

DEPARTMENT OF INFORMATION TECHNOLOGY

Course Outcomes (CO)

Semester: I

Subject Code: BCST-101

Name of the subject: Mathematics-1

Course Outcomes

CO1	Apply the matrix techniques to reduce the quadratic forms to canonical form. Understand the concept of limit, continuity, differentiability and apply in the study of Rolle's, Lagrange's, Cauchy mean value theorem and Leibnitz theorems.
CO2	Identify the application of partial differentiation and apply for evaluating maxima & minima
CO3	Illustrate the working methods of multiple integral and apply for finding area, volume, centre of mass and center of gravity.
CO4	Remember the concept of vector and apply for directional derivatives, tangent and normal planes. Also evaluate line, surface and volume integrals.
CO5	Understand the concept of vector space, Basis of a vector and linear transformations

Semester: I/II

Subject Code: BCST-102/BCST-202

Name of the subject: Physics Theory

Course Outcomes

CO1	Understand the basic knowledge about basics of quantum mechanics and semi-conductor materials
CO2	Know the conceptual physics and its use in solving the physical problems.
CO3	Apply the Vector differential operator on scalar and vector point functions.
CO4	Apply the principles of physics.
CO5	Identify the reasons for physical happenings.

Semester: I/II

Subject Code: BCST-103/BCST-203

Name of the subject: Chemistry

Course Outcomes

CO1	Analyze microscopic chemistry in terms of atomic and molecular orbitals and intermolecular forces
CO2	Rationalize bulk properties and processes using thermodynamic considerations
CO3	Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques
CO4	Rationalize periodic properties such as ionization potential, electronegativity, oxidation

	states and electronegativity.
CO5	List major chemical reactions that are used in the synthesis of molecules.

Semester: I

Subject Code: BHST-101

Name of the subject: English

Course Outcomes

CO1	Demonstrate a significant increase in word knowledge
CO2	Employ prereading, skimming, and prewriting techniques.
CO3	Identify main ideas in paragraphs and reading selections.
CO4	Decipher paragraph patterns, writer techniques, and conclusions.

Semester: I/II

Subject Code: BCST-101/BCST-201

Name of the subject: Programming for Problem Solving

Course Outcomes

CO1	To formulate simple algorithms for arithmetic and logical problems.
CO2	To translate the algorithms to programs (in C language).
CO3	To test and execute the programs and correct syntax and logical errors.
CO4	To implement conditional branching, iteration and recursion.
CO5	To decompose a problem into functions and synthesize a complete program using divide and conquer approach.

Semester: I/II

Subject Code: BEET-101/BEET-201

Name of the subject: Basic Electrical Engineering

Course Outcomes

CO1	Predict the behavior of any electrical and magnetic circuits.
CO2	Formulate and solve complex AC, DC circuits.
CO3	Identify the type of electrical machine used for that particular application
CO4	Realize the requirement of transformers in transmission and distribution of electric power and other applications.
CO5	Function on multi-disciplinary teams.

Semester: II
Subject Code: BCST-201
Name of the subject: Engineering Mathematics-II

Course Outcomes

CO1	Understand the concept of differentiation and apply for solving differential equations.
CO2	Understand the concept of second order differential equations with variable coefficients by different techniques.
CO3	Understand the concept of linear and non linear partial differential equations.
CO4	Understand the concept of convergence of sequence and series.
CO5	Illustrate the working methods of complex functions and apply for finding analytic functions.

Semester: III
Subject Code: BAST-301
Name of the subject: Mathematics-III

Course Outcomes

CO1	Understand the concept of Fourier transform to evaluate engineering problems
CO2	Remember the concept of Laplace transform and apply in solving real life problems.
CO3	Understand to evaluate roots of algebraic and transcendental equations.
CO4	Understand interpolation, numerical differentiation, integration and the solution of differential equations

Semester: III
Subject Code: BITT-302
Name of the subject: Discrete Structure

Course Outcomes

CO1	For a given logic sentence express it in terms of predicates, quantifiers, and logical connectives
CO2	For a given a problem, derive the solution using deductive logic and prove the solution based on logical inference
CO3	For a given a mathematical problem, classify its algebraic structure
CO4	Develop the given problem as graph networks and solve with techniques of graph theory.

Semester: III
Subject Code: BITT- 303
Name of the subject: Data Structure

Course Outcomes

CO1	Select appropriate data structures as applied to specified problem definition.
CO2	Implement operations like searching, insertion, and deletion, traversing mechanism etc.on various data structures
CO3	Students will be able to implement Linear and Non-Linear data structures.
CO4	Implement appropriate sorting/searching technique for given problem.

Semester: III
Subject Code: BECT-303
Name of the subject: Digital Electronics

Course Outcomes

CO1	Develop a digital logic and apply it to solve real life problems
CO2	Analyze, design and implement combinational logic circuits.
CO3	Classify different semiconductor memories
CO4	Analyze, design and implement sequential logic circuits.
CO5	Analyze digital system design using PLD.

Semester: III
Subject Code: BITT- 305
Name of the subject: Object Oriented Programming and Methodology

Course Outcomes

CO1	Specify simple abstract data types and design implementations, using abstraction functions to document them.
CO2	Recognize features of object-oriented design such as encapsulation, polymorphism, inheritance, and composition of systems based on object identity.
CO3	Name and apply some common object-oriented design patterns and give examples of their use
CO4	Design applications with an event-driven graphical user interface

Semester: IV
Subject Code: BCET-401
Name of the subject: Energy & Environmental Engineering

Course Outcomes

CO1	Apply advanced level knowledge, techniques, skills and modern tools in the field of Energy and Environmental Engineering.
CO2	Distinguish the different energy generation systems and their environmental impacts
CO3	Respond to global policy initiatives and meet the emerging challenges with sustainable technological solutions in the field of energy and environment.

Semester: IV
Subject Code: BITT-402
Name of the subject: Database Management System

Course Outcomes

CO1	For a given query write relational algebra expressions for that query and optimize the developed expressions
CO2	For a given specification of the requirement design the databases using ER method and normalization
CO3	For a given specification construct the SQL queries for Open source and Commercial DBMS -MYSQL, ORACLE, and DB2.
CO4	For a given query optimize its execution using Query optimization algorithms
CO5	For a given transaction-processing system, determine the transaction atomicity, consistency, isolation, and durability

Semester: IV
Subject Code: BITT-403
Name of the subject- Software Engineering

Course Outcomes

CO1	Implement Software life cycle models and have a knowledge of different phases of Software life cycle
CO2	Identify, formulate, review, estimate and schedule complex software projects using principles of mathematics.
CO3	Create a bug free software with good design and quality by using appropriate techniques and modern engineering and IT tools.
CO4	Analyze verification, validation activities, static, dynamic testing, debugging tools and techniques and importance of working in teams.

Semester: IV

Subject Code: BITT-404

Name of the subject: Computer Organization and Architecture

Course Outcomes

CO1	Draw the functional block diagram of a single bus architecture of a computer and describe the function of the instruction execution cycle, RTL interpretation of instructions, addressing modes, instruction set.
CO2	Write assembly language program for specified microprocessor for computing 16 bit multiplication, division and I/O device interface (ADC, Control circuit, serial port communication).
CO3	Write a flowchart for Concurrent access to memory and cache coherency in Parallel Processors and describe the process.
CO4	Given a CPU organization and instruction, design a memory module and analyze its operation by interfacing with the CPU.

Semester: IV

Subject Code: BITT-405

Name of the subject: Theory of Automata and Formal Languages

Course Outcomes

CO1	Apply knowledge in designing or enhancing compilers.
CO2	Design grammars and automata (recognizers) for different language classes.
CO3	Apply knowledge in developing tools for language processing or text processing.

Semester: IV

Subject Code: BCST-408

Name of the subject: Cyber Security

Course Outcomes

CO1	Know about various attacks and viruses in cyber systems
CO2	Know about how to prevent digital attacks
CO3	Know about how to prevent Phishing Attacks
CO4	Know about how to do secure transactions

Semester: V
Subject Code: TIT-501
Name of the subject: Operating System

Course Outcomes

CO1	Understand OS functional components and conceptualize process, threads, Semaphores, etc
CO2	Analyze scheduling algorithms and formulate solutions for critical section problem
CO3	Analyze and describe System model for deadlock, Methods for handling deadlocks and memory management strategies
CO4	Understand and define File ,directory and learn various Access methods and implementation
CO5	Learn Case Studies of Linux Operating System

Semester: V
Subject Code: TIT-502
Name of the subject: Artificial Intelligence

Course Outcomes

CO1	Demonstrate working knowledge in Lisp in order to write simple Lisp programs and explore more sophisticated Lisp code on their own.
CO2	Understand different types of AI agents and how they work in team to get more accurate result.
CO3	Know various AI search algorithms (uninformed, informed, heuristic, constraint satisfaction, genetic algorithms).
CO4	Understand the fundamentals of knowledge representation (logic-based, frame-based, semantic nets), inference and theorem proving.
CO5	Ability to apply knowledge representation, reasoning, and machine learning techniques to real-world problems

Semester: V
Subject Code: TCS-503
Name of the subject: Design & Analysis of Algorithm

Course Outcomes

CO1	To analyze performance of algorithms.
CO2	To choose the appropriate data structure and algorithm design method for a specified application.
CO3	To understand how the choice of data structures and algorithm design methods impacts the performance of programs.
CO4	To solve problems using algorithm design methods such as the greedy method, divide and conquer, dynamic programming, backtracking and branch and bound.

Semester: V

Subject Code: TIT-504

Name of the subject: Visual Programming and DotNet Technologies

Course Outcomes

CO1	Learning basic of oops programming with principles.
CO2	Understand various predefined and user defined data types like class, struct, enumeration and keywords.
CO3	Discuss the data-hiding tasks like abstraction and encapsulation with some new features like property, getter and setters.
CO4	Understand the impact of access modifiers in data security from unauthorized access.
CO5	Understanding the impact of Dot Net Framework on various types of application.

Semester: V

Subject Code: TIT-505

Name of the subject: Software Project Management

Course Outcomes

CO1	Apply the process to be followed in the software development life cycle model
CO2	Implement communication, modeling, construction & deployment practices in software development.
CO3	Analyze & design the software models using unified modeling language (UML).
CO4	Explain the concepts of various software testing methods & be able to apply appropriate testing approaches for development of software.
CO5	Apply the concepts of project management & planning.

Semester: V

Subject Code: TIT-506

Name of the subject: E-Commerce

Course Outcomes

CO1	Recognize the impact of Information and Communication technologies, especially of the Internet in business operations
CO2	Recognize the fundamental principles of e-Business and e-Commerce
CO3	Distinguish the role of Management in the context of e-Business and e-Commerce
CO4	Explain the added value, risks and barriers in the adoption of e-Business and e-Commerce
CO5	Examine applications of e-Commerce in relation to the applied strategic

Semester: VI
Subject Code: TIT-601
Name of the subject: Computer Graphics

Course Outcomes

CO1	To list the basic concepts used in computer graphics.
CO2	To implement various algorithms to scan, convert the basic geometrical primitives, Transformations, Area filling, clipping.
CO3	To describe the importance of viewing and projections.
CO4	To define the fundamentals of animation, virtual reality and its related technologies.
CO5	To understand a typical graphics pipeline

Semester: VI
Subject Code: TIT-602
Name of the subject: Computer Networks

Course Outcomes

CO1	Understand basic computer network technology.
CO2	Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each Layer.
CO3	Identify the different types of network topologies and protocols.
CO4	Design and implement a peer to peer file sharing application utilizing application layer protocols such as HTTP, DNS, and SMTP and transportation layer protocol.
CO5	Predict ethical, legal, security and social issues related to computer networks.

Semester: VI
Subject Code: TIT-603
Name of the subject: Web Technology

Course Outcomes

CO1	Employ fundamental computer theory to basic programming techniques.
CO2	Use fundamental skills to maintain web server services required to host a website.
CO3	Select and apply markup languages for processing, identifying, and presenting of information in web pages.
CO4	Use scripting languages and web services to transfer data and add interactive

	components to web pages.
CO5	Create and manipulate web media objects using editing software.

Semester: VI

Subject Code: TIT-604

Name of the subject: Service Oriented Computing

Course Outcomes

CO1	Understand and apply concepts of communication and organizational modelling for realizing decentralized service-oriented systems
CO2	Use, in their own programs, Web services published by others.
CO3	Perform matchmaking on Web services.
CO4	Apply principles of distributed transactions, business processes, business protocols, rules, and agents to specify, monitor, and manage the behaviour of composed services.
CO5	Conceptually model Web services and formulate specifications of them in the Resource Description Framework (RDF) and the Web Ontology Language (OWL).

Semester: VI

Subject Code: TIT-605

Name of the subject: Advanced Java Programming

Course Outcomes

CO1	Understand concepts of web Application programming.
CO2	Design and Develop server side programs using JSP.
CO3	Design and Develop programs using java beans and EJB.
CO4	Design and Develop server side programs in the form of servlets
CO5	Develop dynamic client side programs using java scripts.

Semester: VI

Subject Code: THU-608

Name of the subject: Principles of Management

Course Outcomes

CO1	Identify the different types of principles of management.
CO2	Discuss and communicate the management evolution and how it will affect future managers.
CO3	Observe and evaluate the influence of historical forces on the current practice of management.
CO4	Identify and evaluate social responsibility and ethical issues involved in business situations and logically articulate own position on such issues.
CO5	Explain how organizations adapt to an uncertain environment and identify techniques managers use to influence and control the internal environment.

Semester: VII
Subject Code: TIT-701
Name of the subject: System Administration

Course Outcomes

CO1	Ability to understand the Unix Operating System and the working of the built in commands available in UNIX.
CO2	Analyze the duties of the system administration in UNIX environment.
CO3	Understanding and administering file permissions on directories and regular files
CO4	Analyzing and taking measures to increase system performance
CO5	Implementing basic security measures and Accounting of resources

Semester: VII
Subject Code: TIT-702
Name of the subject: Data Warehousing and Mining

Course Outcomes

CO1	Learn data Warehouse principle , Data mining concepts and working
CO2	Understand various data processing preprocessing and their application scenarios.
CO3	Discuss The data mining task like classification, regression, clustering. Association mining.
CO4	Understand the impact of machine learning solution on the society and also the contemporary issues.
CO5	Explore a suitable data mining task to the problem.

Semester: VII
Subject Code: TIT-703
Name of the subject: Information Security

Course Outcomes

CO1	Differentiate network security and computer security.
CO2	Understand various attacks on network.
CO3	Understand various conventional cryptography algorithms and asymmetric encryption algorithms.
CO4	Expertise in Message authentication, Hash function and Public key encryption.
CO5	Remembering requirements for web security and implementing security through SSL/TLS.

Semester: VII

Subject Code: TIT-075

Name of the subject: Multimedia Communication and Design

Course Outcomes

CO1	Describe technical characteristics and performance of multimedia system and terminals,
CO2	Design creative approach in application of multimedia devices, equipment and systems,
CO3	Carry out experiments and measurements on the multimedia systems in laboratory conditions on real components and equipment,
CO4	Interpret and analyze measurement results obtained on the multimedia system and components,
CO5	Describe the development process and applications of the multimedia systems,

Semester: VII

Subject Code: TOE-05

Name of the subject: EDP

Course Outcomes

CO1	Identify the different types of industries.
CO2	Discuss and communicate the various kinds of reports.
CO3	Observe and evaluate the influence of historical costs on the current practice in Business.
CO4	Identify Capital expenditures and its operations.
CO5	Discuss the Role of various Nations and State agencies which render assistance to small scale industries

Semester: VIII

Subject Code: TIT- 801

Name of the subject: Software Architecture

Course Outcomes

CO1	Argue the importance and role of software architecture in large-scale software systems.
CO2	Design and motivate software architecture for large-scale software systems.
CO3	Recognize major software architectural styles, design patterns, and frameworks.
CO4	Describe a software architecture using various documentation approaches and architectural description languages.
CO5	Generate architectural alternatives for a problem and selection among them.

Semester: VIII

Subject Code: TIT- 802

Name of the subject: Cryptography and Network Security

Course Outcomes

CO1	Understand various attacks and need of cryptography
CO2	Understand various substitution and transposition ciphers
CO3	Understand various block ciphers
CO4	Understand public key cryptography
CO5	Understand how security is implemented in the www.

Semester: VIII

Subject Code: TIT-081

Name of the subject: IT Infrastructure Management

Course Outcomes

CO1	Be able to describe the business value and processes of ICT services in an organization and apply that knowledge and skill with initiative to a workplace scenario.
CO2	Be able to investigate, critically analyze and evaluate the impact of new and current ICT services to an organization.
CO3	Be able to describe how effective IT Infrastructure Management requires strategic planning with alignment from both the IT and business perspectives in an organization.
CO4	Be able to demonstrate the technical and communications skills that contribute to the operation of ICT services in an organization.
CO5	Be able to synthesize the theoretical, technical and management issues that deliver ICT services to an organization.

Semester: VIII

Subject Code: TIT-087

Name of the subject: Distributed Computing

Course Outcomes

CO1	Study software components of distributed computing systems. Know about the communication and interconnection architecture of multiple computer systems.
CO2	Recognize the inherent difficulties that arise due to distributed-ness of computing resources. Understanding of networks & protocols, mobile & wireless computing and their applications to real world problems.
CO3	At the end students will be familiar with the design, implementation and security issues of distributed system