

B.E- Computer science and engineering

Semester I

Course code: ETBS102

Category: Basic Science Course

Course title: Mathematics – I

Course out come:

The objective of this course is to familiarize the prospective engineers with techniques in calculus, multivariate analysis and linear algebra. It aims to equip the students with standard concepts and tools at an intermediate to advanced level that will serve them well towards tackling more advanced level of mathematics and applications that they would find useful in their disciplines.

The students will learn:

1. To apply differential and integral calculus to notions of curvature and to improper integrals. Apart from some other applications they will have a basic understanding of Beta and Gamma functions.
2. The fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.
3. The tool of power series and Fourier series for learning advanced Engineering Mathematics.
4. To deal with functions of several variables that are essential in most branches of engineering.
5. The essential tool of matrices and linear algebra in a comprehensive manner.

Course Code: ETES103

Category: Engineering Science Course

Course Title: Basic Electrical

Engineering

Course Outcomes

1. To understand and analyze basic electric and magnetic circuits.
2. To study and working principles of electrical machines and power convertors.
3. To introduce the components of low voltage electrical installations

Course code ETES106

Category Engineering Science Courses

Course title **Engineering Workshop / Manufacturing Practices**

Course Outcomes

Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry, to fabricate components using different materials

SEMESTER II

Course code ETHS201

Category Humanities and Social Sciences including Management courses

Course title **English**

Course Outcomes

The student will acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills.

Course code ETBS202

Category Basic Science Course

Course title Chemistry

Course Outcomes

The concepts developed in this course will aid in quantification of several concepts in chemistry that have been introduced at the 10+2 levels in schools. Technology is being increasingly based on the electronic, atomic and molecular level modifications.

Quantum theory is more than 100 years old and to understand phenomena at nanometer levels, one has to base the description of all chemical processes at molecular levels. The course will enable the student to:

1. Analyse microscopic chemistry in terms of atomic and molecular orbitals and intermolecular forces.
2. Rationalise bulk properties and processes using thermodynamic considerations.
3. Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques
4. Rationalise periodic properties such as ionization potential, electronegativity, oxidation states and electronegativity.
5. List major chemical reactions that are used in the synthesis of molecules.

Course code ETES203

Category Engineering Science Course

Course title Programming for Problem Solving

Course Outcomes

The student will learn

1. To translate the algorithms to programs (in C language).
2. To test and execute the programs and correct syntax and logical errors.
3. To implement conditional branching, iteration and recursion.
4. To decompose a problem into functions and synthesize a complete program using divide and conquer approach.
5. To use arrays, pointers and structures to formulate algorithms and programs.
6. To apply programming to solve matrix addition and multiplication problems and searching and sorting problems.
7. To apply programming to solve simple numerical method problems, namely root finding of function, differentiation of function and simple integration.

Course code ETBS204

Category Basic Science Course

Course title Mathematics - II

Course Outcomes

The objective of this course is to familiarize the prospective engineers with techniques in multivariate integration, ordinary and partial differential equations and complex variables. It aims

to equip the students to deal with advanced level of mathematics and applications that would be essential for their disciplines.

The students will learn:

1. The mathematical tools needed in evaluating multiple integrals and their usage.
2. The effective mathematical tools for the solutions of differential equations that model physical processes.
3. The tools of differentiation and integration of functions of a complex variable that are used in various techniques dealing engineering problems.

Course code ETSP207

Category Engineering Science Course

Course title Computer Programming Laboratory

Laboratory Outcomes

1. To formulate the algorithms for simple problems
2. To translate given algorithms to a working and correct program
3. To be able to correct syntax errors as reported by the compilers
4. To be able to identify and correct logical errors encountered at runtime
5. To be able to write iterative as well as recursive programs
6. To be able to represent data in arrays, strings and structures and manipulate them through a program
7. To be able to declare pointers of different types and use them in defining self-referential structures.
8. To be able to create, read and write to and from simple text files.

Course code ETSP208

Category Engineering Science Courses

Course title Engineering Graphics and Design

Course Outcomes

All phases of manufacturing or construction require the conversion of new ideas and design concepts into the basic line language of graphics. Therefore, there are many areas (civil, mechanical, electrical, architectural and industrial) in which the skills of the CAD technicians play major roles in the design and development of new products or construction. Students prepare for actual work situations through practical training in a new state-of-the-art computer designed CAD laboratory using engineering software. This course is designed to address:

1. to prepare you to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
2. to prepare you to communicate effectively
3. to prepare you to use the techniques, skills, and modern engineering tools necessary for engineering practice

CSBS301 ENGINEERING MATHEMATICS III

Course Outcomes :

At the end of this course, the students will be able to

1. Solve partial differential equations.
2. Knowledge about Fourier series.
3. Understand Fourier transform.
4. Solve boundary value problems.
5. Understand Z-transform.

ETES302 ENVIRONMENTAL STUDIES

Course Outcomes :

At the end of this course, the students will be able to

1. To conversant with basic principles of natural resources, forest resources.
2. To conversant with basic principles of ecosystem and bio-diversity.
3. To identify the causes of pollution and its control measures.
4. Knowledge about Population Growth.
5. Understand the principles of Act.

CSES303 ANALOG ELECTRONIC CIRCUITS

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the characteristics of transistors.
2. Design and analyze various rectifier.
3. Knowledge about amplifier circuits.
4. Understand the fundamental concepts of MOSFETs and their applications for analog electronics circuits.
5. Understand the functioning of OP-AMP and design OP-AMP based circuits

CSES304 DIGITAL ELECTRONICS

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the working of logic families and logic gates.
2. Design and implement Combinational and Sequential logic circuits.
3. Understand the process of Analog to Digital conversion and Digital to Analog conversion.
4. Be able to use PLDs to implement the given logical problem.
5. Knowledge about the Memories.

CSPC305 DATA STRUCTURES AND ALGORITHMS

Course Outcomes :

At the end of this course, the students will be able to

1. For a given algorithm student will able to analyze the algorithms to determine the time and computation complexity and justify the correctness.
2. For a given Search problem (Linear Search and Binary Search) student will able to implement it.
3. 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.

4. Student will able to write an algorithm Selection Sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort and compare their performance in term of Space and Time complexity.
5. Student will able to implement Graph search and traversal algorithms and determine the time and computation complexity.

CSPC306 OBJECT ORIENTED PROGRAMMING

Course Outcomes :

At the end of this course, the students will be able to

1. Student should be able to analyze and design a computer program based on Object Oriented Principles.
2. Students will be able to solve a real world problems based on Object Oriented Principles.
3. Gain the basic knowledge on Object Oriented concepts.
4. Ability to develop applications using Object Oriented Programming concepts.
5. Ability to implement features of object oriented programming to solve real time problems.

CSSP307 DIGITAL ELECTRONICS LAB

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the basic digital circuits and to verify their operation.
2. Construct basic combinational circuits and verify their functionalities.
3. Apply Boolean laws to simplify the digital circuits.
4. Understand the working principles of semiconductor diodes.
5. Understand the working principle of multiplexer and de-multiplexer

CSCP308 DATA STRUCTURES AND ALGORITHMS LAB

Course Outcomes :

At the end of this course, the students will be able to

1. Design and analyze the time and space efficiency of the data structure.
2. Identity the appropriate data structure for given problem.
3. Have practical knowledge on the applications of data structure.
4. Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
5. Formulate new solutions for programming problems or improve existing code using learned algorithms and data structures.

CSCP309 OBJECT ORIENTED PROGRAMMING LAB

Course Outcomes :

At the end of this course, the students will be able to

1. Develop solutions for a range of problems using objects and classes using C++ and Java.
2. Use the Java SDK environment to create, debug and run simple Java programs.
3. Demonstrate how to achieve reusability using inheritance, interfaces and packages.
4. Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading.
5. Be able to write computer programs to solve real world problems in Java and C++.

CSBS401 DISCRETE MATHEMATICS

Course Outcomes :

At the end of this course, the students will be able to

1. Acquire the basic concepts in Mathematical Logic and theory of inferences.
2. Understand the concepts of Set theory, Relations and equivalence classes with matrix representation.
3. Familiarize Lattice theory, Boolean algebra and Group theory.
4. Design coding and encoding group codes concept.
5. Understand the basic concepts of Graph theory, Eulerian and Hamiltonian graphs .

CSES402 DESIGN AND ANALYSIS OF ALGORITHMS

Course Outcomes :

1. For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.
2. Describe the greedy paradigm and explain when an algorithmic design situation calls for it.
3. Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.
4. Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it.
5. Develop the dynamic programming algorithms, and analyze it to determine its computational complexity.

CSPC403 DATABASE MANAGEMENT SYSTEM

Course Outcomes :

At the end of this course, the students will be able to

1. Differentiate database systems from file systems by enumerating the features provided by database systems.
2. Analyze data storage problem and derive a data model using E-R Diagrams.
3. Formulate the solutions to a broad range of query and data update problems using SQL.
4. Understand the normalization theory and apply such knowledge to the normalization of a database.
5. Inculcate the various implementation techniques and current trends.

CSPC404 OPERATING SYSTEMS

Course Outcomes:

At the end of this course, the students will be able to

1. Create processes and threads.
2. Develop algorithms for process scheduling for a given specification of CPU utilization, Throughput, Turnaround Time, Waiting Time, Response Time.
3. For a given specification of memory organization develop the techniques for optimally allocating memory to processes by increasing memory utilization and for improving the access time.
4. Design and implement file management system.
5. For a given I/O devices and OS (specify) develop the I/O management functions in OS as part of a uniform device abstraction by performing operations for synchronization between CPU and I/O controllers.

CSPC405 PYTHON PROGRAMMING

Course Outcomes:

At the end of this course, the students will be able to

1. Gain knowledge about the basic concepts of python programming.
2. Solve the basic design problems using object and classes.
3. Able to demonstrate systematic knowledge of backend and front end by developing an appropriate application.
4. Understand the principles of File operation.
5. Obtain the knowledge of DBM and SQL databases from python.

CSPC406 COMPUTER ORGANIZATION AND ARCHITECTURE**Course Outcomes**

At the end of this course, the students will be able to

1. Understand the functional Units of a computer, bus organizations and addressing modes.
2. Design and analyze the pipelining concepts.
3. Knowledge about the principles Hazards.
4. Analyze RAM, ROM, Cache memory and virtual memory concepts.
5. Evaluate the various I/O interfaces.

CSCP407 DATABASE MANAGEMENT SYSTEMS LAB**Course Outcomes:**

At the end of this course, the students will be able to

1. Design and implement a database schema for a given problem-domain.
2. Populate and query a database using SQL DML/DDDL commands.
3. Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS.
4. Applying PL/SQL for processing database.
5. Analyze front end tools to design forms, reports and menus.

CSCP408 OPERATING SYSTEMS LAB**Course Outcomes :**

At the end of this course, the students will be able to

1. Choose the best CPU scheduling algorithm for a given problem instance.
2. Identify the performance of various page replacement algorithms.
3. Develop algorithm for deadlock avoidance, detection and file allocation strategies.
4. Use disk management and disk scheduling algorithms for better utilization of external memory.
5. Experiment with Unix commands and shell programming.

CSCP409 PYTHON PROGRAMMING LAB**Course Outcomes :**

At the end of this course, the students will be able to

1. Create, debug and test a software application using python programming language.
2. Understand and implement modular approach using python.
3. Develop real world applications using oops and exception handling provided by python.
4. Understand the concepts of file I/O and be able to read data from a text file using Python.
5. Plot data using appropriate Python visualization libraries.

CSPC501 THEORY OF COMPUTATION

Course Outcomes:

At the end of this course, the students will be able to

1. Design Finite state Machine, Pushdown Automata.
2. The decidability or undecidability of various problems.
3. The concept of different types of grammars.
4. Knowledge about Recursive Function.
5. Understand the principle of Turing Machine.

CSPC502 COMPUTER GRAPHICS AND MULTIMEDIA

Course Outcomes:

At the end of this course, the students will be able to

1. Design 2D and 3D graphical structures.
2. Apply 2D and 3D transformations.
3. Implement clipping techniques.
4. Create graphical structures using OpenGL.
5. Gain knowledge of multimedia systems.

CSCP503 COMPUTER NETWORKS

Course Outcomes :

At the end of this course, the students will be able to

1. Explain the functions of the different layer of the OSI Protocol.
2. Draw the functional block diagram of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) describe the function of each block.
3. For a given requirement (small scale) of wide-area networks (WANs) local area networks (LANs) and wireless LANs (WLANs) design it based on the market available component.
4. For a given problem related TCP/IP protocol developed the network programming.
5. Configure DNS DDNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP,SNMP, Bluetooth, Firewalls using open source available software and tools.

CSPC504 MICROPROCESSORS

Course Outcomes :

At the end of this course, the students will be able to

1. Develop the 8086 based assembly language programs for different applications.
2. Familiarize the architecture and instruction set of various advanced processors.
3. Acquire knowledge in interfacing the memory and I/O devices with microprocessor.
4. Design 8051 microcontroller based computing systems.
5. Knowledge about ADC and DAC.

CSCP507 COMPUTER GRAPHICS AND MULTIMEDIA LAB**Course Outcomes:**

At the end of this course, the students will be able to

1. To understand the various computer graphics hardware and display technologies
2. 2D and 3D viewing technologies.
3. Various 2D and 3D objects transformation techniques.
4. To understand the multimedia concepts for animation.
5. Design and implement computer animation with morphing.

CSCP508 COMPUTER NETWORKS LAB**Course Outcomes :**

At the end of this course, the students will be able to

1. Execute and Evaluate Network Administration Commands.
2. Demonstrate the Installation and Configuration of Network Simulator.
3. Implement the Socket programming for Client Server Architecture.
4. Analyze the Packet Contents of different Protocols.
5. Implementation of the routing Protocols..

CSCP509 MICROPROCESSORS LAB**Course Outcomes :**

At the end of this course, the students will be able to

1. Write Assembly level programs using the 8085 and 8086 instruction set.
2. Write modular programs using procedures and macros.
3. Interface 8086 to 8255, Keyboard, display and stepper motors.
4. Generate waveforms using Microprocessors.
5. Simulate traffic light control signal.

CSPC601 COMPILER DESIGN**Course Outcomes :**

At the end of this course, the students will be able to

1. For a given grammar specification develop the lexical analyser.
2. For a given parser specification design top down and bottom-up parsers.
3. Develop syntax directed translation schemes.
4. Develop algorithms to generate code for a target machine.
5. Develop algorithms for intermediate code

CSPC602 SOFTWARE ENGINEERING

Course Outcomes :

At the end of this course, the students will be able to

1. Comprehend the basic elements of Software Project Models.
2. Visualize the significance of the different kind of Software Testing methods.
3. Explore the various Management methods in Software Development Projects.
4. Analyze the strategies in Software Designing.
5. Knowledge about Risk Management in Software Engineering.

CSCP607 COMPILER DESIGN LAB

Course Outcomes:

At the end of this course, the students will be able to

1. Understand the Lexical Analyzer Operation.
2. Implementation of language Recognizer.
3. Implementation of Various Parsers.
4. Implementation of Code Optimization.
5. Construction Symbol tables.

CSCP608 SOFTWARE ENGINEERING LAB

Course Outcomes :

At the end of this course, the students will be able to

1. Investigate the Reasons for Bugs and Analyze the principles in Software Testing.
2. Implement various Test Processes for Quality Improvement.
3. Design Test Planning.
4. Apply the Software Testing Techniques in Commercial Environment.
5. Manage the Test Processes and Track the Progress of a Project.

ETHS701 ENGINEERING ETHICS

Course Outcomes:

At the end of this course, the students will be able to

1. Understand the relationship between the engineer and the society.
2. Learn the importance of codes in engineering practice.
3. Acquire knowledge on the legal, moral and ethical aspects in engineering.
4. Understand the Risk analysis in Ethics.
5. Knowledge about Collegiality and Loyalty

CSPC702 EMBEDDED SYSTEMS AND INTERNET OF THINGS(IOT)

Course Outcomes :

At the end of this course, the students will be able to

1. Recognize the key features of embedded systems in terms of computer hardware and be able to discuss their functions.

2. Know the extra-functional that are imposed on embedded systems.
3. Identify the key factors affecting the evolution of computing hardware.
4. Understand the concepts of IoT and IoE.
5. Analyze basic protocols in wireless sensor network.

CSCP706 EMBEDDED SYSTEM AND INTERNET OF THINGS (IoT) LAB

Course Outcomes:

At the end of this course, the students will be able to

1. Comprehend the basic elements of Microcontroller and their Programming.
2. Knowledge of Various Sensors.
3. Knowledge of Raspberry Pi3 in Peripheral and in Trouble shooting.
4. Evaluate networking technologies for application within IoT.
5. Identify the Kits required for solving the Real World Problem and to write the Code.

CSST707 INDUSTRIAL TRAINING/RURAL INTERNSHIP/ INNOVATION/ENTREPRENEURSHIP

Course outcomes :

At the end of this course, the students will be able to

1. Take up any challenging practical problems and find solution by formulating proper methodology.
2. Carry out any experiment based on Computer software and Hardware available.
3. Present the conclusions with understandability using appropriate tables and graph in the form of report.
4. Analyses any short coming while implementing a technical problem and to handle the same.
5. Implement any research problem in current thrust area using the gained practice knowledge.

CSPESCN PERL PROGRAMMING

Course Outcomes:

At the end of this course, the students will be able to

1. Ability to apply prerequisite basic programming concepts to Perl.
2. Write, compile, and run Perl programs, analyze the effects of using Perl structures that implement decisions, loops, and store arrays and use these structures in a well-designed, OOP program.
3. Create Perl programs that make use of various directories and use several files linked together.
4. Understand the concepts of Subroutines.
5. Knowledge about the Files.

CSPESCN VISUAL PROGRAMMING

Course Outcomes :

At the end of this course, the students will be able to

1. Understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
2. Describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE).
3. Create applications using Microsoft Windows Forms.
4. Understand the concepts of XML.

5. Knowledge about the classes.

CSPECSN WEB TECHNOLOGY

Course Outcomes :

At the end of this course, the students will be able to

1. Develop web pages using basic HTML.
2. Apply XML techniques in web design.
3. Implement CGI using Perl.
4. Implement PHP & MySQL database connectivity for real world applications.
5. Use AJAX with Rails.

CSPECSN REAL TIME SYSTEMS

Course Outcomes :

At the end of this course, the students will be able to

1. Apply formal software engineering methods and practices to the design, analysis and development of several small real-time systems.
2. Characterize various real-time approaches for reliability and fault tolerance issues.
3. Acquire the basic programming skills in the development of real-time computing systems.
4. Understand the general purpose and full featured real-time operating systems.
5. Characteristics of Memory Management

CSPECSN MOBILE APP DEVELOPMENT

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the existing state of mobile app development via researching existing apps, meeting with industry professionals, and formulating new ideas.
2. Display proficiency in coding on a mobile programming platform.
3. Understand the limitations and features of developing for mobile devices.
4. Create a complete Mobile app with a significant programming component, involving the sensors and hardware features of the phone.
5. Understand the economics and features of the app marketplace by offering the app for download.

CSPECSN DISTRIBUTED SYSTEMS

Course Outcomes :

At the end of this course, the students will be able to

1. Acquiring Knowledge on foundations of Distributed System.
2. Familiarizing the idea of peer to peer services and file system.
3. Familiarizing the components and support required for distributed system.
4. Acquiring Knowledge on remote method invocation and objects.
5. Gaining experienced skills on design process and resource management systems.

CSPECSN SOFTWARE TESTING AND QUALITY ASSURANCE

Course Outcomes :

At the end of this course, the students will be able to

1. Techniques and skills on use of modern software testing tools to support software testing projects.
2. Planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generating a test report.
3. Advanced software testing topics, such as object-oriented software testing methods, and component-based software testing issues, challenges, and solutions.
4. Knowledge of Software Quality.
5. Understand the concepts of Qualification and Validation.

CSPECSN MOBILE COMPUTING

Course Outcomes:

At the end of this course, the students will be able to

1. Understand the principles and concepts of mobile communication.
2. Analyze and compare the multiplexing techniques.
3. Describe the architecture of GSM.
4. Understand the protocol architecture of Bluetooth and HIPERLAN.
5. Knowledge of TCP Protocol.

CSPECSN CRYPTOGRAPHY AND NETWORK SECURITY

Course Outcomes:

At the end of this course, the students will be able to

1. Understand the concepts of Computer Security, Cryptography, Symmetric Key Algorithms, AES, Asymmetric Key Algorithms- Digital Signatures, RSA.
2. Understand the Digital Certificates, Public Key Infrastructure (PKI).
3. Understand the Network Security, Firewalls and Virtual Private Networks and Internet Security Protocols.
4. Understand the concepts of 3G.
5. Knowledge about Secure Electronic Transaction and Secure Socket Layer.

CSPECSN PERVASIVE COMPUTING

Course Outcomes:

At the end of this course, the students will be able to

1. Develop an attitude to propose solutions with comparisons for problems related to pervasive computing system through investigation.
2. Gives knowledge about the strengths and limitations of the tools and devices for development of pervasive computing systems.
3. Discovers the characteristics of pervasive computing applications including the major system components and architectures of the systems.
4. Knowledge about WAP infrastructure.
5. Understand about interface.

CSPECSN ADHOC AND SENSOR NETWORKS

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the principles of mobile ad hoc networks (MANETs) and what distinguishes them from infrastructure-based networks.
2. Analyze the protocol design issues of ad hoc and sensor networks.
3. Understanding the principles and characteristics of wireless sensor networks.
4. Knowledge of the current topics in MANETs and WSNs, both from an industry and research point of view.
5. Knowledge about the Hybrid Wireless Networks.

CSPECSN DIGITAL IMAGE PROCESSING

Course Outcomes:

At the end of this course, the students will be able to

1. Understand the basic image enhancement techniques in spatial & frequency domains.
2. Understand the basic multi-resolution techniques.
3. Understand the basic of segmentation methods.
4. Apply this concept for image handling in various fields.
5. Knowledge about Morphological operations

CSPECSN MACHINE LEARNING

COURSE OUTCOMES :

At the end of this course, the students will be able to

1. Understand the basic concepts of machine learning
2. Understand the classification, clustering and regression algorithms
3. Implement the classification, clustering and regression algorithms
4. Combine the evidence from two or more models/methods for designing a system.
5. Design and implement a method for solving real life problem using a suitable machine learning technique

CSPECSN DIGITAL SIGNAL PROCESSING

COURSE OUTCOMES :

At the end of this course, the students will be able to

1. Design both analog and digital filters.
2. Design DSP processors.
3. Do projects in Signal processing, Image processing and Speech Processing.
4. Understand the Multirate signal processing.
5. Knowledge about quantization.

CSPECSN CLOUD COMPUTING

Course Outcomes :

At the end of this course, the students will be able to

1. Identify the fundamentals and technologies of cloud computing.
2. Address different cloud architectures and cloud services.
3. Explore various applications by integrating the cloud services.
4. Fundamentals of Web services.
5. Knowledge about Cloud Platform.

CSPECSN SPEECH PROCESSING AND SYNTHESIS

Course Outcomes:

At the end of this courses Students will able to

1. Understand the basic characteristics of speech signals.
2. Recall various feature extraction techniques used in many speech related projects.
3. Understand the algorithms for speech models.
4. Develop a speech recognition system.
5. Work on various speech based applications in their projects.

CSPECSN INFORMATION RETRIEVAL TECHNIQUES

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the basics of Information Retrieval and its models.
2. Use an open source search engine framework and explore its capabilities.
3. Apply appropriate method of classification or clustering.
4. Design and implement innovative features in a search engine.
5. Design and implement a recommender system.

CSPECSN DATA MINING

Course Outcomes :

At the end of this course, the students will be able to

1. Evolve Multidimensional Intelligent model from typical system.
2. Discover the knowledge imbibed in the high dimensional system.
3. Evaluate various mining techniques on complex data objects.
4. Evaluate the performance of different data-mining algorithms
5. Understand and apply the data mining techniques ,such as text mining and web mining

CSPECSN WEB APPLICATION FRAMEWORK

Course Outcomes :

At the end of this course, the students will be able to

1. Able to understand Rails framework and also know program constructs in Ruby.
2. Able to develop application in Ruby on Rail.
3. Acquire knowledge about Object-Relational Mapping with ActiveRecord.
4. Apply knowledge to deploy Rails.

5. Understand the knowledge of Protocol

CSPECSN OPEN SOURCE PROGRAMMING

Course Outcomes :

At the end of this course, the students will be able to

1. Understand the fundamentals of Linux operating system.
2. Describe the working of PHP programming.
3. Elucidate the concepts of file handling and database programming in PHP.
4. Analyze the basic concepts in Python.
5. Explain the programming concepts of files and error handling using Python.

CSPECSN SOFT COMPUTING TECHNIQUES

Course Outcomes:

At the end of this course, the students will be able to

1. Apply various soft computing frame works.
2. Design various neural networks.
3. Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.
4. Apply genetic algorithms to combinatorial optimization problems.
5. Applications of soft computing to solve problems in varieties of application domains

CSOESCN INTERNET OF THINGS

Course outcomes :

At the end of this course, the students will be able to

1. Understand the concepts of Internet of Things.
2. Analyze basic protocols in wireless sensor network.
3. Design IoT applications in different domain and be able to analyze their performance.
4. Implement basic IoT applications on embedded platform.
5. Explore IoT using Raspberry Pi and Arduino.

CSOESCN ENTERPRISE RESOURCE PLANNING

Course outcomes:

At the end of this course, the students will be able to

1. Design and develop ERP implementation cycle.
2. Have awareness of core and extended units of ERP.
3. Know about the business units of ERP.
4. Know about different ERP vendors.
5. Understand the latest implementation methodologies of ERP.

CSOESCN E- COMMERCE

Course Outcomes :

At the end of this course, the students will be able to

1. Identify and analyze the construction and working principles of E-Commerce.
2. Develop and implement the Electronic Payment Systems and EDI.
3. Select suitable Computer based Education and Training.

4. Understand Web marketing approaches and elements of branding.
5. Understand the software agents and the technology behind the agents.

CSOESCN SUPPLY CHAIN MANAGEMENT

Course Outcomes :

At the end of this course, the students will be able to

1. Acquire fundamental concepts in Supply Chain Management.
2. Build a competitive supply chain using strategies, models, techniques and information technology
3. Know about current trends in Supply Chain Management
4. Manage a competitive supply chain using models, techniques and information technology
5. How to align the management of a supply chain with corporate goals and strategies.

CSOESCN CYBER FORENSICS

Course Outcomes :

At the end of this course, the students will be able to

1. Identify the present indicators that a Cyber Security incident has occurred.
2. Collect, Process, Analyze, and present Computer Forensic Evidence.
3. Apply Criminal Justice Methods to Cyber Security and Computer Forensic Investigations.
4. Work in teams to analyze and resolve Cyber Security issues.
5. To identify methods for data recovery and to apply the methods for preservation of digital evidence

CSOESCN SYSTEM MODELING AND SIMULATION

Course outcomes :

At the end of this course, the students will be able to

1. Acquire knowledge of Simulation Terminologies and Classification.
2. Familiarize the idea of Mathematical Models.
3. Familiarize the Simulation Data.
4. Gain experience skills on Verification and Validation of Simulation Models.
5. Familiarize on Simulation Tools and Simulation Project Management.

CSOESCN BIG DATA ANALYTICS

Course Outcomes :

At the end of this course, the students will be able to

1. Understand fundamental techniques and tools required for data analytics.
2. Use basic tools for statistical analysis, R, Hadoop, and key methods used in machine learning.
3. Apply MapReduce techniques for parallel processing.
4. Apply fundamental algorithmic ideas to process data, and apply hypotheses and data into actionable predictions.
5. Document and transfer the results, and effectively communicate the findings using visualization techniques.

CSOESCN SOCIAL NETWORK ANALYSIS

Course Outcomes :

At the end of this course, the students will be able to

1. Know basic notation and terminology used in network science.
2. Work on the internal components of the social network.
3. Model and visualize the social network.
4. Understand the behaviour of the users in the social network.
5. Be able to visualize social networks through various representation.

Semester I

CSCSPC11 - ADVANCED DATA STRUCTURES

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the implementation of symbol table using hashing techniques.
2. Develop and analyze algorithms for red-black trees, B-trees and Splay trees.
3. Build algorithms for text processing applications.
4. Identify suitable data structures and develop algorithms for computational geometry problems.
5. Implement algorithms related to computational geometry problems

CSCSPC12 MACHINE LEARNING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the basic concepts of machine learning.
2. Employ the classification, clustering and regression algorithms.
3. Apply the deep learning architectures.
4. Implement a method for solving real life problem using a suitable machine learning technique.
5. Apply recent in various learning techniques of machine learning and classification methods for solving real world problems

CSCSMC15 RESEARCH METHODOLOGY AND IPR

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand research problem formulation. Analyze research related information.
2. Follow research ethics.
3. Understand IPR and to promote among students.
4. Create investment in R & D, which leads to creation of new and better products, and in turn to bring economic growth and social benefits.
5. Generate novel developments in IPR systems.

CSCSCP16 ADVANCED DATA STRUCTURES LAB

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand to design and analyze the time and space efficiency of the data structure.
2. Understand and capable to identify the appropriate data structure for given problem.
3. Understand the practical knowledge on the application of data structures.
4. Understand the need of developing graphics applications.

5. Learned algorithmic development of graphics primitives like: line, circle, ellipse, polygon etc. and the representation and three dimensional transformations.

CSCSPC21 ANALYSIS OF ALGORITHMS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Analyze the complexity/performance of different algorithms.
2. Determine the appropriate data structure for solving a particular set of problems.
3. Categorize the different problems in various classes according to their complexity.
4. Have an insight of recent activities in the field of the advanced data structure.
5. Analyze the feasibility of the linear programming techniques by applying recently proposed data structures.

CSCSPC22 EMBEDDED CONTROL SYSTEMS AND INTERNET OF THINGS (IoT)

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Recognize the key features of embedded systems in terms of computer hardware and be able to discuss their functions.
2. Aware of the key factors in embedded system design and development.
3. Explain the special extra-functional that are imposed on embedded systems.
4. Design a portable IoT using Arduino/ equivalent boards and relevant protocols.
5. Develop web services to access/control IoT devices

CSCSCP26 EMBEDDED CONTROL SYSTEMS AND INTERNET OF THINGS (IoT) LAB

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the basic concepts of IoT.
2. Design and implement IoT techniques to solve the real world problems.
3. Implement solution methods on humanoid PC software, humanoid android App, Arduino, BISOFT PC software.
4. Develop applications in 8051 in Keil IDE.
5. Design and implement embedded solution using ARM (LPC2148)ARM (LPC2148) ARM (LPC2148) ARM (LPC2148)ARM (LPC2148)ARM (LPC2148)ARM (LPC2148) .

CSCSTS27 INDUSTRIAL TRAINING AND SEMINAR / MINI PROJECT

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Analyze a given Computer Science and Engineering problem and to identify and implement appropriate problem solving methodology to propose a meaningful solution.
2. Face the audience and to interact with them confidently.
3. Tackle any problem during group discussion in the corporate interviews.
4. Acquire the ability to work in the actual environment and to use the technical resources.

5. Analyse any short coming while implementing a technical problem and to handle the same.

CSCSPV33 PROJECT WORK AND VIVA-VOCE PHASE-I

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Conduct independent empirical research to evaluate and present their results responsibly and critically.
2. Present the conclusions with understandability using appropriate tables and graphs in the form of report.
3. Maintain the ethical standards of scientific research and to follow the basic principles in an academic community that requires constant learning and knowledge updation.
4. Analyse any short coming while implementing a technical problem and to handle the same.
5. Implement any research problem in the current thrust area using the gained practical knowledge.

CSCSPV41 PROJECT WORK AND VIVA-VOCE PHASE-II

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Conduct independent empirical research to evaluate and present their results responsibly and critically.
2. Present the conclusions with understandability using appropriate tables and graphs in the form of report.
3. Maintain the ethical standards of scientific research and to follow the basic principles in an academic community that requires constant learning and knowledge updation.
4. Analyse any short coming while implementing a technical problem and to handle the same.
5. Implement any research problem in the current thrust area using the gained practical knowledge.

Program electives

CSCSPEXX WIRELESS AND MOBILE NETWORKS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Demonstrate advanced knowledge of networking and wireless networking and understand various types of wireless networks, standards, operations and use cases.
2. Be able to design WLAN, WPAN, WWAN, Cellular based upon underlying propagation and performance analysis.
3. Demonstrate knowledge of protocols used in wireless networks and learn simulating wireless networks.

4. Design wireless networks exploring trade-offs between wire line and wireless links. Develop mobile applications to solve some of the real world problems.
5. Devise network and security applications by applying recent techniques.

CSCSPEXX COMPUTER VISION

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Implement computer graphics techniques required for computer vision.
2. Apply the concepts of visible and illumination methods.
3. Implement 3D vision techniques.
4. Develop computer vision algorithms.
5. Design and implement pattern matching techniques.

CSCSPEXX ADVANCED IMAGE PROCESSING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Acquire knowledge of principles of digital image processing.
2. Solve problems pertaining to the field of image acquisition, preprocessing, Fourier domain processing.
3. Perform basic image restoration, image segmentation and image compression.
4. Provide the foundations for life-long learning and continual professional development in the areas of image applications.
5. Interpret various image compression standards

CSCSPEXX WIRELESS SENSOR NETWORKS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Describe and explain radio standards and communication protocols for wireless sensor networks.
2. Explain the function of the node architecture and use of sensors for various applications.
3. Obtain familiarity with architectures, functions and performance of wireless sensor networks systems and platforms.
4. Demonstrate various security related issues in routing protocols.
5. Utilise the knowledge gained in relevant advanced topics in wireless sensor networks.

CSCSPEXX KNOWLEDGE BASED SYSTEMS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Demonstrate knowledge of the fundamental principles of intelligent systems.
2. Analyze and compare the relative merits of a variety of AI problem solving techniques.
3. Understand the reasoning and learning techniques under uncertainty.
4. Be aware of general competence in implementing knowledge based engineering.
5. Understand the effect of knowledge based engineering and the overall understanding of the whole process.

CSCSPEXX DISTRIBUTED SYSTEMS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Design trends in distributed systems.
2. Apply network virtualization.
3. Employ remote method invocation and objects.
4. Describe the reliability techniques and concurrency control in DDBs.
5. Apply distributed computing environment and parallel architecture techniques.

CSCSPEXX WEB ENGINEERING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand web engineering concepts.
2. Compare different web application architectures and models.
3. Apply design technique to develop web applications.
4. Compare various testing approaches.
5. Apply guidelines to manage web applications.

CSCSPEXX DATA PREPARATION AND ANALYSIS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Work in a business environment in which data preparation occurs.
2. Prepare data marts for statistical analysis.
3. Read data from databases and clean the data for statistical analysis.
4. Develop strategies for dealing with imperfect real world data.
5. Understand ethics in the profession.

CSCSPEXX SECURE SOFTWARE DESIGN AND ENTERPRISE COMPUTING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Differentiate various software vulnerabilities.
2. Understand software process vulnerabilities for an organization.
3. Monitor resources consumption in a software.
4. Interrelate security and software development process.
5. Manage and troubleshoot a enterprise network and to manage them.

CSCSPEXX GRAPHICS PROCESSING UNIT (GPU) COMPUTING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Implement concepts in parallel programming.
2. Synchronize CPU and GPU Functions.

3. Debug and profile parallel programs.
4. Apply multi GPU concepts.
5. Design programs for concurrent Data Structures such as Worklists.

CSCSPEXX DIGITAL FORENSICS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand relevant legislation and codes of ethics.
2. Appreciate Computer forensics, digital detective and various processes.
3. Apply policies and procedures in E-discovery, guidelines and standards, E-evidence, tools and environment.
4. Design web forensics and network forensics.
5. Understand the legal aspects of digital forensics

CSCSPEXX MOBILE APPLICATIONS AND SERVICES

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Identify the target platform and users and be able to define and sketch a mobile application.
2. Understand the fundamentals, frameworks, and development lifecycle of mobile application platforms including iOS, Android, and PhoneGap.
3. Design and develop a mobile application prototype in one of the platform (challenge project).
4. Select appropriate data transmission standards in terms of social competence.
5. Understand the need for continuous improvement of his/her skills due to the rapidly changing environment of mobile devices.

CSCSPEXX OPTIMIZATION TECHNIQUES

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Formulate optimization problems.
2. Understand and apply the concept of optimality criteria for various types of optimization problems.
3. Solve various constrained and unconstrained problems in Single variable as well as multivariable.
4. Evaluate and measure the performance of an algorithm.
5. Investigate, study, develop and organise innovative solutions for various applications.

CSCSPEXX DATA MINING AND WAREHOUSING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Learn about the fundamentals of data mining.
2. Discover the knowledge imbedded in the high dimensional system.
3. Cluster the high dimensional data for better organization of the data.
4. Apply the Predictive Modelling techniques for mining the data.
5. Study the various mining applications and tools.

CSCSPEXX SPEECH AND AUDIO SIGNAL PROCESSING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Acquired knowledge of speech production and auditory perception
2. Understand the time and frequency domain analysis of speech.
3. Acquired knowledge on various parameters of speech.
4. Ability to develop systems for various applications of speech processing.
5. Study and interpret the parametric representation of speech..

CSCSPEXX NETWORK AND INFORMATION SECURITY

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Realize basic security algorithms for a computing system.
2. Analyze the vulnerabilities in any computing system and consequently be capable to design a security justification.
3. Recognize the security issues in the network and resolve it.
4. Evaluate security means using exact approaches, together with theoretical root, modeling, and simulations.
5. Understand authentication requirements of various security protocols

CSCSPEXX DIGITAL VIDEO PROCESSING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Exhibit sufficient understanding of video processing including video representation, video filtering and video compression.
2. Demonstrate the program basic video processing operations using the MATLAB.
3. Develop a complete video processing system to achieve a specific task and analyze and interpret the system.
4. Get sufficient understanding of digital video compression and its relevant processing tasks.
5. Evaluate more advanced or future video compression technologies and multimedia application systems that exploit compressed video

CSCSPEXX MEDICAL IMAGE PROCESSING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Acquire depth knowledge about the various medical image processing techniques
2. Attain practical knowledge in medical Imaging.
3. Perform research works in the area of medical imaging
4. Gain knowledge about how to extract, model, and analyze information from medical data and applications in order to help diagnosis, treatment and monitoring of diseases through computer science.
5. Analyse and implement medical imaging validation, Computer Aided Diagnosis / Diagnostic Support System.

CSCSPEXX MOBILE ADHOC NETWORKS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the knowledge of Ad Hoc networking basics and Architecture.
2. Implement Ad hoc routing protocols and analyzing the performances of Protocols.
3. Recognize wireless sensor networks basics and routing methods.
4. Design and implement the Mesh networks with MAC enhancements.
5. Understand implement the principles of mobile ad hoc networks and to understand the implications on data transmission delay and bandwidth consumption.

CSCSPEX COMPUTER NETWORK ENGINEERING AND MANAGEMENT**COURSE OUTCOMES :**

After the completion of the course, the students will be able to

1. Classify network services, protocols and architectures.
2. Knowledge on key Internet applications and their protocols.
3. Ability to develop their own applications using the sockets API.
4. Practical knowledge gained by hands-on sessions.
5. Gain the knowledge of application layer protocol.

CSCSOEXX DATA SCIENCE**COURSE OUTCOMES:**

After the completion of the course, the students will be able to

1. Explain how data is collected, managed and stored for data science.
2. Understand the key concepts in data science, including their real-world applications and the toolkit used by data scientists.
3. Implement data collection and management scripts using MongoDB.
4. Apply data visualization techniques and data encodings.
5. Implement recent trends in various data collection and analysis techniques.

CSCSOEXX INTERNET OF THINGS (IoT)**COURSE OUTCOMES:**

After the completion of the course, the students will be able to

1. Design a portable IoT using Arduino/ equivalent boards and relevant protocols.
2. Develop web services to access/control IoT devices.
3. Deploy an IoT application and connect to the cloud.
4. Analyze applications of IoT in real time scenario.
5. Design IoT based prototypes.

CSCSOEXX BIG DATA ANALYTICS**COURSE OUTCOMES:**

After the completion of the course, the students will be able to

1. Categorize and summarize big data and its importance.
2. Differentiate various big data technologies like Hadoop, MapReduce, Hadoop Ecosystem, R, and No-SQL.

3. Apply tools and techniques to analyze big data.
4. Earn tips and tricks for big data use cases and solutions.
5. Apply and analyse statistical models in R using data visualization techniques.

CSCSOEXX CLOUD COMPUTING TECHNOLOGIES

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
2. Identify the architecture, infrastructure and delivery models of cloud computing.
3. Explain the core issues of cloud computing such as security, privacy and interoperability.
4. Choose the appropriate technologies, algorithms and approaches for the related issues.
5. Develop map reduce applications.

CSCSOEXX ADVANCED WEB DESIGN

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Design and develop web applications using various models.
2. Develop Web applications using HTML and scripting technologies with advanced features.
3. Acquire knowledge of security features supported in Java.
4. Develop web services using J2EE and related technologies.
5. Implement advanced frameworks, MVC frameworks and spring frameworks.

CSCSOEXX HUMAN AND COMPUTER INTERACTION

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the requirements and specifications for the interaction design.
2. Analyze the evaluation techniques of human interaction.
3. Able to design an efficient and user friendly human computer interface.
4. Determine the most appropriate HCI methods to meet the needs of a practical software development project.
5. Analyse and implement cognitive models and Ubiquitous computing applications.

CSCSOEXX SOFT COMPUTING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Identify and describe soft computing techniques and their roles in building intelligent machines.
2. Apply fuzzy logic and reasoning to handle uncertainty and solve various engineering problems
3. Apply genetic algorithms to combinatorial optimization problems.

4. Evaluate and compare solutions by various soft computing approaches for a given problem.
5. Implement various applications of GA in Machine Learning.

Audit courses

CSCSACXX ENGLISH FOR RESEARCH PAPER WRITING

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Plan and prepare paragraphs without ambiguity and vagueness.
2. Check plagiarism and paraphrasing.
3. Review the literatures and write a good discussion on any topic.
4. Utilize the knowledge obtained to write a good research paper.

SCSACXX DISASTER MANAGEMENT

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Demonstrate the significance of natural and man-made disasters.
2. Gain knowledge about disaster prone areas in India.
3. Understand post-disaster diseases/epidemics and their remedies.
4. Assess disaster risk and mitigation.

CSCSACXX SANSKRIT FOR TECHNICAL KNOWLEDGE

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand basic Sanskrit language.
2. Study ancient Sanskrit literature about science & technology.
3. Use as a logical language to develop logic in students.

CSCSACXX VALUE EDUCATION

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Demonstrate knowledge of self-development.
2. Learn the importance of Human values.
3. Develop the overall personality.

CSCSACXX CONSTITUTION OF INDIA

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.

2. Know the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
3. Learn the circumstances surrounding the foundation of the Congress Socialist Party (CSP) under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
4. Discuss the passage of the Hindu Code Bill of 1956.

CSCSACXX PEDAGOGY STUDIES

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Understand pedagogical practices that are being used by teachers in formal and informal classrooms in developing countries.
2. Appreciate the evidence on the effectiveness of these pedagogical practices, conditions, and the population of learners.
3. Realise the teacher education (curriculum and practicum), the school curriculum and guidance materials that best support effective pedagogy.

CSCSACXX STRESS MANAGEMENT BY YOGA

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Know the definitions of eight parts of yoga.
2. Understand the Do's and don'ts in life.
3. Practice various yoga poses and realize their benefits.

CSCSACXX PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Study of Shrimad-Bhagwad-Geeta will help the student in developing his personality and achieve the highest goal in life.
2. Understand person who has studied Geeta, who will lead the nation and mankind to peace and prosperity.
3. Study of Neetishatakam will help in developing versatile personality of students.

Value added courses

CSCSVAXX INTRODUCTION TO DATA SCIENCE

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Identify and describe basic concepts in computers and operating system.
2. Understand and handle Internet facilities.
3. Describe the network protocols and network security systems.

4. Apply various basic data science concepts for a given problem.

CSCSVAXX ADVANCED DATA SCIENCE

COURSE OUTCOMES:

After the completion of the course, the students will be able to

1. Describe the basic concepts of Data Science.
2. Apply basic machine learning algorithms for predictive modeling.
3. Apply Exploratory Data Analysis and Data Science process in a case study.
4. Identify approaches used for Feature Generation and Feature Selection and use in applications.
5. Create effective visualization of given data.