MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING, PEERMADE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTCOMES (2019 SCHEME)

SEMESTER	COURSE CODE	COURSE NAME	COURSE OUTCOMES	COURSE OUTCOMES
S1	MAT101	LINEAR ALGEBRA AND CALCULUS	CO1	Solve systems of linera equations, diagonalize matrices and characterise quadratic forms.
			CO2	Compute the partial and total deriatives and maxima and minima of multivariable functions.
			CO3	Compute multiple integrals and apply them to find areas and volumes ofgeometrical shapes, mass and centre of gravity of plane laminas
			CO4	Perform varoius tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent.
			CO5	Determine the Taylor and Fourier series expansion of functions and leran their applications.
	PHT100	ENGINEERING PHYSICS	CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.
			CO2	Apply the interaction of light with matter through interference diffraction and identify these phenomena in different natural optical
			CO3	Analyse the behaviour of matter in the atomic and sub atomic level through the principles of quantum mechanics to perceive the
			CO4	Classify the properties of magnetic materials and apply vector calculus to static magnetic fields and use Maxvells equations to diverse
			CO5	Analyse the principle behind various superconducting applications, explain the working of solid state lighting devices and fibreoptic
	EST110	ENGINEERING GRAPHICS	CO1	Draw the projection of points and lines located in different quadrants
			CO2	Prepare multiview orthographic projections of objects by visualizing them in different
			CO3	Draw sectional views and develop surfaces of a given object
			CO4	Prepare pictorial drawings using the principles of isometric and perspective projections to
			CO5	Convert 3D views to orthographic views
			CO6	Obtain multiview projections and solid models of objects using CAD tools
	EST120	BASICS OF CIVIL AND MECHANICAL ENGINEERING	CO1	Recall the role of civil engineer in society and to relate the various disciplines of CivilEngineering.
			CO2	Explain different types of buildings, building components, building materials andbuilding construction
			CO3	Describe the importance, objectives and principles of surveying.
			CO4	Summarise the basic infrastructure services MEP, HVAC, elevators, escalators and ramps
			CO5	Discuss the Materials, energy systems, water management and environment for greenbuildings.
	HUN 101	LIFE SKILLS	CO1	Define and Identify different life skills required in personal and professional life
			CO2	Develop an awareness of the self and apply well-defined techniques to cope with emotionsand stress
			CO3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
			CO4	Take part in group discussions
			CO5	Use appropriate thinking and problem solving techniques to solve new problems
			CO6	Understand the basics of teamwork and leadership
	PHL120	ENGINEERING PHYSICS LAB	CO1	Develop analytical/experimental skills and impart prerequisite hands on experience forengineering laboratories
			CO2	Understand the need for precise measurement practices for data recording
			CO3	Understand the principle, concept, working and applications of relevant technologies andcomparison of results with theoretical calculations
			CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers andfiber optics
			CO5	Develop basic communication skills through working in groups in performing the laboratoryexperiments and by interpreting the results
	ESL 120	CIVIL & MECHANICAL WORKSHOP	CO1	Name different devices and tools used for civil engineering measurements
			CO2	Explain the use of various tools and devices for various field measurements
			CO3	Demonstrate the steps involved in basic civil engineering activities like plotmeasurement, setting out operation, evaluating the natural prof
			CO4	Choose materials and methods required for basic civil engineering activities like fieldmeasurements, masonry work and plumbing
			CO5	Compare different techniques and devices used in civil engineering measurements
			CO6	Identify Basic Mechanical workshop operations in accordance with the material andobjects
			CO7	Apply appropriate Tools and Instruments with respect to the mechanical workshoptrades
S2	MAT102	VECTOR CALCULUS DIFFERENTIAL EQUATION AND TRANSFORMS	CO1	Compute the derivatives and line integrals of vector functions and learn their applications
			CO2	Evaluate surface and volume integrals and learn their inter-relations and applications.
			CO3	Solve homogeneous and non-homogeneous linear differential equation with constantcoefficients
			CO4	Compute Laplace transform and apply them to solve ODEs arising in engineering
			CO5	Determine the Fourier transforms of functions and apply them to solve problems arising inengineering
	CYT100	ENGINEERING CHEMISTRY	CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields.
			CO2	Understand various spectroscopic techniques like UV - Visible, IR NMR and its applications.
			CO3	Apply the knowledge of analytical method for characterizing a chemical mixture or a compound. Understand the basic concept of SEM
			CO4	Learn about the basics of stereochemistry and its application. Apply the knowledge of conducting polymers and advanced polymers in
			CO5	Study various types of water treatment methods to develop skills for treating waste water.
	EST100	ENGINEERING MECHANICS	CO1	Recall principles and theorems related to rigid body mechanics
			CO2	Identify and describe the components of system of forces acting on the rigid body
			CO3	Apply the conditions of equilibrium to various practical problems involving different forcesystem.
			CO4	Choose appropriate theorems, principles or formulae to solve problems of mechanics
			CO5	Solve problems involving rigid bodies, applying the properties of distributed areas and masses
	EST 130	BASICS OF ELECTRICAL ENGINEERING BASICS OF ELECTRONICS ENGINEERING	CO1	Apply fundamental concepts and circuit laws to solve simple DC electric circuits
			CO2	Develop and solve models of magnetic circuits
			CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state
			CO4	Describe working of a voltage amplifier
			CO5	Outline the principle of an electronic instrumentation system
			CO6	Explain the principle of radio and cellular communication
	HUT 102	PROFESSIONAL ETHICS	CO1	Develop vocabulary and language skills relevant to engineering as a profession
			CO2	Analyze, interpret and effectively summarize a variety of textual content
			CO3	Create effective technical presentations
			CO4	Discuss a given technical/non-technical topic in a group setting and arrive at Generalizations/consensus
			CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs
			CO6	Create professional and technical documents that are clear and adhering to all thenecessary conventions
	EST102	PROGRAMMING IN C	CO1	Analyze a computational problem and develop an algorithm/flowchart to find its solution
			CO2	Develop readable* C programs with branching and looping statements, which usesArithmetic, Logical, Relational or Bitwise operators.
			CO3	Write readable C programs with arrays, structure or union for storing the data to be processed
			CO4	Divide a given computational problem into a number of modules and develop a readablemulti-function C program by using recursion if
			CO5	Write readable C programs which use pointers for array processing and parameter passing
			CO6	Develop readable C programs with files for reading input and storing output
	CYL120	ENGINEERING CHEMISTRY LAB	CO1	Understand and practice different techniques of quantitative chemical analysis to generate experimental skills and apply these skills to various analysis.
			CO2	Develop skills relevant to synthesise organic polymers and acquire the practical skill to use TLC fo rthe identification of drugs.
			CO3	Develop the ability to understand and explain the use of modern spectroscopic techniques for analysing and interpreting the IR spectra an
			CO4	Acquire the ability to understand, explain and use instrumental techniques for chemical analysis.
			CO5	Learn to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
			CO6	Function as a member of a team , communicate effectively and engage in further learning. Also understand how chemistry addresses soc
	ESL130	ELECTRICAL&ELECTRONICS ENGINEERING WORKSHIP	CO1	Demonstrate safety measures against electric shocks.
			CO2	Identify the tools used for electrical wiring, electrical accessories, wires, cables, batteriesand standard symbols
			CO3	Develop the connection diagram, identify the suitable accessories and materials necessaryfor wiring simple lighting circuits for domestic b
			CO4	Identify and test various electronic components
			CO5	Draw circuit schematics with EDA tools
			CO6	Assemble and test electronic circuits on boards
			CO7	Work in a team with good interpersonal skills
	MAT203	DISCRETE MATHEMATICAL STRUCTURES	CO1	Check the validity of Predicates in Propositional and Quantified Propositional Logic using Truth tables,deductive reasoning.
			CO2	Solve counting problems by applying counting techniques- Rule of sum, Rule of Product,Permuatation,Combination Pigeon hole principle.
			CO3	Classify binary relation into various types and illustrate application of each type.
			CO4	Illustrate an application of partially ordered set and complete Lattices
			CO5	Explain Generting functions and first order and second order linear recurrence Relation.
			CO6	Illustrate abstract algebraic systems-Semigroups,Monoids, Homomorphism,Isomorphism.
	CST201	DATA STRUCTURES	CO1	Design an algorithm for a computational task and calculate the time/spacecomplexities of that algorithm
			CO2	Identify the suitable data structure (array or linked list) to represent a data itemrequired to be processed to solve a given computational pr
			CO3	Write an algorithm to find the solution of a computational problem by selecting anappropriate data structure (binary tree/graph) to represe
			CO4	Store a given dataset using an appropriate Hash Function to enable efficient access ofdata in the given set
			CO5	Select appropriate sorting algorithms to be used in specific circumstances .

			CO6	Design and implement Data Structures for solving real world problems efficiently
	CST203	LOGIC SYSTEM DESIGN	CO1	Illustrate decimal, binary, octal, hexadecimal and BCD number systems, performconversions among them and do the operations - comple
			CO2	Simplify a given Boolean Function and design a combinational circuit to implementthe simplified function using Digital Logic Gates
			CO3	Design combinational circuits - Adders, Code Convertors, Decoders, MagnitudeComparators, Parity Generator/Checker and design the P
			CO4	Design sequential circuits - Registers, Counters and Shift Registers.
			CO5	Use algorithms to perform addition and subtraction on binary, BCD and floating pointnumbers
	CST205	OBJECT ORIENTED PROGRAMMING USING JAVA	CO1	Write Java programs using the object oriented concepts - classes, objects,constructors, data hiding, inheritance and polymorphism
			CO2	Utilise datatypes, operators, control statements, built in packages & interfaces, Input/Output Streams and Files in Java to develop prograr
			CO3	Illustrate how robust programs can be written in Java using exception handlingmechanism
			CO4	Write application programs in Java using multithreading and database connectivity
S3			CO5	Write Graphical User Interface based application programs by utilising eventhandling features and Swing in Java
	EST200	DESIGN AND ENGINEERING	CO1	Explain the different concepts and principles involved in design engineering.
			CO2	Apply design thinking while learning and practicing engineering.
			CO3	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.
			CO4	
			CO5	
			CO6	
	MNC201	SUSTAINABLE ENGINEERING	CO1	Understand the relevance and the concept of sustainability and the global initiatives in this direction
			CO2	Explain the different types of environmental pollution problems and their sustainable solutions
			CO3	Discuss the environmental regulations and standards
			CO4	Outline the concepts related to conventional and non-conventional energy
			CO5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles
			CO6	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles
	CSL 201	DATA STRUCTURES LAB	CO1	Write a time/space efficient program using arrays/linked lists/trees/graphs to providenecessary functionalities meeting a given set of user
			CO2	Write a time/space efficient program to sort a list of records based on a given key inthe record
			CO3	Examine a given Data Structure to determine its space complexity and timecomplexities of operations on it
			CO4	Design and implement an efficient data structure to represent given data
			CO5	Write a time/space efficient program to convert an arithmetic expression from one notation to another
			CO6	Write a program using linked lists to simulate Memory Allocation and GarbageCollection
	CSL203	)RIENTEDPROGRAMMINGLAB (IN	CO1	Implement the Object Oriented concepts - constructors, inheritance, methodoverloading & overriding and polymorphism in Java
			CO2	Implement programs in Java which use datatypes, operators, control statements,built in packages & interfaces, Input/Output streams and
			CO3	Implement robust application programs in Java using exception handling
			CO4	Implement application programs in Java using multithreading and databaseconnectivity
			CO5	Implement Graphical User Interface based application programs by utilizing eventhandling features and Swing in Java
	MAT206	GRAPH THEORY	CO1	Explain vertices and their properties, types of paths, classification of graphs andtrees & their properties.
			CO2	Demonstrate the fundamental theorems on Eulerian and Hamiltonian graphs.
			CO3	Illustrate the working of Prim's and Kruskal's algorithms for finding minimum costspanning tree and Dijkstra's and Floyd-Warshall algorithr
			CO4	Explain planar graphs, their properties and an application for planar graphs
			CO5	Illustrate how one can represent a graph in a computer.
	CST202	COMPUTER ORGANISATION AND ARCHITECTURE	CO1	Recognize and express the relevance of basic components, I/O organization and
			CO2	Explain the types of memory systems and mapping functions used in memory systems
			CO3	Demonstrate the control signals required for the execution of a given instruction
			CO4	Illustrate the design of Arithmetic Logic Unit and explain the usage of registers in it
			CO5	Explain the implementation aspects of arithmetic algorithms in a digital computer
			CO6	Develop the control logic for a given arithmetic problem
	CST204	DATABASE MANAGEMENT SYSTEMS	CO1	Summarize and exemplify fundamental nature and characteristics of database systems
			CO2	Model real word scenarios given as informal descriptions, using Entity Relationshipdiagrams
			CO3	Model and design solutions for efficiently representing and querying data usingrelational model
			CO4	Demonstrate the features of indexing and hashing in database applications
			CO5	Discuss and compare the aspects of Concurrency Control and Recovery in Databasesystems
			CO6	Explain various types of NoSQL databases
	CST206	OPERATING SYSTEMS	CO1	Explain the relevance, structure, services and functions of operating systems in computing devices.
			CO2	Illustrate the concepts of process management and process scheduling mechanisms employed in operating systems.
			CO3	Illustrate process synchronization mechanisms using Mutex Locks, Semaphores and Monitors.
			CO4	Explain various method for managing deadlocks in opearating systems.
S4			CO5	Explain the memory management algorithms in operating systems.
			CO6	illustrate various disk scheduling algorithms and Explain the need of access control and protection in an operating system.
	HUT200	PROFESSIONAL ETHICS	CO1	Understand the core values that shape the ethical behaviour of a professional.
			CO2	Adopt a good character and follow an ethical life
			CO3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics
			CO4	Solve moral and ethical problems through exploration and assessment by established experiments
			CO5	Apply the knowledge of human values and social values to contemporary ethical values and global issues
	MNC202	CONSTITUTION OF INDIA	CO1	Explain the background of the present constitution of India and its features
			CO2	Utilize the fundamental rights and duties and analyse the features of directive principles of state policy.
			CO3	Understand the working of the union executive,parliament and judiciary
			CO4	Understand the working of the state executive,legislature and judiciary
			CO5	Utilize the special provisions and statutory institutions.
	CSL 202	DIGITAL LAB	CO1	Design and implement combinational logic circuits using Logic Gates
			CO2	Design and implement sequential logic circuits using Integrated Circuits
			CO3	Simulate functioning of digital circuits using programs written in a HardwareDescription Language
			CO4	Function effectively as an individual and in a team to accomplish a given task ofdesigning and implementing digital circuits
	CSL204	OPERATINGSYSTEMS LAB	CO1	Illustrate the use of systems calls in Operating Systems.
			CO2	Implement Process Creation and Inter Process Communication in OperatingSystems.
			CO3	Implement Fist Come First Served, Shortest Job First, Round Robin and Prioritybased CPU Scheduling Algorithms.
			CO4	Illustrate the performance of First In First Out, Least Recently Used and LeastFrequently Used Page Replacement Algorithms.
			CO5	Implement modules for Deadlock Detection and Deadlock Avoidance in OperatingSystems.
			CO6	Implement modules for Storage Management and Disk Scheduling in OperatingSystems.