Programme Outcomes (PO)	
PO1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design/development of solutions**: Design solutions for complex engineering 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	**Conduct investigations of complex problems:** 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	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with 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	**Project management and finance:** Demonstrate knowledge and understanding of the engineering 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	**Life-long learning:** 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.

Program Specific Outcomes (PSO):	
PSO1	Apply mathematical and statistical models along with suitable AI algorithms to address and solve computational tasks.
PSO2	Apply the Data Science techniques to achieve effective insights and decision making to solve real-life problems.
PSO3	Develop AI based software applications and solutions to meet the needs of industry and society.

SY SEM III	
Course Title and Course Code	**Course Outcome**
Applied Mathematics BSC-AIDS-301	1. Describe the statistical data numerically by using Lines of regression and Curve fittings. 2. Solve basic problems in probability theory, including problems involving the binomial, Poisson, and normal distributions. 3. Calculate numerical Integration. 4. Define fuzzy sets using linguistic words and represent these sets by membership functions, convexity, Normality, support, etc. 5. Solve examples on vector calculus. 6. Solve assignment problems by using different techniques of operation research.
Computer Networks PCC-AIDS-302	1. Implement network and data link layer. 2. To implement the client server model using sockets. 3. To analyse the protocol structure using network analysing tools. 4. Apply the concepts of application layer services. 5. Understand multimedia streaming and relevant protocols.
Discrete Mathematics &Structures PCC-AIDS-303	1. Apply logic concepts in designing program. 2. Illustrate basic set concepts & apply operations onset. 3. Minimize the Boolean Function. 4. Apply basic concepts of probability to solve real world problem. 5. Represent data structures using graph concepts. 6. Design abstract machine, detect deadlocks.
Data Visualization PCC-AIDS-304	1. Understand the challenges associated with data visualization and its classification for both qualitative and quantitative data. 2. Apply the skills to create basic graphs and comprehend their fundamental structure. 3. Apply different graphs in business contexts, understanding their relevance and impact. 4. Understand the application of correlation matrices in multivariate analysis. 5. Demonstrate proficiency in selecting the most appropriate visualization method based on data characteristics. 6. Understand the basics of multivariate statistical visual representations and their implications.
Computer architecture and OS PCC-AIDS-305	1. Understand the theory and architecture of central processing unit & analyse some of the design issues in terms of speed, technology, cost, performance 2. Use appropriate tools to design verify and test the CPU architecture & learn the concepts of parallel processing, pipelining and inter processor communication. 3. Understand the architecture and functionality of central processing unit & Exemplify in a better way the I/O and memory organization, Memory management systems, Virtual Memory

	4. Describe and explain the fundamental components of a computer operating system 5. Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.
Problem solving using programming language PCC-AIDS-306	1. Articulate the principles of procedure-oriented problem solving and programming. 2.Explain programming fundamentals including statements, control flow and recursion 3. Able to formulate problems and implement algorithm. 4. Analyze and use data structures to solve the complex problem statements. . 5. Demonstrate file operations using file handling concepts through developing applications
SY SEM IV	
Data Structure using Python PCC-AIDS-401	1. Write programs using basic concepts of Python Programming 2. Implement algorithms for arrays, linked structures, stacks, queues, trees, and graphs 3. Write programs that use arrays, linked structures, stacks, queues, trees, and graphs 4. Compare and contrast the benefits of dynamic and static data structures implementation 5. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.
Introduction to Data Science PCC-AIDS-402	1. Understand the core concepts of data science 2. Apply the steps to real-world scenarios and case studies 3. Differentiate between analysis and reporting in the context of data science 4. Understand the key concepts of machine learning, including overfitting and train/test splits. 5. Develop skills in manipulating and rescaling data for effective visualization. 6. Demonstrate the ability to critically assess and adapt data science approaches to different scenarios.
Automata Theory PCC-AIDS-403	1. To introduce students to the mathematical foundations of computation, the theory of formal languages and grammars 2. To strengthen the students' ability to understand and conduct mathematical proofs for computations 3. To make the students understand the use of automata theory in Compliers & System Programming. 4. To analyse and design finite automata, pushdown automata, grammars & Turing machines

Database Management System PCC-AIDS- 404	1. Understand fundamentals of database management systems. 2. Represent logical design of database using E-R Diagram. 3. Analyze & construct good database design. 4. Apply SQL queries to design & manage the database. 5. Understand transactions, concurrency control and apply to database system. 6. Understand failures in database and appropriate recovery techniques.
Software Engineering PCC-AIDS-405	1. Comprehend systematic methodologies of SDLC(Software Development Life Cycle) 2. Discriminate competing and feasible system requirements indicating correct real world problem scope and prepare stepwise system conceptual model using stakeholder analysis and requirement validation. 3. Prepare SRS document for a project 4. Apply software design and development techniques 5. Develop a quality software project through effective team-building, planning, scheduling and risk 6. Understand testing methods at each phase of SDLC
Web Technology PCC-AIDS-406	1. Apply knowledge of client-side scripting. 2. Develop web application using PHP. 3. Design web application using MVC and Angular JS. 4. Demonstrate use of server-side technologies. 5. Explore newer tools for web development.
TY SEM V	
Statistics for Data Science PCC-AIDS-501	1. Understand fundamental statistical concepts. 2. Apply different probability concepts. 3. Analyze hypothesis testing & apply its procedure in different contexts. 4. Evaluate the principles of linear regression. 5. Apply the principles of analysis-of-variance (ANOVA) technique in experimental design. 6. Demonstrate the application of curve fitting techniques to given data.
Design and Analysis of Algorithms PCC-AIDS-502	1. Formulate the problem 2. Analyze the asymptotic performance of algorithms 3. Decide and apply algorithmic strategies to solve given problem 4. Find optimal solution by applying various methods 5. Categorize the problem to determine polynomial and non-polynomial based on its nature 6.Understand and demonstrate basic concepts of parallel algorithms
Internet of Things PCC-AIDS-503	1: Understand the fundamentals of IOT 2: Understand basic of RFID and Sensor technology 3: Understand the basics of IoT systems like Raspberry Pi, Arduino, and Banana Pi. 4: Explain various IOT communication protocols.

Computer Graphics and Multimedia OEC-AIDS-504	1. Express basic ideas of computer graphics and different display devices. 2. Understand & apply various transformation, projection and rendering techniques on graphical objects. 3. Identify & apply the intensity of light on graphical objects using different illumination models 4. Understand multimedia system & use of Multimedia Authoring & Compression techniques on graphical objects.
Fundamentals of Embedded Systems OEC-AIDS-505	1. Understand the architecture, components, and classifications of embedded systems. 2.Grasp the fundamentals and applications of the 8051 microcontrollers and external memory interfacing for designing embedded systems. 3. Develop skills in programming embedded systems. 4. Acquire knowledge on real-time operating systems RTOS.
Information Security PCC-AIDS-506	1. To understand the basics of cryptography, how it has evolved, and some key encryption techniques. 2. To understand principal concepts, major issues, technologies, and basic approaches in information security. 3. To learn security policies such as authentication, integrity and confidentiality. 4. To understand major information security threats and counters measures
Java Programming PCC-AIDS-507	1. Explain different concepts of Java. 2. Design an object-oriented solution for given problem using Java. 3. Implement program using Java.
Business Communication HM-AIDS-508	1. Learn to communicate with others in practical, business-oriented situations 2. Learn to express themselves in English with greater fluency, accuracy and confidence 3. Learn to handle themselves in English in a variety of business contexts, from negotiating, to using the telephone, to making presentations, to socializing 4. Enhance the skills of listening, speaking, pronunciation skills, as well as business vocabulary 5. Acquire the communicative competencies crucial for appropriate workplace behaviour.
TY SEM VI	
Machine Learning PCC-AIDS-601	1. Explain Machine Learning concepts. 2. Analyze the Machine Learning model. 3. Design solution using Machine Learning techniques. 4.To tackle real world problems in domain of data mining, information retrieval.
Data Engineering PCC-AIDS-602	1. Explain Data Engineering Lifecycle and select suitable Data Architecture 2. Identify data sources and select suitable data storage technologies

	3. Explain data Ingestion process 4. Apply Data Modelling and Data Transformations suitable for Data Analytics.
Big Data Analytics PCC-AIDS-603	1. Analyze several key technologies used in manipulating, storing, and analyzing big data. 2. Acquire clear understanding of R & Hadoop. 3. Acquire clear understanding of Integrating R & Hadoop and Acquire clear understanding of Hadoop Streaming and its importance. 4. Manage Big Data and analyze Big Data. 5. Apply tools and techniques to analyze Big Data
E-Commerce and Digital Marketing OEC-AIDS-604	1. Identify the importance of the e-commerce and digital marketing for business success. 2. Create a digital marketing plan, starting from the SWOT analysis and defining a target group. 3. Identifying digital channels, business tools used in social networking. 4.Demonstrate the optimization of web site using business tools.
Image Processing OEC-AIDS-605	1. Describe the basic issues and the scope of image processing, and the roles of image processing and systems in a variety of applications. 2.Explore different techniques in image acquisition and color transformation 3.Understand how digital images are represented 4.Evaluate the mathematical principles of digital image enhancement 5.Explore and apply the concepts of Edge detection, segmentation and object recognition.
High Performance Computing PCC-AIDS-606	1.Describe different parallel architectures, inter-connect networks, programming models 2.Develop an efficient parallel algorithm to solve given problem 3.Analyze and measure performance of modern parallel computing systems 4.Build the logic to parallelize the programming task
Industrial Training / Internship SI-AIDS-607	1.Have an exposure to industrial practices and to work in teams 2.Communicate effectively 3.Understand the impact of engineering solutions in a global, economic, environmental, and societal context 4.Develop the ability to engage in research and to involve in life-long learning 5.Comprehend contemporary issues 6.Engage in establishing his/her digital footprint
Mini Project PW-AIDS-608	1.Identify specific problem statement from a selected domain. 2.Analyze the problem and prepare SRS and design document. 3.Write code and carry out testing. 4.Write a report covering details of the project and give presentation on a project.