



Shree Vile Parle Kelavani Mandal's
Institute of Technology, Dhule
Department of Information Technology
Course Outcome Statements
A.Y. 2023-24

Sem	Subject Code	Subject Name	CO No	CO Statement
SEM-I	BTBS101	Engineering Mathematics – I	CO101.1	Apply the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problem
			CO101.2	Demonstrate the concept partial derivatives and their applications to Maxima/ Minima , series expansion of multi valued functions
			CO101.3	Compute Jacobian of functions of several variables and their applications to engineering problems
			CO101.4	Identify and sketch of curves in various coordinate system
			CO101.5	Evaluate multiple integrals and their applications to area and volume
	BTBS102	Engineering Chemistry	CO102.1	Develop the importance of water in industrial and domestic usage.
			CO102.2	Study the knowledge of phases, components, degree of freedom and apply it in various phase diagrams.
			CO102.3	Apply the knowledge of corrosion to prevent corrosion of metallic and non-metallic surfaces.
			CO102.4	Examine a fuel and suggest alternative fuels.
			CO102.5	Study the basic concept of electrochemistry and use their applications in the industry.
	BTES103	Engineering Mechanics	CO103.1	Know and apply fundamental Laws of Engineering Mechanics
			CO103.2	Know and apply conditions of static equilibrium to analyze given force system
			CO103.3	Compute Centre of gravity and Moment of Inertia of plane surfaces
			CO103.4	Compute the motion characteristics of a body /particle for a Rectilinear and Curvilinear motion.
			CO103.5	Know and discuss relation between force and motion characteristics
	BTES104	Computer Programming in C	CO104.1	To illustrates the use of editors, translation, flowchart and Algorithm in C language
			CO104.2	To recognize various operators and implement program in C using operators
			CO104.3	To illustrate the use of control statement and Implement C program using control statement
			CO104.4	To describe the concept of Array in C language and implement the C program using one and multidimensional Array
			CO104.5	To describe the control of Structures and Pointer and implement structure and pointer concept in C Language
	BTES105L	Workshop Practices	COBTES206L.1	Perform carpentry operations like planning, cutting, fitting of joints using hand and power tools
			COBTES206L.2	Perform fitting operations such as marking, cutting, filling, drilling and tapping using hand and power tools and also basic plumbing Operations.
			COBTES206L.3	Perform sheet metal operations such as marking, shearing, bending, punching, and soldering using hand and power tools and Welding operations like joint preparations, electrode selections.
			COBTES206L.4	Understand the simple machining skills on lathe machine operations and its use during their project work
	BTES106	Basic Electrical and Electronic Engineering	CO106.1	Apply basic ideas and principles of electrical engineering
			CO106.2	Identify protection equipment and energy storage devices
			CO106.3	Differentiate electrical and electronics domains and explain the operation of diodes and transistors.
			CO106.4	Acquire knowledge of digital electronics
CO106.5			Design simple combinational and sequential logic circuits.	
BTBS107L	Engineering Chemistry Lab	CO107L.1	Test the quality of water sample by determination of hardness, acidity, alkalinity and dissolve oxygen present in it.	
		CO107L.2	Examine the chemical property of an oil and quality of bleaching powder.	
		CO107L.3	Determine the concentration of specific ions present in the solution using titration methods.	
		CO107L.4	Examine the physical properties of liquid sample.	
BTES108L	Engineering Mechanics Lab	CO108L.1	Calculate beam reaction by Parallel Force apparatus and graphics static method and forces in truss.	
		CO108L.2	Evaluate co-efficient of friction and centroid of irregular shaped bodies.	
		CO108L.3	Evaluate mechanical advantage, Velocity ratio, efficiency and mass moment of inertia.	
BTBS201	Engineering Mathematics – II	CO201.1	Discuss the need and use of complex variables to find roots, to separate complex quantities and to establish relation between circular and hyperbolic functions	
		CO201.2	Solve first and higher order differential equations and apply them as a mathematical modeling in electric and mechanical systems	
		CO201.3	Find Fourier series representation of periodic functions over different intervals.	



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SEM-III			CO301.4	Form PDE by eliminating arbitrary constant, solve PDE and use PDE to solve one and two dimensional heat flow equation.
			CO301.5	Determine Analytic functions/ apply Cauchy's theorem/Cauchy's integral formula and Residue theorem to solve contour integration.
	BTHM3402	Interpersonal Communication Skills and Self-Development for Engineers	CO3402.1	Learner will acquire interpersonal communication skills.
			CO3402.2	Learner will develop the ability to work independently.
			CO3402.3	Learner will develop the qualities like self-discipline, self-criticism and self- management.
			CO3402.4	Learner will have the qualities of time management and discipline.
			CO3402.5	Learner would present themselves as inspiration for others.
	BTITC303	Computer Architecture and Organization	CO303.1	To identify components of a computer system including CPU, memory and input/output units
			CO303.2	To explain instruction types, its execution and interrupt mechanism, digital logic and floating-point arithmetic
			CO303.3	To understand memory organization such as internal and external memory and types
			CO303.4	To understand control unit operations such as hardwired and microprogrammed control units
			CO303.5	To differentiate input / output organizations I/O module, Programmed I/O, DMA.
	BTITC304	Object Oriented Paradigm with C++	CO304.1	To understand basic of object oriented programming
			CO304.2	To understand the storage concepts in a simple object oriented programming
			CO304.3	Demonstrate different ways of inheriting feature from base class in C++
			CO304.4	Demonstration of polymorphism and file handling in C++
			CO304.5	Able to understand possible exception and handle it.
	BTITC305	Data Structures and Applications	CO305.1	To write neat code by selecting appropriate data structure and demonstrate a working solution for a given problem.
			CO305.2	To think of all possible inputs to an application and handle all possible errors properly.
			CO305.3	To analyze clearly different possible solutions to a program and select the most efficient one.
			CO305.4	To write an application to demonstrate a good working solution.
			CO305.5	To demonstrate the ability to write reusable code and abstract data types with object-based approach
	BTITL306	Object - oriented Programming in C++ Lab	LO306.1	Programs to demonstrate the implementation using function and structure.
			LO306.2	Programs to demonstrate the implementation class & object and compile time polymorphism.
			LO306.3	Programs to demonstrate the implementation of inheritance and file handling
	BTITL307	Data Structures and Applications Lab	LO305.1	To write neat code by selecting appropriate data structure and demonstrate a working solution for a given problem.
			LO305.2	To think of all possible inputs to an application and handle all possible errors properly.
			LO305.3	To analyze clearly different possible solutions to a program and select the most efficient one.
			LO305.4	To write an application to demonstrate a good working solution.
			LO305.5	To demonstrate the ability to write reusable code and abstract data types with object based approach
BTITS308	Seminar-I	CO308.1	Acquired the basic skills to for performing literature survey and paper presentation	
		CO308.2	Provide students better communication skills	
		CO308.3	Describe the current topics in Information Technology and related areas based on current publications.	
		CO308.4	Prepare the report	
	Internship-I	CO1	To demonstrate the knowledge gained during internship with the help of survey report writing and presentation	
		CO2	To discover engineering and management principles useful at specific work environment	
		CO3	To implement the learning acquired during internship to solve environmental, societal issues and in their future endeavours	
BTITHM401	Organizational Behavior	CO401.1	Students will become more self-aware and will have identified areas of development for long term effectiveness.	
		CO401.2	Students will understand the role that individuals play collectively to perform in organizations.	
		CO401.3	Students will get a clear picture on the various leadership styles and the impact of power and politics in an organization.	
		CO401.4	Students will know perception and decision making and Job Engagement.	
		CO401.5	Students will manage conflict in organizational context and deal with stress.	



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SEM-V	BTITPE503E	Elec-II Data Visualization	CO502.5	To learn connection oriented service
			CO503E.1	To list out various stages of the data visualization.
			CO503E.2	To identify/choose suitable data for the specific data visualization problem.
			CO503E.3	To plot useful plots/charts for data visualization problem under consideration.
			CO503E.4	To interpret the finding from different types of charts/graphs.
	BTITOE504D	Elec-III Human Computer Interaction	CO503E.5	To select the right graph/chart to review datasets.
			CO504D.1	To describe and apply core theories, models and methodologies from the field of HCI.
			CO504D.2	To describe what the user-centred design cycle is and explain how to practice this approach to design interactive software systems.
	BTITL505	Computer Networks and Internetworking Protocols Lab	CO504D.3	To analyze the main features of interactive systems, and explain how to gauge the usability of digital environments, tools and interfaces.
			LO505.1	Understand IP address ,conversion of IP address
			LO505.2	Installation & Packet study through Wireshark software.
	BTITL506 (SE Lab)	Software Engineering and Elective- II Lab	LO505.3	To analyze various protocols at network layer and networking commands
			LO506.1	Identify, understand and define problem statement for mini project.
			LO506.2	Implementation of mini project.
	BTITL506 (DV Lab)	Software Engineering and Elective- II Lab	LO506.3	Documenting the development of mini project.
			LO506.1	Use Python, Pandas for data visualization
			LO506.2	To implement different concepts of data wrangling and functions using python
	BTITP507	Mini Project - I	LO506.3	Explore and work with different plotting libraries
CO507.1			Identify, understand and define problem statement for mini project.	
CO507.2			Implementation of mini project.	
	Internship-II	CO507.3	Documenting the development of mini project.	
		CO1	To demonstrate the knowledge gained during internship with the help of survey report writing and presentation	
		CO2	To discover engineering and management principles useful at specific work environment	
SEM-VI	BTITC601	Operating Systems	CO3	To implement the learning acquired during internship to solve environmental, societal issues and in their future endeavours
			CO601.1	To understand the objectives and functions of Operating System, types and related concepts.
			CO601.2	Comprehend basic concepts of Process Management and Process Synchronization.
			CO601.3	To understand and solve OS related memory management problems.
			CO601.4	To understand and solve process deadlock handling problems
	BTITC602	Database Management Systems	CO601.5	To understand file system management and storage devices.
			CO602.1	Describe the fundamental elements of relational database management systems and data models.
			CO602.2	Demonstrate basic concepts of the relational database design and Relational algebra.
			CO602.3	Populate relational database, formulate SQL queries on database designed and calculate query cost.
			CO602.4	Convert the ER-model to relational tables and apply various normalization techniques.
	BTITPE603A	Software Testing	CO602.5	Explain Transaction Processing & Locking using concept of Concurrency control.
			CO603A.1	Understand Principles of Testing Software development life cycle model.
			CO603A.2	To identify various software testing problems.
			CO603A.3	To solve software testing problems by designing and selecting software test models, criteria, strategies and methods.
			CO603A.4	To apply the techniques learned to improve the quality of software development.
	BTITOE604E	Introduction to Data Science	CO603A.5	Examine real-world entities while testing Object Oriented Software.
			CO604E.1	Understand data science process and apply the basics of Python programming.
			CO604E.2	Understand the mathematical foundations needed for data science.
CO604E.3			Demonstrate how to collect, explore, clean, munge and manipulate data.	
			CO604E.4	Apply programming toolkits of python to Implement different models and study various data science applications along with case studies.



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	BTITPEL708B	Information Security Lab	LO708B.1	Implement substitution, transposition techniques and security algorithms
			LO708B.2	Implement digital signature standard
			LO708B.3	Implement network security tools such as kf sensors, Net stumbler, rootkits
	BTITEL707B	Soft Computing Lab	LO707B.1	To Illustrate the basics of Artificial Neural Network
			LO707B.2	To Demonstrate multilayer perceptron model
			LO707B.3	To demonstrate CNN and Implement various various fuzzy membership functions
			LO707B.4	To demonstrate and Implement Fuzzification and de-fuzzification along with FIS
	BTITP709	Project Phase I*	CO709.1	Analyze the problem, formulation and solution of the selected project using various techniques and tools in Information Technology
			CO709.2	Develop solutions for contemporary real life problems using modern tools for sustainable development.
			CO709.3	Create the documentation of the project development while working in a team and communicate it effectively for the benefit of the society by following the ethical and professional sustainability
			CO709.4	Analyze the IT engineering, finance and management principles for understanding the problems of various domains.
	BTITF710	Field Training / Internship/ Industrial Training- III Evaluation	CO710.1	To demonstrate the knowledge gained during internship with the help of survey report writing and presentation
			CO710.2	To discover engineering and management principles useful at specific work environment
CO710.3			To implement the learning acquired during internship to solve environmental, societal issues and in their future endeavours	
SEM-VIII	BTITC801	Internet of Things#	C801.1	To interpret the vision of IoT from a global context
			C801.2	To determine the market perspective of IoT
			C801.3	To compare and contrast the use of devices, gateways and data management in IoT.
			C801.4	To implement state of the art architecture in IoT
			C801.5	To illustrate the application of IoT in industrial automation and identify real world design constraints.
	BTITC802	Mobile Computing#	C802.1	Comprehend mobile communications systems.
			C802.2	Determine the Mobile Communications and Computing.
			C802.3	Comprehend GSM and other architectures.
			C802.4	Interface a mobile computing system to hardware and networks.
			C802.5	Comprehend Data Synchronization in Mobile Computing.
			C802.6	Comprehend Mobile Devices and Mobile Operating System
	BTITP803	Project Phase II/ Project with Internship**	CO709.1	Analyze the problem, formulation and solution of the selected project using various techniques and tools in Information Technology
			CO709.2	Develop solutions for contemporary real life problems using modern tools for sustainable development.
			CO709.3	Create the documentation of the project development while working in a team and communicate it effectively for the benefit of the society by following the ethical and professional sustainability
			CO709.4	Analyze the IT engineering, finance and management principles for understanding the problems of various domains.

Dr. Bhushan Chaudhari
HOD, IT Department



H.O.D. I.T. Dept.
SVKM's Institute of Technology, Dhule