Course Outcomes

Regulation 2023

Course Name	Course Outcomes
SEMESTER I	
PH23101 ENGINEERING PHYSICS	CO1:Understand the importance of mechanics. CO2:Express their knowledge in electromagnetic waves. CO3:Demonstrate a strong foundational knowledge in oscillations, optics and lasers. CO4:Understand the importance of quantum physics. CO5:Comprehend and apply quantum mechanical principles towards the formation of energybands.
CH23101 ENGINEERING CHEMISTRY	CO1:To infer the quality of water from quality parameter data and propose suitable treatmentmethodologies to treat water. CO2:To identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications. CO3:To apply the knowledge of phase rule and composites for material selection requirements. CO4:To recommend suitable fuels for engineering processes and applications. CO5:To recognize different forms of energy resources and apply them for suitable applications inenergy sectors.
MA23101 MATRICES AND CALCULUS	CO1:Use the matrix algebra methods for solving practical problems. CO2:Apply differential calculus tools in solving various application problems. CO3:Able to use differential calculus ideas on several variable functions. CO4:Apply different methods of integration in solving practical problems. CO5:Apply multiple integral ideas in solving areas, volumes and other practical problems.
GE23101 ENGINEERING GRAPHICS	CO 1: Use BIS conventions and specifications for engineering drawing. CO 2: Construct the conic curves and cycloid. CO 3: Solve practical problems involving projection of lines. CO 4: Draw the orthographic, isometric and perspective projections of simple solids. CO 5: Draw the development of simple solids.

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LBS23101 PHYSICS & CHEMISTRY LABORATORY	PHYSICS LABORATORY CO1:Understand the functioning of various physics laboratory equipment. CO2:Use graphical models to analyze laboratory data. CO3:Use mathematical models as a medium for quantitative reasoning and describing physicalreality. CO4:Access, process and analyze scientific information. CO5:Solve problems individually and collaboratively. CHEMISTRY LABORATORY CO1:To analyse the quality of water samples with respect to their acidity, alkalinity, hardness andDO. CO2:To determine the amount of metal ions through volumetric and spectroscopic techniques CO3:To analyse and determine the composition of alloys. CO4:To learn simple method of synthesis of nanoparticles CO5:To quantitatively analyse the impurities in solution by electroanalytical techniques
BS3171 PHYSICS AND CHEMISTRY LABORATORY	CO1: Analyse the functioning of various physics laboratory equipment. CO2: Apply graphical models to analyze laboratory data. CO3: Develop mathematical models as a medium for quantitative reasoning and describing physical reality. CO4: Analyze, Access and process scientific information. CO5: Develop solutions for problems individually and collaboratively.
LHS23101 COMMUNICATION SKILL LABAROTARY	CO1: To listen and comprehend complex academic texts CO 2: To speak fluently and accurately in formal and informal communicative contexts CO 3:To express their opinions effectively in both oral and written medium of communication
SEMESTER II	
HS23202 PROFESSIONAL ENGLISH	CO1:To use appropriate words in a professional context CO2: To gain understanding of basic grammatic structures and use them in right context. CO3: To read and infer the denotative and connotative meanings of technical texts CO4: To write definitions, descriptions, narrations and essays on various topics

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MA23202 DIFFERENTIAL EQUATIONS AND TRANSFORM TECHNIQUES	CO1: Solve higher order ordinary differential equations which arise in engineering applications. CO2: Solve the partial differential equations in solving engineering problems. CO3: Apply Fourier series techniques in engineering applications. CO4: Understand the Fourier transform techniques in solving engineering problems. CO5: Understand the Z-transforms techniques in solving difference equations.

Course Name	Course Outcomes
BE23201 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	CO1: Compute the electric circuit parameters for simple problems. CO2: Explain the working principles and characteristics of electrical machines, electronic devices and measuring instruments. CO3: Identify general applications of electrical machines, electronic devices and measuring instruments. CO4: Analyze the basic electrical and electronic circuits. CO5: Explain the types and operating principles of sensors and transducers.
CS23201 PROBLEM SOLVING USING C	CO1: Demonstrate knowledge on C Programming constructs CO2: Develop simple applications in C using basic constructs CO3: Design and implement applications using arrays and strings CO4: Develop and implement modular applications in C using functions. CO5: Develop applications in C using structures and pointers. CO6: Design applications using sequential and random access file processing.
LES23201 ENGINEERING PRACTICES LABORATORY	CO 1: Draw pipe line plan; lay and connect various pipe fittings used in common household plumbing work; Saw; plan; make joints in wood materials used in common household wood work. CO 2: Weld various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; Assemble simple mechanical assembly ofcommon household equipments; Make a tray out of metal sheet using sheet metal work. CO 3: Wire various electrical joints in common household electrical wire work. CO 4: Solder and test simple electronic circuits.

Course Name	Course Outcomes
LCS23201 PROBLEM SOLVING USING C LABORATORY	CO1: Demonstrate knowledge on C programming constructs. CO2: Develop programs in C using basic constructs. CO3: Develop programs in C using arrays. CO4: Develop applications in C using strings, pointers, functions. CO5: Develop applications in C using structures. CO6: Develop applications in C using file processing.
SEMESTER III	
MA23303 DISCRETE MATHEMATICS	CO1:Have knowledge of the concepts needed to test the logic of a program. CO2:Have an understanding in identifying structures on many levels. CO3:Be aware of a class of functions which transform a finite set into another finite set whichrelates to input and output functions in computer science. CO4:Be aware of the counting principles. CO5:Be exposed to concepts and properties of algebraic structures such as groups, rings andfields.

CS23301 DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION	CO1 : Design various combinational digital circuits using logic gates CO2 : Design sequential circuits and analyze the design procedures CO3 : State the fundamentals of computer systems and analyze the execution of an instruction CO4 : Analyze different types of control design and identify hazards CO5 : Identify the characteristics of various memory systems and I/O communication
AD23301 DATA SCIENCE USING PYTHON	CO1: Understand the fundamentals of python programming CO2: Use the Python Libraries for Data Manipulation. CO3: Define the data science process. CO4: understand different types of data description for data science process CO5: Gain knowledge on relationships between data
IT23301 DATA STRUCTURES AND ALGORITHMS	CO1:Explain abstract data types CO2:Design, implement, and analyze linear data structures, such as lists, queues, and stacks,according to the needs of different applications CO3:Design, implement, and analyze efficient tree structures to meet requirements such assearching, indexing, and sorting CO4:Model problems as graph problems and implement efficient graph algorithms to solve

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CS23303 OBJECT ORIENTED PROGRAMMING	CO1:Apply the concepts of classes and objects to solve simple problems CO2:Develop programs using inheritance, packages and interfaces CO3:Make use of exception handling mechanisms and multithreaded model to solve real worldproblems CO4:Build Java applications with I/O packages, string classes, Collections and generics concepts CO5:Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications
LIT23301 DATA STRUCTURES AND ALGORITHMS LABORATORY	CO1:Implement ADTs as Python classes CO2:Design, implement, and analyse linear data structures, such as lists, queues, and stacks,according to the needs of different applications CO3:Design, implement, and analyse efficient tree structures to meet requirements such assearching, indexing, and sorting CO4:Model problems as graph problems and implement efficient graph algorithms to solve them
LCS23302 OBJECT ORIENTED PROGRAMMING LABORATORY	CO1 : Design and develop java programs using object oriented programming concepts CO2 : Develop simple applications using object oriented concepts such as package exceptions CO3: Implement multithreading, and generics concepts CO4 : Create GUIs and event driven programming applications for real world problems CO5: Implement and deploy web applications using Java
LAD23301 DATA SCIENCE USING PYTHON LABORATORY	CO1: Make use of the python libraries for data science CO2: Make use of the basic Statistical and Probability measures for data science. CO3: Perform descriptive analytics on the benchmark data sets. CO4: Perform correlation and regression analytics on standard data sets CO5: Present and interpret data using visualization packages in Python.

SEMESTER IV	
CS23405 THEORY OF COMPUTATION	CO1: Construct automata theory using Finite Automata CO2: Write regular expressions for any pattern CO3: Design context free grammar and Pushdown Automata CO4: Design Turing machine for computational functions CO5: Differentiate between decidable and undecidable problems

Course Name	Course Outcomes
CS23402 COMPUTER NETWORKS	CO 1: Explain the basic layers and its functions in computer networks. CO 2: Understand the basics of how data flows from one node to another. CO 3: Analyze routing algorithms. CO 4: Describe protocols for various functions in the network. CO 5: Analyze the working of various application layer protocols.
CS23401 DATABASE MANAGEMENT SYSTEMS	CO1:Construct SQL Queries using relational algebra CO2:Design database using ER model and normalize the database CO3:Construct queries to handle transaction processing and maintain consistency of the database CO4:Compare and contrast various indexing strategies and apply the knowledge to tune theperformance of the database CO5:Appraise how advanced databases differ from Relational Databases and find a suitabledatabase for the given requirement.
I T23401 WEB ESSENTIALS	CO 1: Apply JavaScript, HTML and CSS effectively to create interactive and dynamic websites. CO 2: Create simple PHP scripts CO 3: Design and deploy simple web-applications. CO 4: Create simple database applications. CO 5: Handle multimedia components
CS23403 OPERATING SYSTEMS	CO1: Construct automata theory using Finite Automata CO2: Construct regular expressions for any pattern CO3: Design context free grammar and Pushdown Automata CO4: Design Turing machine for computational functions CO5: Analyze decidable and undecidable problems.
GE23402 ENVIRONMENTAL SCIENCES AND SUSTAINABILITY	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 andcontribute 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.
LCS23401 DATABASE MANAGEMENT SYSTEMS LABORATORY	CO1: Create databases with different types of key constraints. CO2: Construct simple and complex SQL queries using DML and DCL commands. CO3: Use advanced features such as stored procedures and triggers and incorporate inGUI based application development. CO4: Create an XML database and validate with meta-data (XML schema). CO5: Create and manipulate data using NOSQL database.