

## **PARK'S COLLEGE (AUTONOMOUS) – TIRUPUR- 5**

### **M.Sc Computer Science**

#### Vision

- ❖ To serve as a higher educational leader in academics and research to provide excellent resources for technological, educational and allied sectors to transform the lives of mankind in the ever changing global scenario.

#### Mission

- ❖ Creating and disseminating of world class knowledge in global context
- ❖ Equip students with knowledge on up-to-date technological developments to take part in global software industry
- ❖ Promote state of art inter disciplinary research in computer science
- ❖ Imbibe entrepreneurial culture through curriculum, pedagogy, research and mentoring

## **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

Post graduate of M.Sc. Programme graduates will be

PEO1: Improved to cope up with the changing technologies in the frontier of computer science and allied field.

PEO2: Prepared for inter disciplinary research for inventions/innovations for professional careers to meet the needs of the society.

PEO3: Employed in software industry and engaging in understanding and applying new ideas and thoughts as the field evolves.

## **PROGRAMME OUTCOMES (POs)**

On completion of M.Sc. Programme, the students are expected to

PO1: Increase and apply the knowledge of computer science concepts in appropriate domain of interest.

PO2: Capacity to analyze the problem, identify the required computing facility and implement it to obtain solutions.

PO3: Capability to create a new design for the complex computational problems which meets the specific needs for societal impact domains.

PO4: Solve complex real-time problems by considering professional, ethical, legal and social issues

PO5: Understand and choose the appropriate modern techniques and tools for the complex systems of various domains and understands the advantages and limitations.

PO6: Facility to work in a group with an effective rapport building with team members in computer industries to accomplish a common goal.

PO7: Skill to communicate effectively in the basis of presenting their research work and gain knowledge on documentation and reports writing in a professional way.

PO8: Capability to distinguish the ethical, legal and societal issues of computing surroundings and will take the responsibility by applying computer skill practices.

PO9: Ability to analyze the local and global impact of computing on individuals, organizations and society.

PO10: Demonstrate the principles of computer science and apply these in the multidisciplinary environments to manage project.

PO11: Understand the impact of computer science in societal and environmental contexts and demonstrate the knowledge for the sustainable development.

PO12: Students can independently enable to acquire the innovative ideas as per the modern era and they can create a value and wealth for the futuristic world.

## COURSE OUTCOMES

Course Code and Course Name	Course Outcomes
<b>34AC1 ANALYSIS &amp; DESIGN OF ALGORITHMS</b>	<p>CO1: Understand about the Data Analysis of algorithms Structures and algorithms,</p> <p>CO2: Understand about Basic Traversal And Search Techniques</p> <p>CO3: Understand about Binary Trees, Graphs</p> <p>CO4: Understand about The Greedy Method, Knapsack Problem, Minimum Cost Spanning Tree</p> <p>CO5: Understand about Backtracking, 8-Queens Problem, Hamiltonian Cycles, Branch And Bound and Travelling Salesperson.</p>
<b>34AC2 OBJECT ORIENTED ANALYSIS AND DESIGN &amp; C++</b>	<p>CO1: This course presents the object model, classes, objects and their relationship, nature of the classes and introduction to C++</p> <p>CO2: Understood the concepts in object models and the basically the C++ language</p> <p>CO3: To understand the Object-based view of Systems</p> <p>CO4: To develop robust object-based Programmes</p> <p>CO5: To inculcate necessary skills to handle complexity in Object Oriented software design</p>
<b>34ACL1 CORE LABORATORY 1: ALGORITHMS AND OBJECT ORIENTED PROGRAMMING</b>	<p>CO1: To provide the students for fundamental knowledge and exposure to the concept, theories and practices in the Object Oriented Programming.</p> <p>CO2: To train the students write programs for various Data structure algorithms.</p> <p>CO3: To enable the students gain knowledge about various search Techniques.</p> <p>CO4: Make the students to follow different types of Sorting Techniques.</p> <p>CO5: To help the students to learn about Virtual functions and Friend functions</p>
<b>34ACL2 CORE LABORATORY 2: SOFTWARE TESTING</b>	<p>CO1: To enable the students to learn about the usage of tools of Software testing</p> <p>CO2: It provides hand on experience of Software Testing tools</p> <p>CO3: Understood the concepts of Software testing</p> <p>CO4: Got the skill of software testing tools</p> <p>CO5: Expertise in using software testing tools</p>
<b>34AC3 ADVANCED NETWORKS</b>	<p>CO1: This course presents the Introduction to Digital networks, Internet Address, Internet protocol,</p> <p>CO2: To enable to learn the digital networks, Internet protocol and UDP diagrams.</p>

Course Code and Course Name	Course Outcomes
	<p>CO3:Gained in-depth knowledge of Internet protocols and their functionalities.</p> <p>CO4:Get well versed with the TCP and UDP.</p> <p>CO5:To get knowledge about Application layer and protocols</p>
<p><b>34AEL1A</b> <b>ELECTIVE-I :</b> <b>A.ADVANCED</b> <b>SOFTWARE</b> <b>ENGINEERING</b></p>	<p>CO1:To enable the students to learn the concepts of Software Engineering</p> <p>CO2:The Introduction to Software Engineering, Design, Testing and Maintenance</p> <p>CO3:Understood the concepts of software engineering.</p> <p>CO4:Understood the concepts of SPM contents</p> <p>CO5:To get versed with Software Testing methods</p>
<p><b>34AEL1B</b> <b>ELECTIVE-I : B</b> <b>SOFTWARE PROJECT</b> <b>MANAGEMENT</b></p>	<p>CO1:Understand Software Development Life Cycle models.</p> <p>CO2:Understand the basic concepts of Software Effort Estimation and software quality.</p> <p>CO3:Understand the concepts of Resource Allocation and Managing Contracts</p> <p>CO4:Knowledge about Managing Contracts and ISO 12207</p> <p>CO5:Well versed about the Software Quality and its importance</p>
<p><b>34AEL1C</b> <b>ELECTIVE -I :</b> <b>C.ADVANCED</b> <b>SOFTWARE TESTING</b></p>	<p>CO1:Investigate the reason for bugs and analyse the principles in software testing to prevent and remove bugs</p> <p>CO2;Implement various test processes for quality improvement.</p> <p>CO3:Design test Planning, Understand the basic concepts of black box testing and challenges in it.</p> <p>CO4:Apply the software testing techniques in commercial environment</p> <p>CO5:Use practical knowledge of a variety of ways to test software and an understanding of some of the trade-offs between testing techniques</p>
<p><b>ABILITY</b> <b>ENHANCEMENT-I</b></p>	<p>CO1:Develop and effectively communicate through verbal/oral communication and improve the listening skills.</p> <p>CO2:Develop and actively participate in group discussion / meetings / interviews and prepare &amp; deliver presentations.</p> <p>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.</p> <p>CO4:Understand the individual through goal/target setting, self motivation and practicing creative thinking.</p> <p>CO5:Acquire the knowledge about the reasoning ability and mental attitude.</p>

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<p align="center"><b>34AC4 DATA MINING AND WAREHOUSING</b></p>	<p>CO1:Identify data mining tools and techniques in building intelligent machines.</p> <p>CO2:Analyze various data mining algorithms in applying in real time applications.</p> <p>CO3:Analyze unsupervised and supervised naive algorithms in real world applications</p> <p>CO4:Demonstrate the data mining algorithms to combinatorial optimization problems</p> <p>CO5Illustrate the mining techniques like association, classification and clustering on transactional databases.</p>
<p align="center"><b>34AC5 ADVANCED JAVA PROGRAMMING</b></p>	<p>CO1; It presents the concepts of RMI, JDBC , Servlets, JQuery and JSP.</p> <p>CO2 :To enable the students to learn the basic functions, principles and concepts of java Networking Concepts</p> <p>CO3: Use the concepts of JDBC, Java Servlets and Java Server pages.</p> <p>CO4 :Use exceptions, threads, collections, logs of Java for the given problem.</p> <p>CO5 :Get knowledge in JQuery and its usage</p>
<p align="center"><b>34ACL3 CORE LABORATORY 3: ADVANCED JAVA PROGRAMMING</b></p>	<p>CO1:This course presents the object model, classes, objects and their relationship, nature of the classes and introduction to Java</p> <p>CO2:To enable the students to learn JDBC and Its Various Techniques</p> <p>CO3:Understood the concepts in object models and database connective and to create web applications.</p> <p>CO4:Programming in the area of Applet and Servlet</p> <p>CO5:Get familiar with JSP programming</p>
<p align="center"><b>34ACL4 CORE LABORATORY 4 : DATA MINING USING R</b></p>	<p>CO1:Gain the knowledge about algorithms.</p> <p>CO2:Discuss various clustering methods and applications in Data mining</p> <p>CO3:Apply same algorithms and implements it</p> <p>CO4 :classification and prediction methods in various data sets and trees</p> <p>CO5:Data visualization</p>
<p align="center"><b>34AEL2A ELECTIVE II : A.MULTIMEDIA AND ITS APPLICATIONS</b></p>	<p>CO1:It presents the Introduction to Multimedia, Images &amp; Animation.</p> <p>CO2:Describe about multimedia and how to deliver it.</p> <p>CO3;Demonstrate the images to create and making still images and use formats.</p> <p>CO4:Apply the Concept Animation and principles of Animations.</p> <p>CO5;Develop the power of motion and video.</p>

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<p align="center"><b>34AEL2B</b></p> <p align="center"><b>ELECTIVE II : B.BLOCKCHAIN TECHNOLOGY</b></p>	<p>CO1:Understand block chain technology and the role of decentralization in block chain</p> <p>CO2:Discuss the key concepts of symmetric cryptography and public key cryptography</p> <p>CO3:Analyze consensus algorithms and understand the concept of bit coin</p> <p>CO4:Explore bit coin network payments, bit coin clients and APIs</p> <p>CO5:Demonstrate smart contract templates, alternative coins, and build smart contracts</p>
<p align="center"><b>34AEL2C</b></p> <p align="center"><b>ELECTIVE II : C.PHP PROGRAMMING</b></p>	<p>CO1:To enable the students to learn the fundamentals of Open Source software and get experience in PHP and AJAX</p> <p>CO2:This course presents the Introduction to PHP, PHP functions ,database handling and AJAX .</p> <p>CO3:Understood the features like functions, forms in PHP.</p> <p>CO4:Understood Files handling, OOPs concepts , Cookies, Sessions and Data base, draw images on the server withAJAX.</p> <p>CO5:Acquired skills to write PHP programs</p>
<p align="center"><b>ABILITY ENHANCEMENT-I</b></p>	<p>CO1:Develop and effectively communicate through verbal/oral communication and improve the listening skills.</p> <p>CO2;Develop and actively participate in group discussion / meetings / interviews and prepare &amp; deliver presentations.</p> <p>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.</p> <p>CO4:Understand the individual through goal/target setting, self motivation and practicing creative thinking.</p> <p>CO5:Acquire the knowledge about the reasoning ability and mental attitude.</p>

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<p align="center"><b>34AC7 PYTHON PROGRAMMING</b></p>	<p>CO1:To enable the students to gain knowledge in Python.  CO2:This course presents an Introduction to Python ,creation of web applications, Network applications and basic concepts of Python Programming  CO3:To understand File operations, Classes and Objects  CO4:To create Client server networking applications To develop web applications using Python  CO5:To enable the students to gain knowledge in Python.</p>
<p align="center"><b>34ACL5 CORE LABORATORY 5 : PYTHON PROGRAMMING</b></p>	<p>CO1:To enable the students to gain knowledge in Python programming.  CO2:This course Python Programming develops practical knowledge on loops and functions  CO3:To understand File operations, Classes and Objects  CO4:To develops programs using Modules in Python.  CO5:To create web page applications using Python</p>
<p align="center"><b>34AC8 DIGITAL IMAGE PROCESSING</b></p>	<p>CO1:It presents the Introduction to Digital image Processing, fundamentals, image enhancement and image restoration techniques  CO2:To enable the students to learn the fundamentals of Digital Image Processing, image compression and segmentation  CO3:Understood the fundamentals of Digital Image Enhancement techniques  CO4:Implement the image Restoration, Noise models and Geometric Transformations  CO5:Demonstrate the image compression and segmentation techniques</p>
<p align="center"><b>34AC9 BUSINESS INTELLIGENCE</b></p>	<p>CO1;It presents the Introduction to Business intelligence, Big data, Hadoop and Applications of Big Data  CO2:Be exposed with the basic rudiments of business intelligence system  CO3:Understand the modeling aspects behind Business Intelligence  CO4:Understand of the business intelligence life cycle and the techniques used in it  CO5:Be exposed with different data analysis tools and techniques</p>
<p align="center"><b>34AEL3A ELECTIVE III : A. MOBILE COMPUTING</b></p>	<p>CO1:It presents the overview of Mobile computing, Applications and Architectures. Also describes the futuristic computing challenges.  CO2:The basics of Wireless voice and data communications technologies.  CO3:Build working knowledge on various telephone and satellite networks.  CO4:The working principles of wireless LAN and its standards and Mobile Computing algorithms.  CO5:Build skills in working with Wireless application Protocols to develop mobile content applications</p>



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<p align="center"><b>34AEL3B ELECTIVE III: B.CLOUD COMPUTING</b></p>	<p>CO1:It presents the introduction to Cloud computing, cloud services, architectures and applications.</p> <p>CO2:To enable the students to learn the basics of cloud computing and its applications, architecture</p> <p>CO3:Understood the Cloud computing architectures, applications and challenges</p> <p>CO4 :Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems</p> <p>CO5:Get familiarize with characteristics, advantages and challenges brought about by the various models and services in cloud computing</p>
<p align="center"><b>34AEL3C ELECTIVE III: C.FUNDAMENTALS OF ROBOTICS</b></p>	<p>CO1:Demonstrate knowledge of industrial robots, characteristics, end effecters and actuators.</p> <p>CO2:Apply spatial transformation to obtain forward and inverse kinematics</p> <p>CO3:Solve robot dynamics problems, generate joint trajectory for path planning.</p> <p>CO4:Describe working principle of various sensors and program different operations.</p> <p>CO5:Appreciate applications of robots in industry</p>
<p align="center"><b>ABILITY ENHANCEMENT-II</b></p>	<p>CO1:Develop and effectively communicate through verbal/oral communication and improve the listening skills.</p> <p>CO2:Develop and actively participate in group discussion / meetings interviews and prepare &amp; deliver presentations.</p> <p>CO3:Understand and develop effectively in multi-disciplinary and heterogeneous through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.</p> <p>CO4:Understand the individual through goal/target setting, self motivation and practicing creative thinking.</p>
<p align="center"><b>34AELPV PROJECT WORK AND VIVA-VOCE</b></p>	<p>CO1:Ability to identify research problems and selection of research areas.</p> <p>CO2:Acquire knowledge to design application software.</p> <p>CO3:Ability to choose and apply appropriate tools for programming.</p> <p>CO4:Develop the skills to arrive a technical solution to the research problem.</p> <p>CO5:Obtain practical knowledge in preparing the research report.</p>
<p align="center"><b>34AC10 ARTIFICIAL INTELLIGENCE &amp; EXPERT SYSTEMS</b></p>	<p>CO1:Understand the fundamental concepts of AI and its applications and to familiarize the knowledge representation for solving agent based critical problems.</p> <p>CO2:Understand the concepts of rule based expert systems, learning, commonsense etc.</p> <p>CO3:It presents the Introduction to AI Problems, Heuristic techniques, and Represents Simple facts and learning.</p> <p>CO4:To enable the students to learn the concepts of AI and Expert Systems</p>

Course Code and Course Name	Course Outcomes
	CO5:Understood the AI & Expert Systems and Learnt the Heuristic techniques and reasoning
<b>ABILITY ENHANCEMENT-II</b>	<p>CO1:Develop and effectively communicate through verbal/oral communication and improve the listening skills.</p> <p>CO2:Develop and actively participate in group discussion / meetings /interviews and prepare &amp;deliver presentations.</p> <p>CO3:Understand and develop effectively in multi-disciplinary and heterogeneous to through the knowledge of team work, Interpersonal relationships, conflict management and leadership quality.</p> <p>CO4:Understand the individual through goal/target setting, self motivation and practicing creative thinking.</p>