MACET
MARTHANDAM COLLEGE OF
ENGINEERING AND TECHNOLOGY
ESTD: 2006

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

I SEMESTER

Course Code & Course Name: HS6151 – Technical English I

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Enhance the students' listening skills and have a knowledge of the types of listening
CO2	Develop conversation skills
CO3	Understand coherence and cohesion in writing and interpret charts and graphs
CO4	Know the different forms of interviews, and how to make use of it in real situations
CO5	Give impromptu talks, and make presentations on given topics

Course Code & Course Name: MA6151- Mathematics I

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Have knowledge of the concepts of orthogonal transformation so as to to diagonalise matrixes
CO2	Relate Comparison Test, Integral Test, D' Alembert's Ratio Test and Leibnitz' S Test to prove convergence
CO3	Find the radius, circle and centre of the curvature of a curve
CO4	Identify the maxima and minima of the functions of two variables using partial differentiation
CO5	Make use of multiple integral techniques to evaluate the area and volume of solids

Course Code & Course Name: PH6151- Engineering Physics I

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Set the different crystal structures and their growth techniques
CO2	Explain the fundamental approaches of stress and strain in solids and modes heat transfer
CO3	Interpret quantum theory and its applications
CO4	Make use of the concepts of acoustics to design buildings
CO5	Segregate the types of optical fiber and Laser

Course Code & Course Name:CY6151 - Engineering Chemistry I

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Understand the various methods involved in polymerization techniques
CO2	Know the applications of thermodynamic laws in engineering problems
CO3	Utilize spectroscopic techniques to determine and interpret molecular structures
CO4	Comprehend the basic concepts of phase rule and how alloying processes control and predict phases in materials
CO5	Apply the fundamental principles of nanomaterials and their properties to diverse applications across the various fields

Course Code & Course Name: GE6151 -Computer Programming

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Describe the initialization of Computers and number systems
CO2	Elucidate the attributes of algorithm and programming basics
CO3	Make use of arrays and string functions in simple C programs
CO4	Learn about the functions and pointers to find solutions to problems
CO5	Relate structure and union to simple C applications

Course Code & Course Name: GE6152- Engineering Graphics

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Describe the initialization of Computers and number systems
CO2	Elucidate the attributes of algorithm and programming basics
CO3	Make use of arrays and string functions in simple C programs
CO4	Learn about the functions and pointers to find solutions to problems
CO5	Relate structure and union to simple C applications

Course Code & Course Name: **GE6161 -Computer Practices Laboratory**

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Utilize spread sheet to set up data for presentation and visualization
CO2	Utilize word processor to prepare data for presentation and visualization
CO3	Make use of good programming design methods for programme development
CO4	Create and apply C programs for simple applications.
CO5	Develop recursive programmes

Course Code & Course Name: **GE6162 -Engineering Practices Laboratory**

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Fabricate carpentry components.
CO2	Fabricate pipe connections with plumbing works.
CO3	Employ welding equipment to join the structures.
CO4	Fabricate electrical circuits
CO5	Fabricate electronics circuits

Course Code & Course Name: GE6163 - Physics and Chemistry Laboratory I

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Understand the functioning of various physics laboratory equipment
CO2	To learn problem solving skills related to physics principles and interpretation of experimental data
CO3	To make the student as an active participant in each part of all lab exercises
CO4	To attain knowledge in the quantitative chemical analysis of water quality related parameters
CO5	To interpret the relationship between molecular weight and material properties

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II SEMESTER

Course Code & Course Name: HS6251 - Technical English II

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Speak flawlessly in different situations
CO2	Enhance writing skills so as to write reviews, articles and personal letters
CO3	Converse well with good of stress, intonation and pronunciation
CO4	Understand the importance of writing skills and its techniques
CO5	Apply skills, related to presentation, group discussion, creative and critical thinking in everyday life

Course Code & Course Name: MA6251 - Mathematics II

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Solve line integral, surface integral and volume integral, using Engineering applications
CO2	Unravel simultaneous first order linear equations, using constant coefficients.
CO3	Solve second order ODE, using Laplace transformation.
CO4	Find analytic functions, using Milne Thomson method
CO5	Solve real definite integrals, contour integrals around unit circle and semi-circle

Course Code & Course Name: PH6251 – Engineering Physics II

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Envision the electrical and thermal properties of metals.
CO2	Segregate the types of semiconductors and the application of Hall Effect.
CO3	Explain the properties of magnetic and superconducting materials.
CO4	Apply the knowledge of polarization and dielectric materials.
CO5	Extract the preparation and properties of metallic glasses, nano materials and biomaterials.

Course Code & Course Name: CY6251 – Engineering Chemistry II

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Understand the diverse water treatment processes needed to ensure water purification and safety in various applications.
CO2	Apply the principles of electrochemical reactions so as to prevent materials from corrosion in engineering context.
CO3	Explain the functioning of power plants, making use of conventional and non-conventional sources of energy.
CO4	Demonstrate the knowledge of metals appropriate for engineering applications, especially their properties, processing, and uses.
CO5	Describe the different types of fuels, their manufacturing processes, and calculate their theoretical calorific values regarding energy applications.

Course Code & Course Name:CS6201-Digital Principles and System Design

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Relate Arithmetic operations in number system and use it to simplify Boolean functions
CO2	Apply Combinational & Sequential Logic Circuits in order to perform Arithmetic operations
CO3	Make out Synchronous Sequential circuits for the given condition.
CO4	Design synchronous and asynchronous sequential circuits
CO5	Apply Programmable Logic towards memory management

Course Code & Course Name: AD3271-DATA STRUCTURES DESIGN LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Elucidate the fundamental concepts and control structures in C for problem solving
CO2	Understands the structures, unions and file handling concepts regarding file manipulation
CO3	Relate the dissimilar linear data structures such as Linked List to solve diverse problems
CO4	Explain the different linear data structures, like stacks and queues
CO5	Utilize sorting, searching and hashing techniques in order to find out the various algorithms using C language

Course Code & Course Name :GE6262 –Physics and Chemistry Laboratory II

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	To learn how data can be collected, presented and interpreted in a clear and concise manner.
CO2	Access, process and analyze scientific information
CO3	Solve problems individually and collaboratively
CO4	To gain hands-on knowledge in the quantitative chemical analysis of water quality related parameters.
CO5	To understand corrosion measurement and cement analysis.

Course Code & Course Name:CS6211 – Digital Laboratory

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	Apply boolean simplification techniques so as to design combinational hardware circuit
CO2	Devise and execute combinational and sequential circuits
CO3	Analyze the given digital circuit – both combinational and sequential
CO4	Create the different functional units in a digital computer system
CO5	Create and make use of simple digital system

Course Code & Course Name: AD3251 - DATA STRUCTURES DESIGN

COURSE OUTCOMES (COs)
List of Course Outcomes

CO1	To understand the concepts of ADTs
CO2	To design linear data structures – lists, stacks, and queues
CO3	Make use of the different data structures to implement solutions to practical problems
CO4	Enhance the searching and sorting programmes
CO5	Use file handling concepts in the application of C programming

III SEMESTER

Course Code & Course Name: MA3354-DISCRETE MATHEMATICS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Formulate simple Engineering problems as Partial Differential Equations
CO2	Apply the concept of Fourier series in solving boundary value problems
CO3	Solve the standard Partial Differential Equations in engineering problems like Wave equation, Heat flow equation by Fourier series.
CO4	Solve Fourier, Fourier Sine and Cosine transforms and properties
CO5	Understand the discrete transform applied to engineering problems.

Course Code & Course Name: CS3351-DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate problem solutions using Object Oriented Techniques.
CO2	Demonstrate the concepts of data abstraction, encapsulation and inheritance for problem solutions.
CO3	Outline the concepts of Exception handling and templates.
CO4	Analyze the various tree structure algorithms.
CO5	Apply the different data structures to problem solutions.

Course Code & Course Name: AD3391-DATABASE DESIGN AND MANAGEMENT

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate the database design for applications.
CO2	Use of ER diagram and normalization techniques in database application.
CO3	Apply concurrency control techniques and recovery procedures to solve problem
CO4	Solve the different query using various query processing techniques.
CO5	Compare advanced databases with traditional databases

Course Code & Course Name: AD3351-DESIGN AND ANALYSIS OF ALGORITHMS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Interpret the computer organization components, instructions and addressing modes
CO2	Solve fixed-point and floating point arithmetic unit.
CO3	Build pipelined datapath for various instructions and classify the pipeline hazards
CO4	Classify parallel processing and outline multiprocessors
CO5	Analyze the different types of memory and I/O systems.

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Course Code & Course Name: AD3301-DATA EXPLORATION AND VISUALIZATION

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate analog communication techniques
CO2	Illustrate digital communication techniques
CO3	Illustrate data and pulse communication techniques
CO4	Make use of various error control coding techniques to identify/correct errors
CO5	Outline multi-user radio communication

Course Code & Course Name:AL3391-ARTIFICIAL INTELLIGENCE

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate the features of Ecosystem &biodiversity.
CO2	Choose pollution control methods and waste management.
CO3	Apply the environmental concepts for conservation and protection of natural resources.
CO4	Demonstrate the impact of social issues on environment.
CO5	Demonstrate the impact of human on environment.

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Course Code & Course Name: AD3311-ARTIFICIAL INTELLIGENCE LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Select good programming design methods for program development.
CO2	Develop C++ programs for object oriented concepts.
CO3	Develop C++ programs for handling exceptions.
CO4	Develop C++ programs for practical problems using non-linear data structures.
CO5	Develop recursive programs using trees and graphs.

Course Code & Course Name: AD3381 DATABASE DESIGN AND MANAGEMENT LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Interface data base language commands to creates implement database
CO2	Analyze the data base using querieSto retrieve records
CO3	Applying PL/SQL for processing database
CO4	Analyze front end tools to design forms, reports and menus
CO5	Develop solutions usingdata base concepts for real time requirements.

Course Code & Course Name:GE3361-PROFESSIONAL DEVELOPMENT

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Use MS Word to create quality documents, by structuring and organizing content for their dayto day technical and academic requirements
CO2	Use MS EXCEL to perform data operations and analytics, record, retrieve data as perrequirements and visualize data for ease of understanding
CO3	Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.

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IV SEMESTER

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Course Code & Course Name: MA3391-PROBABILITY AND STATISTICS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Explain the basic knowledge of Probability and Distributions
CO2	Explain the fundamental knowledge of One and Two dimensional random variables
CO3	Categorize Discrete and Continuous processes
CO4	Infer the solutions to Single and Multi channel Queuing problems
CO5	Compare Linear and Non Linear Queueing models

Course Code & Course Name: AL3451-MACHINE LEARNING

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate the basic layers and its functions in computer networks
CO2	Analyze and design routing algorithms
CO3	Utilize protocols for various functions in the network
CO4	Summarize the Media Access Control Protocols and different Internetworking
CO5	Inspect the working of various application layer protocols

Course Code & Course Name: AL3452-OPERATING SYSTEMS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Outline the basic concepts and functions of Operating Systems
CO2	Outline various threading models, process synchronization and solve deadlock problem
CO3	Compare the performance of various CPU scheduling algorithms
CO4	Compare and contrast various memory management schemes
CO5	Illustrate I/O management and file systems

Course Code & Course Name: AD3491-FUNDAMENTALS OF DATA SCIENCE AND ANALYTICS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Interpret the fundamental needs of algorithms in problem solving
CO2	Compare the different bus configurations.
CO3	Develop algorithms for various computing problems
CO4	Analyze the time and space complexity of various algorithms
CO5	Outline the limitations of algorithms in problem solving

Course Code & Course Name: CS3591-COMPUTER NETWORKS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Interpret the architecture and function of microprocessor.
CO2	Compare the different bus configurations.
CO3	Model various applications using microprocessor.
CO4	Interpret the architecture and function of microcontroller.
CO5	Examine various interfacings using microcontroller.

Course Code & Course Name: GE3451-ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	**To recognize and understand the functions of environment, ecosystems and biodiversity andtheir conservation.** .
CO2	**To identify the causes, effects of environmental pollution and natural disasters and contributeto the preventive measures in the society.**
CO3	**To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.**
CO4	**To recognize the different goals of sustainable development and apply them for suitabletechnological advancement and societal development.**
CO5	**To demonstrate the knowledge of sustainability practices and identify green materials, energycycles and the role of sustainable urbanization.**

Course Code & Course Name:AD3461- MACHINE LEARNING LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Use simulation tools
CO2	Implement the various protocols
CO3	Analyse the performance of the protocols in different layers.
CO4	Analyze various routing algorithms
CO5	Case Study.

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Course Code & Course Name: AD3411-DATA SCIENCE AND ANALYTICS LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Write ALP Programmes for fixed and Floating Point and Arithmetic
CO2	Interface different I/Os with processor
CO3	Generate waveforms using Microprocessors
CO4	Execute Programs in 8051
CO5	Explain the difference between simulator and Emulator

V SEMESTER

Course Code & Course Name: AD3501-DEEP LEARNING

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Apply mathematical logic to solve problems
CO2	Solve counting principles problems by applying elementary counting techniques using product, sum, permutations, combinations, pigeon hole principle.
CO3	Apply how graph and tree concepts are used to solve problems arising in the computer science.
CO4	Explain the concepts and properties of algebraic structures such as groups ,rings and fields
CO5	Explain Boolean Algebra Lattices, Posets and their properties.

Course Code & Course Name: CW3551-DATA AND INFORMATION SECURITY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Apply the concept of HTML5, cascading style sheet in website design
CO2	Develop a basic website using HTML and Cascading Style Sheets
CO3	Compare and contrast the Java Script programming for client and server along with its event handling mechanisms
CO4	Build a simple web page in PHP with XML data format
CO5	Outline web services and client presentation using AJAX

Course Code & Course Name: CS3551-DISTRIBUTED COMPUTING

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Outline OOAD concepts and various UML diagrams
CO2	Select an appropriate design pattern
CO3	Illustrate about domain models and conceptual classes
CO4	Compare and contrast various testing techniques
CO5	Construct projects using UML diagrams

Course Code & Course Name:CCS334-BIG DATA ANALYTICS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Outline the concept of Finite Automata and Regular Expression
CO2	Illustrate the design of Context Free Grammar for any language set
CO3	Demonstrate the push down automaton model for the given language. resources.
CO4	Make use of Turing machine concept to solve the simple problems
CO5	Outline decidability or undesirability of various problems.

Course Code & Course Name: AD3511-DEEP LEARNING LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Illustrate the concept of graphics hardware devices and software used.
CO2	Design three dimensional graphics and apply three dimensional transformations
CO3	Apply Illumination and color models.
CO4	Design animation sequences.
CO5	Design three dimensional graphics and apply three dimensional transformations

Course Code & Course Name: CS3691-EMBEDDED SYSTEMS AND IOT

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Design and implement projects using OO concepts.
CO2	Use the UML analysis and design diagrams.
CO3	Apply appropriate design patterns.
CO4	Create code from design.
CO5	Compare and contrast various testing techniques

Course Code & Course Name: CS6512-INTERNET PROGRAMMING LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Design Web pages using HTML/XML and style sheets
CO2	Create user interfaces using Java frames and applets
CO3	Create dynamic web pages using server side scripting
CO4	Write Client Server applications
CO5	Use the frameworks JSP Strut, Hibernate, Spring and Create applications with AJAX

Course Code & Course Name: CS6513-COMPUTER GRAPHICS LABORATORY

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Understand graphics programming
CO2	Create 3D graphical scenes using open graphics library suits
CO3	Implement image manipulation and enhancement
CO4	Create 2D animations using tools
CO5	create a multimedia presentation/Game/Project

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VI SEMESTER

Course Code & Course Name: CS3691-EMBEDDED SYSTEMS AND IOT

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Outline the distributed systems architecture.
CO2	Outline the inter process communication in distributed systems.
CO3	Illustrate the file accessing model and various services in distributed system.
CO4	Demonstrate concurrency control and properties of transaction in Distributed systems.
CO5	Discuss resource and process management in distributed system

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VII SEMESTER

Course Code & Course Name: GE3791-HUMAN VALUES AND ETHICS

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Compare various encryption techniques.
CO2	Contrast public key algorithms with private key algorithms
CO3	Apply various message authentication functions and secure algorithms.
CO4	Identify different types of security systems and applications.
CO5	Analyze different levels of security and services in e-mail & web security

Course Code & Course Name: AD3512-SUMMER INTERNSHIP

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Gain Domain knowledge and technical skill set required for solving industry /research problems
CO2	Provide solution architecture, module level designs, algorithms
CO3	Implement, test and deploy the solution for the target platform
CO4	Preparation of Technical reports and presentation

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VIII SEMESTER

Course Code & Course Name: AD3811-PROJECT WORK / INTERNSHIPMING

COURSE OUTCOMES (COs)

List of Course Outcomes

CO1	Gain Domain knowledge and technical skill set required for solving industry / research problems
CO2	Provide solution architecture, module level designs, algorithms
CO3	Implement, test and deploy the solution for the target platform
CO4	Prepare detailed technical report, demonstrate and present the work