MARATHA VIDYA PRASARAK SAMAJ'S

Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik

Permanently Affiliated to Savitribai Phule Pune University Vide Letter No. : CA/1542 & Approved by AICTE New Delhi - Vide Letter No. : 740-89-32 (E) ET/98 AISHE Code - C-41622

Department of Computer Engineering

Department Vision

To be the centre for excellence for training the world-class engineers to work with multidisciplinary domain based on the state-of-the-art of technology enabled academic system blended with industrial and business practices.

Department Mission

To educate and train undergraduate students in Computer Engineering by instilling excellence to fulfill professional and social requirements in business and industry on the platform of scientifically designed academic processes.

Program Educational Objectives

1.To inculcate computational and programming skills in the field of Computer Engineering.
2.To prepare the graduates to fulfil professional requirements in industry.
3.To motivate students to solve problems related to society

Program Outcomes

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 analyze 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 modeling 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	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: 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

PSO1	To demonstrate mathematical and Computer Engineering fundamentals.
PSO2	To adapt modern computer tools and technologies to solve Computer Engineering Problems
PSO3	To apply software engineering practices and standards for project management

Course Outcomes
(As per the Syllabus of 2019 Pattern)

SE Semester I

Subject Code : 210241 Subject Name: Discrete Mathematics	
C201.1	Solve problems by applying set theory, propositional logic and formal proof techniques.
C201.2	Illustrate problems logically by using function and relation models.
C201.3	Analyze numbers of possible outcomes using permutations and combinations

C201.4	Solve computing problems using appropriate graph algorithms.
C201.5	Solve computing problems using appropriate tree algorithms.
C201.6	Evaluate algebraic structures and coding theory

Subject Code : 210242   Subject Name: Fundamentals of Data Structures

C202.1	Select the algorithm design strategies and data structures for programming problems
C202.2	Discriminate sequential data structures to store and process data in problem solving
C202.3	Use appropriate searching and sorting technique for better efficiency
C202.4	Apply linked list data structure for solving problems
C202.5	Solve problems using stack data structure
C202.6	Apply queue data structure to solve problems

Subject Code : 210243   Subject Name: Object Oriented Programming

C203.1	Describe the principles of Object Oriented Programming (OOP) and fundamentals of OOP language C++
C203.2	Apply OOP concept of Inheritance and concept of Pointers
C203.3	Apply virtual functions and polymorphism in programming situations
C203.4	Illustrate basic concepts of files and streams for data handling
C203.5	Develop programming application to improve reusability and error handling

C203.6	Analyze and apply Standard Template Library (STL) to simplify applicability of OOP

Subject Code : 210244   Subject Name: Computer Graphics

C204.1	Apply mathematics to perform elementary computer graphics operations
C204.2	Apply the concepts of windowing and clipping algorithms to fill and clip polygons.
C204.3	Apply the core concepts of computer graphics, including transformation in two and three dimensions.
C204.4	Describe methods and techniques for Light, Color, Shading and Hidden Surfaces
C204.5	Apply mathematics using the concepts of Curves and Fractals for implementing computer graphics programs
C204.6	Develop the applications using the concepts of animation and gaming.

Subject Code : 210245   Subject Name: Digital Electronics and Logic Design

C205.1	Solve Boolean Expressions using K Map.
C205.2	Design combinational digital circuits.
C205.3	Design sequential digital circuits.
C205.4	Design simple digital system using ASM and PLD.
C205.5	Apply appropriate logic families IC packages as per the given design specifications.
C205.6	Illustrate organization and architecture of computer system

Subject Code : 210246   Subject Name: Data Structures Lab

C206.1	Write programs for linear data structures using arrays and linked list.
C206.2	Develop real time applications using Stack and Queue
C206.3	Write programs using searching and sorting techniques.

Subject Code : 210247   Subject Name: OOP and Computer Graphics Lab

C207.1	Apply the concepts like inheritance, polymorphism, exception handling and generic structures for implementing reusable programming.
C207.2	Apply the concept of file for storing and retrieving the data from secondary storages.
C207.3	Apply computer graphics algorithms for line-circle drawing, scan conversion and filling with the help of object oriented programming concepts.
C207.4	Apply algorithms based on the concept of windowing and clipping to fill and clip polygons.
C207.5	Apply logic to implement curves, fractals, transformation, animation and gaming programs.

Subject Code : 210248   Subject Name: Digital Electronics Lab

C208.1	Design and implement combinational circuit using different types of gates.
C208.2	Design and implement sequential digital circuits using Flip-flops.
C208.3	Design combinational and sequential circuits using different modelling styles of VHDL.
C208.4	Write the functionalities, properties and applicability of logic families and Microcontroller.

Subject Code : 210249   Subject Name: Business Communication Skills

C209.1	Demonstrate verbal/oral communication and listening skills
C209.2	Write precise briefs or reports and technical documents.
C209.3	Demonstrate skills in group discussion / meetings / interviews and deliver presentations.
C209.4	Explore goal/target setting, self-motivation and practicing creative thinking

Subject Code : 210250   Subject Name: Humanity and Social Science

C210.1	Discuss issues concerning humans and society
C210.2	Describe about their responsibilities towards society.
C210.3	Show sensitivity about issues regarding the social, cultural, economic and human aspects
C210.4	Discuss the nature of the individual, values, beliefs and the relationship between self and the community.

Subject Code : 210251   Subject Name: Audit Course –III (Social Awareness and Governance)

C211.1	Understand social issues and responsibilities as member of society.
C211.2	Apply social values and ethics in decision making at social or organizational level
C211.3	Promote obstacles in national integration and role of youth for National Integration
C211.4	Demonstrate basic features of Indian Constitution

Subject Code : 210251	Subject Name: Engineering Mathematics -III
C212.1	Solve higher order linear differential equations.
C212.2	Solve problems related to Fourier transform, Z –Transform to solve difference equation.
C212.3	Apply statistics methods like correlation, regression analysis in analyzing, interpreting experimental data.
C212.4	Apply Probability Distribution like binomial, Poisson, Normal for testing the given data.
C212.5	Solve algebraic and transcendental equations and system of linear equations using numerical techniques.
C212.6	Use Numerical methods to compute integration and differential equations.
Subject Code : 210252	**Subject Name: Data Structures and Algorithm**
C213.1	Apply hashing techniques for implementing data structures
C213.2	Solve problems based on tree data structure
C213.3	Solve problems based on graph data structure
C213.4	Implement OBST and AVL search trees
C213.5	Use efficient indexing methods and multiway search techniques to store and maintain data.
C213.6	Use functionalities related to file organization

Subject Code : 210253	Subject Name: Software Engineering
C214.1	Identify software process models for developing a software project
C214.2	Analyze software requirements to design the solutions for software.
C214.3	Determine the estimation for software projects and its scheduling.
C214.4	Apply design engineering in software project development.
C214.5	Identify and handle risk management and software configuration management
C214.6	Discuss software testing approaches for software verification and validation
Subject Code : 210254 Subject Name: Microprocessor	
C215.1	Use Assembly Language Programming to develop application.
C215.2	Explain processor architecture and bus cycles
C215.3	Explain memory management in 80386DX
C215.4	Describe architectural concepts like Protection in processor
C215.5	Explain multitasking and processor Mode in 80386DX
C215.6	Differentiate between microprocessors and microcontrollers
Subject Code : 210255 Subject Name: Principles of Programming Languages	
C216.1	Discuss the principles underlying the programming languages

C216.2	Explain structuring of program and programming paradigms
C216.3	Apply fundamental concepts in the object oriented programming using Java
C216.4	Develop application using inheritance, packages and exceptional handling in Java
C216.5	Demonstrate Multithreading in Java
C216.6	Develop a simple program using basic concepts of Functional and Logical programming paradigm.

Subject Code : 210256   Subject Name: Data Structures and Algorithm Lab

C217.1	Use the ADT/libraries, hash tables and dictionary to design algorithms for a specific problem
C217.2	Apply non linear data structures to solve real world complex problems.
C217.3	Apply algorithm design techniques for indexing, sorting, multi-way searching, file organization

Subject Code : 210257   Subject Name: Microprocessor Lab

C218.1	Apply addressing modes and 64 bit instruction set to implement assembly language programs
C218.2	Apply logic for processor mode of operation
C18.3	Explain the working of motherboard and its components.

Subject Code : 210258   Subject Name: Project Based Learning II

C219.1	Identify the real life problem from societal need point of view
C219.2	Choose and compare alternative approaches to select most feasible

	one
C219.3	Analyze and synthesize the identified problem from technological perspective
C219.4	Design the reliable and scalable solution to meet challenges
C219.5	Evaluate the solution based on the criteria specified
C219.6	Inculcate long life learning attitude towards the societal problems

Subject Code : 210259   Subject Name: Code of Conduct

C220.1	Explain the basic perception of profession, professional ethics, various moral and social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
C220.2	Describe professional rights and responsibilities of an engineer for safety and risk benefit analysis
C220.3	Explain the impact of the professional Engineering solutions in societal and Environmental contexts, and also the knowledge of, and need for sustainable development.

Subject Code : 210260   Subject Name: Audit Course IV (Water Management)

C221.1	Understand the global water cycle and its various processes
C221.2	Understand climate change and their effects on water systems
C221.3	Understand Drinking water treatment and quality of groundwater and surface water
C221.4	Understand the Physical, chemical, and biological processes involved in water treatment and distribution.

TE Semester I

Subject Code : 310241	Subject Name: Database Management Systems	
C301.1	Develop E-R Model for given requirements and convert the same into database tables.
C301.2	Use database techniques SQL & PL/SQL.
C301.3	Discuss systematic database design approaches covering Relational Database Design.
C301.4	Illustrate transaction management in relational database System.
C301.5	Use NoSQL databases for processing unstructured data
C301.6	Differentiate between Complex Data Types and analyze the use of appropriate data types

Subject Code : 310242	Subject Name: Theory of Computation	
C302.1	Understand formal language, translation logic, essentials of translation, alphabets, language representation and apply it to design Finite Automata and its variants.
C302.2	Construct regular expression to present regular language and understand pumping lemma for RE.
C302.3	Design Context Free Grammars and learn to simplify the grammar.
C302.4	Construct Pushdown Automaton model for the Context Free Language.
C302.5	Devise Turing Machine for the different requirements outlined by theoretical computer science.
C302.6	Analyze different classes of problems and study concepts of NP completeness.

Subject Code : 310243	Subject Name: System Programming and Operating System
C303.1	Analyze basic assembler and its functionality.
C303.2	Analyze basic macro preprocessor and its functionality.
C303.3	Analyze the performance of linker and loader.
C303.4	Analyze the performance of process scheduling algorithms.
C303.5	Identify the mechanism to deal with deadlock and concurrency issues.
C303.6	Apply memory management techniques.

Subject Code : 310244	Subject Name: Computer Networks and Security
C304.1	Summarize fundamental concepts of Computer Networks, architectures and protocols
C304.2	Illustrate the working and functions of data link layer
C304.3	Analyze the working of different routing protocols and mechanisms
C304.4	Analyze data flow between TCP/IP model using Transport layer
C304.5	Illustrate Client-Server architectures and prototypes by means of correct standards and technology at application layer
C304.6	Understand the basics of Network Security

Subject Code : 310245 (A)	Subject Name: Internet of Things and Embedded Systems
C305A.1	Classify the fundamentals and need of Embedded systems for Internet of Things.

C305A.2	Apply IoT enabling technologies for developing IoT systems
C305A.3	Use design methodology for design and implementation of IoT applications
C305A.4	Analyze IoT protocols for making IoT devices communication
C305A.5	Use cloud platforms for IoT systems
C305A.6	Identify security issues in IoT applications.

Subject Code : 310245 (B)   Subject Name: Human Computer Interface

C305B.1	Design effective Human-Computer-Interfaces for all kinds of users.
C305B.2	Apply and analyze the user-interface with respect to golden rules of interface.
C305B.3	Analyze and evaluate the effectiveness of a user-interface design.
C305B.4	Implement the interactive designs for feasible data search and retrieval.
C305B.5	Analyze the scope of HCI in various paradigms like ubiquitous computing, virtual reality, multi-media, and World wide web related environments.
C305B.6	Analyze and identify user models, user support, and stakeholder requirements of HCI.

Subject Code : 310246   Subject Name: DBMS LAB

C306.1	Design E-R Model for given requirements and convert the same into database tables
C306.2	Implement SQL queries and PL/SQL code block for given requirements, using different SQL concepts

C306.3	Implement NoSQL queries using MongoDB
C306.4	Design and develop application considering actual requirements and using database concepts

Subject Code : 310247   Subject Name: CNS LAB

C307.1	Analyze the requirements of network types, topology and transmission media
C307.2	Demonstrate error control, flow control techniques and protocols and study them
C307.3	Show the subnet formation with IP allocation mechanism and apply various routing algorithms
C307.4	Develop Client-Server architectures and prototypes
C307.5	Implement web applications and services using application layer protocols
C307.6	Understand network security services and mechanisms

Subject Code : 310248   Subject Name: Laboratory Practice -I

C308.1	Implement language translators/ Design IoT and Embedded systems based applications/Implement the interactive designs for feasible data search and retrieval
C308.2	Implement internals and functionalities of Operating Systems / Design IoT applications based on cloud environment/ Analyze and identify user models, user support, socio-organizational issues, and stakeholder requirements of HCI systems

Subject Code : 310249   Subject Name: Seminar and Technical Communication

C309.1	Analyse a latest topic of professional interest and enhance technical writing skills.
C309.2	Communicate with professional and technical presentation skills.

Subject Code : 310250	Subject Name: Audit Course 5 (Cyber Security)	
C310.1	Understand and classify various cybercrimes and how criminals Plan for it	
C310.2	Understand various tools and methods used in cybercrime by various case studies.	

Subject Code : 310251	Subject Name: Data Science and Big Data Analytics
C311.1	Analyze needs and challenges for Data Science Big Data Analytics
C311.2	Apply statistics for Big Data Analytics
C311.3	Apply the lifecycle of Big Data analytics to real world problems
C311.4	Implement Big Data Analytics using Python programming
C311.5	Implement Big Data Analytics and model evaluation using algorithm.
C311.6	Design and implement Big Databases using the Hadoop ecosystem
Subject Code : 310252	Subject Name: Web Technology
C312.1	Implement behavior of web pages using HTML and CSS
C312.2	Apply the JavaScript and Jqueryclient side technologies for web development
C312.3	Analyze the concepts of Servlet

C312.4	Analyze the concepts of JSP, Web services and frameworks
C312.5	Apply the server side technologies for web development
C312.6	Create the effective web applications for business functionalities using latest web development platforms

Subject Code : 310253   Subject Name: Artificial Intelligence

C313.1	Identify and apply suitable Intelligent agents for various AI applications.
C313.2	Build smart system using different informed search / uninformed search or heuristic approaches.
C313.3	Identify knowledge associated and represent it by ontological engineering to plan a strategy to solve given problem.
C313.4	Apply the suitable algorithms to solve AI problems.
C313.5	Implement ideas underlying modern logical inference systems.
C313.6	Represent complex problems with expressive yet carefully constrained language of representation.

Subject Code : 310254A   Subject Name: Information Security

C314A.1	Model the cyber security threats and apply formal procedures to defend the attacks
C314A.2	Apply appropriate cryptographic techniques by learning key cryptography
C314A.3	Apply appropriate cryptographic techniques by learning asymmetric key cryptography
C314A.4	Design and analyze web security solutions by deploying various cryptographic techniques along with data integrity algorithms
C314A.5	Identify and Evaluate Information Security threats and vulnerabilities in Information systems and apply security measures to real time scenarios

C314A.6	Demonstrate the use of standards and cyber laws to enhance Information Security in the development process and infrastructure protection

Subject Code : 310254C   Subject Name: Cloud Computing

C314C.1	Understand the different Cloud Computing environment
C314C.2	Use appropriate data storage technique on Cloud, based on Cloud application
C314C.3	Analyze virtualization technology and install virtualization software
C314C.4	Develop and deploy applications on Cloud
C314C.5	Apply security in cloud applications
C314C.6	Use advance techniques in Cloud Computing

Subject Code : 310255   Subject Name: Internship

C315.1	To demonstrate professional competence through industry internship.
C315.2	To apply knowledge gained through internships to complete academic activities in a professional manner.
C315.3	To choose appropriate technology and tools to solve given problem.
C315.4	To demonstrate abilities of a responsible professional and use ethical practices in day to day life.
C315.5	Creating network and social circle, and developing relationships with industry people.
C315.6	To analyze various career opportunities and decide carrier goals.

Subject Code : 310256   Subject Name:Data Science and Big Data Analytics Laboratory

C316.1	Apply principles of Data Science for the analysis of real time problems
C316.2	Implement data representation using statistical methods
C316.3	Implement and evaluate data analytics algorithms
C316.4	Perform text preprocessing
C316.5	Implement data visualization techniques
C316.6	Use cutting edge tools and technologies to analyze Big Data

Subject Code : 310257   Subject Name: Web Technology Lab

C317.1	Understand the importance of website planning and website design issues
C317.2	Apply the client side and server side technologies for web application development
C317.3	Analyze the web technology languages, frameworks and services
C317.4	Create three tier web based applications

Subject Code : 310258   Subject Name: Laboratory Practice -II

C318.1	Design a system using different informed search / uninformed search or heuristic approaches
C318.2	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
C318.3	Design and develop an interactive AI application
C318.4	Use tools and techniques in the area of Cloud Computing

C318.5	Use cloud computing services for problem solving
C318.6	Design and develop applications on cloud
Subject Code : 310259 Subject Name: Audit Course 6 (Digital and Social Media Marketing)	
C319.1	Understand the fundamentals and importance of digital marketing
C319.2	Use the power of social media for business marketing

BE Semester I

Subject Code : 410241 Subject Name: Design and Analysis of Algorithms	
C401.1	Formulate the problem
C401.2	Analyze the asymptotic performance of algorithms
C401.3	Decide and apply algorithmic strategies to solve given problem
C401.4	Find optimal solution by applying various methods
C401.5	Analyze and Apply Scheduling and Sorting Algorithms
C401.6	Solve problems for multi-core or distributed or concurrent environments
Subject Code :410242 Subject Name: Machine Learning	
C402.1	Describe machine learning concepts

C402.2	Apply Preprocessing methods to prepare training data sets for machine learning.
C402.3	Solve problems using regression techniques.
C402.4	Solve problems using supervised machine learning algorithms.
C402.5	Differentiate learning models.
C402.6	Solve problems using unsupervised machine learning algorithms.

Subject Code : 410243   Subject Name: Blockchain Technology

C403.1	Interpret the fundamentals and basic concepts in Blockchain
C403.2	Compare the working of different blockchain platforms
C403.3	Use Crypto wallet for cryptocurrency based transactions
C403.4	Analyze the importance of blockchain in finding the solution to the real-world problems.
C403.5	Illustrate the Ethereum public block chain platform
C403.6	Identify relative application where block chain technology can be effectively used and implemented.

Subject Code : 410244C   Subject Name: Cyber Security and Digital Forensic

C404C.1	Analyze threats in order to protect or defend it in cyberspace from cyber-attacks.
C404C.2	Build appropriate security solutions against cyber-attacks.
C404C.3	Describe the need of digital forensic and role of digital evidences
C404C.4	Explain rules and types of evidence collection

C404C.5	Analyze, validate and process crime scenes
C404C.6	Identify the methods to generate legal evidence and supporting investigation reports.

Subject Code : 410245 C   Subject Name: Mobile Computing

C405C.1	Develop a strong grounding in the fundamentals of mobile Networks
C405C.2	Apply knowledge in MAC, Network, and Transport Layer protocols of Wireless Network
C405C.3	Illustrate Global System for Mobile Communications
C405C.4	Use the 3G/4G technology based network with bandwidth capacity planning, VLR and HLR identification algorithms
C405C.5	Classify network and transport layer of mobile communication
C405C.6	Design & development of various wireless network protocols using simulation tools

Subject Code : 410245D   Subject Name: Software Testing and Quality Assurance

C405D.1	Describe fundamental concepts in software testing such as manual testing, automation testing and software quality assurance.
C405D.2	Design and Develop project test plan, design test cases, test data, and conduct test operations.
C405D.3	Apply recent automation tool for various software testing for testing software.
C405D.4	Apply different approaches of quality management, assurance, and quality standard to software system.
C405D.5	Apply and analyze effectiveness Software Quality Tools.

C405D.6	Apply tools necessary for efficient testing framework.

Subject Code : 410246 SubjectName: Laboratory Practices-III	
C406.1	Apply preprocessing techniques on datasets
C406.2	Implement and evaluate linear regression and random forest regression models.
C406.3	Apply and evaluate classification and clustering techniques.
C406.4	Analyze performance of an algorithm.
C406.5	Implement an algorithm that follows one of the following algorithm design strategies: divide and conquer, greedy, dynamic programming, backtracking, branch and bound.
C406.6	Interpret the basic concepts in Blockchain technology and its applications

Subject Code : 410247 Subject Name:Laboratory Practices-IV	
C407.1	Apply android application development for solving real life problems
C407.2	Identify various vulnerabilities and demonstrate using various tools.
C407.3	Apply software testing tools to perform automated testing

Subject Code : 410248 Subject Name:Project Work Stage -I	
C408.1	Solve real life problems by applying knowledge.
C408.2	Analyze alternative approaches, apply and use most appropriate one for feasible solution

C408.3	Write precise reports and technical documents in a nutshell.
C408.4	Participate effectively in multi-disciplinary and heterogeneous teams exhibiting team work
C408.5	Developed Inter-personal relationships, conflict management and leadership quality

Subject Code : 410249   **SubjectName: Audit Course 7 (3D Printing)**

C409.1	Understand the basic knowledge of Shop Floor Safety rules and regulations basics of Machine tools and 3D printing machines.
C409.2	Understand the concept of concept of technical sketching, multi-view drawings, Lettering, tolerance, and metric construction.

BE Semester II

Subject Code : 410250   **Subject Name: High Performance Computing**

C410.1	Understand various Parallel Paradigm
C410.2	Design and Develop an efficient parallel algorithm to solve given problem
C410.3	Illustrate data communication operations on various parallel architecture
C410.4	Analyze and measure performance of modern parallel computing systems
C410.5	Apply CUDA architecture for parallel programming
C410.6	Analyze the performance of HPC applications

Subject Code : 410251   **Subject Name: Deep Learning**

C411.1	Understand the basics of Deep Learning and apply the tools to implement deep learning applications.
C411.2	Evaluate the performance of deep learning models (e.g., with respect to the bias-variance trade-off, overfitting and underfitting, estimation of test error).
C411.3	To apply the technique of Convolution (CNN) for implementing Deep Learning models.
C411.4	To apply the technique of Recurrent Neural Network (RNN) for implementing Deep Learning models.
C411.5	To implement and apply deep generative models.
C411.6	To understand Reinforcement Learning Process and construct and apply on-policy reinforcement learning algorithms.

Subject Code : 410252 (A)   Subject Name: Natural Language Processing

C412A.1	Describe the fundamental concepts of NLP, challenges and issues in NLP
C412A.2	Analyze Natural languages morphologically, syntactical and semantically OR Describe the concepts of morphology, syntax, semantics of natural language
C412A.3	Illustrate various language modelling techniques
C412A.4	Integrate the NLP techniques for the information retrieval task
C412A.5	Demonstrate the use of NLP tools and techniques for text-based processing of natural languages
C412A.6	Develop real world NLP applications

Subject Code : 410253 C   Subject Name: Business Intelligence

C413C.1	Differentiate the concepts of Decision Support System & Business Intelligence

C413C.2	Use Data Warehouse & Business Architecture to design a BI system.
C413C.3	Build graphical reports.
C413C.4	Apply different data pre-processing techniques on dataset
C413C.5	Implement machine learning algorithms as per business needs.
C413C.6	Identify the role of BI in marketing, logistics, finance, and telecommunication sector.

Subject Code : 410254   Subject Name: Laboratory Practice V

C414.1	Analyze and measure performance of sequential and parallel algorithms.
C414.2	Design and Implement solutions for multicore/Distributed/parallel environment.
C414.3	Apply the technique of Deep Neural network for implementing Linear regression and classification.
C414.4	Apply the technique of Convolution (CNN) for implementing Deep Learning models

Subject Code : 410255   Subject Name:Laboratory Practices-VI

C415.1	Apply basic principles of elective subjects to problem solving and modeling
C415.2	Use tools and techniques in the area of software development to build mini projects
C415.3	Design and develop applications on subjects of their choice
C415.4	Generate and manage deployment, administration & security.

Subject Code : 410256   Subject Name:Project work Stage -

II		
C416.1	Show evidence of independent investigation	
C416.2	Critically analyze the results and their interpretation.	
C416.3	Report and present the original results in an orderly way and placing the open questions in the right perspective.	
C416.4	Link techniques and results from literature as well as actual research and future research lines with the research	
C416.5	Appreciate practical implications and constraints of the specialist subject	

Subject Code : 410257   Subject Name: Audit Course 8 (Social Media and Analytics)

C409.1	Identify some of the latest digital marketing trends and skill sets needed for today's marketer.	
C409.2	Assess digital marketing as a long-term career opportunity	