knowledge about data modeling using entity and relation. <br> **CO3:** Design data base and normalize data and Understand how query are <br> being processed and executed. <br> **CO4:** Draw various data models for Data Base and Write queries <br> mathematically and understanding of normalization theory and apply <br> such knowledge to the normalization of a database <br> **CO5:** Formulate, using SQL, solutions to a broad range of query and data <br> update problems. |
| **25ADSC1 HTML 5 AND CSS 3** | **CO1:** Understand the basic concepts of WEB andHTML structure <br> **CO2:** Formatting the elements in WebPages <br> **CO3:** Create Responsive grids, container with navigation <br> **CO4:** Apply style to the static web page and implementlist and links <br> **CO5:** Create Static Web page with Images and tables |
| **25AAL3 BUSINESS ACCOUNTING** | **CO1:** To understand the principles and concepts of accounting system to maintain the business transactions systematically. <br> **CO2:** Acquire the conceptual skills to prepare financial |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | statements. <br> **CO3:** Learn the various techniques and methods of depreciation followed in the business. <br> **CO4:** Understand the role of cost accounting in the complex business environment. <br> **CO5:** Understand the costing system and cost management system. |
| **25ACL3** <br> **CORE LABORATORY 3 : RELATIONAL DATABASE MANAGEMENT SYSTEM** | **CO1:** Design and implement a database schema for a given problem- domain <br> **CO2:** Normalize a database <br> **CO3:** Populate and query a database using SQL DML/DDL commands. <br> **CO4:** Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS programming PL/SQL <br> **CO5:** Knowledge about Table Joining and Recursive Functions |
| **25ASB1** <br> **SKILL BASED 1 : BIG DATA ANALYTICS** | **CO1:** Outline the basic big data concept. <br> **CO2:** Categorize and summarize the processing in Big Data and its importance. <br> **CO3:** Simulate various Big Data technologies like Hadoop, MapReduce,R and NO-SQL. <br> **CO4:** Determine tools and techniques to analyze Big Data. <br> **CO5:** Resolve problems associated with Big Data with features of R Programming. |
| **GENERAL AWARENESS** | **CO1:** This course is designed to create social awareness at a preliminary level for students across the board. <br> **CO2:** To help the students to upgrade their knowledge on current challenges and issues of Indian society. <br> **CO3:** Understand and acquire the knowledge about the current information around the world. <br> **CO4:** Understand the multi-cultural diversity of Indian society through its demographic composition. <br> **CO5:** To understand the different levels of government administration. |
| **MATHEMATICAL SKILLS** | **CO1:** Problem solving techniques for aptitude problems <br> **CO2:** Prepare themselves for various competitive examinations. <br> **CO3:** Applications of simple formulae <br> **CO4:** Acquaintance to shortcut methods <br> **CO5:** Acquaintance to various elementary concepts |

| Course Code and Course Name | Course Outcomes |
|---|---|
| **LANGUAGE-IV** | **CO1:**சங்க கால மக்களின் வாழ்வியலை அறியச் செய்தல். ஆற இலக்கியங்கள் வழி ஒழக்கங்களைக் கற்றல். <br> **CO2:**நாவல் வழி வெளிப்படும் சமுதாயச் சிந்தனைகளை அறிந்து விழிப்புணர்வைப் பெறுதல். <br> **CO3:**நவீன கருவிகளை அறியச் செய்தல். <br> **CO4:**மொழி அறிவை வளர்த்தல், படைப்புத் திறனை வளர்த்தல். <br> **CO5:**மாணவர்களுக்குத் தன்னம்பிக்கை மற்றும் தலைமைப் பண்பை வளர்த்தல், மாணவர்களை வேலை வாய்ப்புடன் கூடிய போட்டித் தேர்வுகளுக்குத் தயார்ப்படுத்துதல். |
| **ENGLISH-IV(E04)** | **CO1:** To understand the narrative style of the renowned prolific writers' personal experiences <br> **CO2:** To analyze and demonstrate their writing skills. <br> **CO3:** To cherish the populous works of eminent classical writers. <br> **CO4:** To develop an ability to write in appropriate genres for a variety of purposes and audience <br> **CO5:** To be aware of important grammar and confidence in their own voice as a writer |
| **25ADSC2 WEB DESIGN WITH JAVASCRIPT** | **CO1:** Understand to develop a static & dynamic webpage by the use of HTML tags. <br> **CO2:** Implement interactive web page(s) using HTML, CSS and java script. <br> **CO3:** Understand the basic set of HTML terminology, techniques, and "tags" while practicing skills that will allow them to create and publish original Web pages for a variety of uses;. <br> **CO4:**Construct Web pages with text and Web editors <br> **CO5:**Acquire the knowledge about the ASP and its procedures |
| **25AAL4 BUSINESS ACCOUNTING SOFTWARE LAB** | **CO1:** Enhances the computerized accounting skills. <br> **CO2:** Ability to interpret the accounting & inventory statements by applying various financial tools. <br> **CO3:** Acquire knowledge on the preparation of statutory compliance. <br> **CO4:** Acquaint to prepare bill-wise statement. <br> **CO5:** Learn to extract financial and inventory reports. |

| Course Code and Course Name | Course Outcomes |
|---|---|
| **25ASB2**<br>**SKILL BASED 2:**<br>**INTERNET OF THINGS** | **CO1:**Explain the definition and usage of the term ‒Internet of Things in different contexts<br>**CO2:**Understand the key components that make up an IoT system<br>**CO3:**Differentiate between the levels of the IoT stack and be familiar with the key technologies and protocols employed at each layer of the stack<br>**CO4:**Apply the knowledge and skills acquired during the course to build and test a complete, working IoT system involving prototyping, programming and data analysis<br>**CO5:**Discover where the IoT concept fits within the broader ICT industry and possible future trends |
| **25ACL4**<br>**CORE LABORATORY 4:**<br>**JAVA SCRIPT** | **CO1:** Understand different data types in JavaScript, including numbers, strings, arrays, and objects. Perform basic operations and manipulations with JavaScript variables and data types<br>**CO2:** Access and manipulate HTML elements using JavaScript. Use JavaScript to modify element attributes, styles, and content dynamically.<br>**CO3:** Write event handler functions to respond to user interactions, such as clicks, mouse movements, and keyboard events. Understand event propagation and utilize event delegation techniques.<br>**CO4:** Learn techniques for debugging JavaScript code, including using console.log statements and browser developer tools.<br>**CO5:** Explore popular JavaScript libraries and frameworks, such as J Query or React, and understand their role in web development. |
| **WOMEN'S RIGHTS** | **CO1:** To gain an understanding about barriers of society and impact of law to mitigate this issues.<br>**CO2:** To make students understand the basic concepts in comparative politics.<br>**CO3:** To understand the relationship between patriarchy, power and violence.<br>**CO4:** To recognize key women's human rights defenders who have made important contribution to furthering the rights |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | of women and girls.<br>**CO5:** Demonstrate a working knowledge of feminism and the field of Women and Gender Studies. |
| **MATHEMATICAL SKILLS** | **CO1:** Problem solving techniques for aptitude problems<br>**CO2:** Prepare themselves for various competitive examinations.<br>**CO3:** Applications of simple formulae<br>**CO4:** Acquaintance to shortcut methods<br>**CO5:** Applying the techniques in real life problems |
| **COC1/ COC2/ COC3/ COC4 EXTENSION ACTIVITIES** | **CO1:** Identify and apply the elements of social activities<br>**CO2:** Demonstrate effective use of government schemes and projects<br>**CO3:** Investigate visual strengths to promote NCC activities<br>**CO4:** Identify and apply the sustainable use of club activities<br>**CO5:** Create the awareness to people about the environmental pollution |
| **25AGC6 OPERATING SYSTEM** | **CO1:** Understand the operating systems objectives and functionality along with system programs and system calls.<br>**CO2:** Design deadlock, prevention and avoidance algorithms.<br>**CO3:** Various Scheduling algorithms.<br>**CO4:** Compare and contrast various memory management schemes.<br>**CO5:** Design and Implement a prototype file systems. |
| **25ADSC3 JQUERY AND ANGULAR JS** | **CO1:** Demonstrate understanding of javascript and Jquary scripting fundamentals.<br>**CO2:** Analyze and evaluate website applications for design, efficiency and usability<br>**CO3:** Utilize the HTML5 canvas element to draw animate, and add interactivity to elements<br>**CO4:** Get familiar with client side JavaScript frameworks and Angular framework.<br>**CO5:** Boost your hire ability through innovative and indecent; ermine |
| **25AGE1A GENERIC ELECTIVE 1 :<br>A. DATA MINING AND WAREHOUSING** | **CO1:** Acquire knowledge about Tokens. Control Structures, Decision Making Statements – Loops in C++<br>**CO2:** Knowledge on Class and Objects, Friend functions, Overloading member functions, and Constructor & Destructors |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | **CO3:** Acquire knowledge about Operator Overloading, Type conversion , Inheritance, Types of inheritance, Virtual Base classes.<br>**CO4:** Knowledge on Pointers, Pointer to class and objects, Arrays, Characteristics, Memory models and Virtual Function<br>**CO5:** Acquire knowledge about Files and Steps of File Operations, Exception Handling, Strings |
| **25AGE1B**<br>**GENERIC ELECTIVE 1 :**<br>**B. CLIENT / SERVER COMPUTING** | **CO1:** Describe and Synthesis concepts of programming for networking, including, multithreading, delegate and event handling, remote files I/O and database connectivity.<br>**CO2:** Develop Code for basic network and Internet protocols including sockets, stream and packet protocols such as TCP, UDP, HTTP, FTP and SMTP protocols for creating simple two tier client server applications.<br>**CO3:** Program multi-tier client server computing systems with remote and web services protocols for creating distributed client server systems<br>**CO4:** Design and develop specialized client server systems with better security, scalability, queuing, and optimal performance and bandwidth utilization.<br>**CO5:** Program different network programming tools, network monitoring, tracking and analyzing advanced client server systems. |
| **25AGE1C**<br>**GENERIC ELECTIVE 1 :**<br>**C. INDUSTRY 4.0** | **CO1:** Acquire knowledge about Industry 4.0 and for digital transformation<br>**CO2:** Familiarize and learn the student with the concept of Artificial Intelligence.<br>**CO3:** To enable the students to understand the Big data and data analytics<br>**CO4:** Insight into the various methods of applications and tools of Industry 4.0<br>**CO5:** lStudents can attain confident and necessary skills to attend their jobs 2030 |
| **25AGE1D**<br>**GENERIC ELECTIVE 1 :**<br>**D.SOFTWARE ENGINEERING** | **CO1:** Plan a software engineering process life cycle , including the specification, design, implementation, and testing of software systems<br>**CO2:** Evaluate the quality of the requirements, analysis and |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | design work done during the module.<br>**CO3:**Design and communicate ideas about software system solutions at different levels<br>**CO4:**Analyze and translate a specification into a design, and then realize that design practically, using an appropriate software engineering methodology.<br>**CO5:**Know how to develop the code from the design and effectively apply relevant standards and perform testing, and quality management and practice |
| **25ASB3**<br>**SKILL BASED 3 : CLOUD COMPUTING** | **CO1:**Understand core concepts of the cloud computing, the characteristics, advantages and challenges brought about by the various models and services in cloud computing.<br>**CO2:**Apply the fundamental concepts in data centers to understand the tradeoffs in power, efficiency and cost by Load balancing approach.<br>**CO3:**Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems.<br>**CO4:**Analyze the billing of resources and understand various managements and how to deal with disasters.<br>**CO5:** Get familiarize with Local Clouds and Migrating between Clouds. |
| **25ACL5**<br>**CORE LABORATORY  5 :**<br>**ANGULAR JS LAB** | **CO1:** Create a simple AngularJS application with modules, controllers, and data binding.<br>**CO2:** Create custom services to encapsulate reusable code and share data between components.<br>**CO3:** Apply AngularJS filters to transform and manipulate data displayed in the application.Use AngularJS routing to create single-page applications with multiple views.<br>**CO4:** Write unit tests for AngularJS components, such as controllers, services, and directives, using testing frameworks like Jasmine.<br>**CO5:** Understand security considerations when deploying AngularJS applications, such as handling authentication and protecting against common vulnerabilities. |
| **25ACIR**<br>**INTERNSHIP / FIELD PROJECT** | **CO1:** To Integrate theory with practical.<br>**CO2:** To give opportunity to students to work with industrial expert.<br>**CO3:** To introduce students to work culture. |

| Course Code and Course Name | Course Outcomes |
|---|---|
|  | **CO4:** Acquire skills in communication, management team work.<br>**CO5:** To understand scope, functions and job responsibilities in various departments of an organization. |
| **MANAGERIAL SKILLS** | **CO1:** Develop and effectively communicate through verbal/ oral communication and improve thelistening skills.<br>**CO2:** Develop and actively participate in group discussion / meetings / interviews and prepare & deliver presentations.<br>**CO3:** Understand and develop effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter- personal relationships, conflict management and leadership quality.<br>**CO4:** Understand the individual through goal/target setting, self motivation and practicing creative thinking.<br>**CO5:** Acquire the knowledge about the reasoning ability and mental attitude. |
| **25AGC7 COMPUTER NETWORKS** | **CO1:** Understand the concepts of networks, types and architectures.<br>**CO2:** Apply addressing entities of network with implementation of TCP and UDP protocols.<br>**CO3:** Identify the networks technologies for error free transmission of data<br>**CO4:** Apply various routing protocols in data communication to select optimal path.<br>**CO5:** Develop real time applications of networks |
| **25ADSC4 DATA SCIENCE** | **CO1:** Understand the basics in Data Science and Big data.<br>**CO2:** Understand overview and building process in Data Science.<br>**CO3:** Understand various Algorithms in Data Science.<br>**CO4:** Understand Hadoop Framework in Data Science.<br>**CO5:** Case study in Data Science. |
| **25ADSC5 PHP & MySQL** | **CO1:** Use PHP's built-in server to server static resources.<br>**CO2:** Use PHP to add some dynamic aspects to our pages.<br>**CO3:** Use HTML Forms.<br>**CO4:** The Difference between GET And POST requests.<br>**CO5:** Use Cookies to store some data in the browser and pass it to the next request. |
| **25ADSE2A A. SOCIAL NETWORKS AND DATA ANALYTICS** | **CO1:** Work on the internals components of the social network<br>**CO2:** Model and visualize the social networks<br>**CO3:** Mine the behavior of the users in the social network |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | **CO4:**Predict the possible next outcome of the social network |
| | **CO5:**Apply social network in real time applications |
| **25ADSE2B**<br>**B. INTRODUCTION TO MACHINE LEARNING** | **CO1:**Understanding of the fundamental issues and challenges of machine learning: data,model selection, model complexity, etc.<br>**CO2:**Understanding of the strengths and weaknesses of many popular machine learning approaches.<br>**CO3:**Explain about the concepts of computational learning theory and dimensionality Reduction<br>**CO4:**Appreciate the underlying mathematical relationships within and across Machine Learning algorithms and the paradigms of supervised and un-supervised learning. |
| **25ADSE2C**<br>**C. PRINCIPLES OF ARTIFICIAL INTELLIGENCE** | **CO1:**Understand basic principles of AI in solutions that require problem solving, inference, knowledge representation and learning.<br>**CO2:**Understand knowledge representation using logic and rules<br>**CO3:**Analyze various AI techniques in expert systems, artificial neural networks and other machinelearning models.<br>**CO4:**Analyze the main approaches to natural language processing and expert systems. |
| **25AIDE**<br>**H.SCRIPTING LANGUAGES** | **CO1:**Understand to develop a static & dynamic webpage by the use of HTML tags<br>**CO2:**Implement interactive web page(s) using HTML, CSS and java script.<br>**CO3:**Under  Understand the basic set of HTML terminology, techniques, and "tags" while practicing skills that will allow them to create and publish original Web pages for a variety of uses;.<br>**CO4:**Construct Web pages with text and Web editors<br>**CO5:**Acquire the knowledge about the ASP and its procedures |
| **25ACL6**<br>**PHP PROGRAMMING** | **CO1:**Set up a MySQL database server and create a sample database for the lab. Configure the necessary PHP extensions and ensure connectivity to the database server.<br>**CO2:**Write PHP code to declare variables and assign values. Understand different data types in PHP, including strings, integers, arrays, and 17ooleans. Perform basic |

| Course Code and Course Name | Course Outcomes |
|---|---|
| | operations and manipulations with PHP variables and data types.<br>**CO3:**Connect to a MySQL database from PHP using appropriate functions or extensions. Perform CRUD operations (Create, Read, Update, Delete) on the database using PHP and SQL queries.<br>**CO4:**Combine PHP with HTML and CSS to create dynamic web pages. Utilize PHP to generate dynamic content and display data from the database. Implement user input forms and handle form submissions in PHP.<br>**CO5:**Enable file uploads in PHP and implement file upload functionality in web applications. Learn how to handle and validate uploaded files securely. Perform file operations such as reading, writing, and deleting files using PHP. |
| **25ACPV**<br>**PROJECT & VIVA VOCE** | **CO1:**Analyse the problem Domain<br>**CO2:**Find the best Computer Language and implement<br>**CO3:**Develop a project model and get approval from the user<br>**CO4:**Develop final software model<br>**CO5:**Test and Implement the software in the customer site. |
| **MANAGERIAL SKILLS** | **CO1:**Develop and effectively communicate through verbal/oral communication and improve the listening skills.<br>**CO2:**Develop and actively participate in group discussion / meetings / interviews and prepare & deliver presentations.<br>**CO3:**Understand and develop effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter- personal relationships, conflict management and leadership quality.<br>**CO4:**Understand the individual through goal/target setting, self motivation and practicing creative thinking.<br>**CO5:**Acquire the knowledge about the reasoning ability and mental |
| **CLUB ACTIVITY** | **CO1:**Identify and apply the elements of club activities<br>**CO2:**Demonstrate effective use of government schemes and projects<br>**CO3:**Investigate visual strengths to promote club activities<br>**CO4:**Identify and apply the sustainable use of club activities<br>**CO5:**Create the awareness to the student about club activities |