Dr. Vasantraodada Patil Shetkari Shikshan Mandal's

PADMABHOOSHAN VASANTRAODADA PATIL INSTITUTE OF TECHNOLOGY, BUDHGAON-416304

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(DEGREE PROGRAMME: A.Y. 2024 – 2025)

Part- I

SY B.Tech - Part II

Course Code and Course Name: Engineering Mathematics –III (BTBS301)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTBS301-O1	Understand and apply the properties of Laplace Transform and Fourier Transform.	3	2												
BTBS301-O2	Formulate partial differential equation and solve it for real word problem.	3	2												
BTBS301-O3	Analyse and map different complex functions and Solve integration of complex function by using Cauchy's integral formula.	3	2												

Course Code and Course Name: Discrete Mathematics (BTCOC302)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC302-O1	To perform operations on various discrete structures such as sets functions, relations, and sequences.	3	2	2											1
BTCOC302-O2	To solve problems using counting techniques, permutation and combination, recursion and generating functions.	3	2	2		2									1
BTCOC302-O3	To construct and verify correctness of a expression using truth tables.	3	2	2		2									1
BTCOC302-O4	To use graphs as tools to visualize and simplify Problems.	3	2	2		2									1

Course Code and Course Name:Data Structures (BTCOC303)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC303.1	Know fundamentals of data structures like array, list, linked list, stack, queue, tree, graph, hashing.	3		2									3		1
BTCOC303.2	Identify suitable data structure for application.	2		1									3		
BTCOC303.3	Use data structure to solve problems.			3	2		1						3	2	2
BTCOC303.4	Implement various data structures and algorithm essential for implementing computer based solutions.			2		1							3		2

Course Code and Course Name:Computer Architecture and Organization (BTCOC304)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC304.1	Study of basic structure and operation of a digital computer system	3	2	2											1
BTCOC304.2	Analysis of the design of arithmetic and logic unit and understanding of fixed point	3	3	2		3									1
BTCOC304.3	Understand of different register transfers and instruction types	3	2	1		2									1
BTCOC304.4	Understanding the heirarchical chemical system , cache memories and virtual memory	3	1	2		3									1
BTCOC304.5	Understanding the different ways of communicating with input output devices and stsndard input output interfaces	4	3	4		3									4

Course Code and Course Name: Elective –I Object Oriented Programming in C++(BTCOE305)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOE305-O1	Define and Remember fundamentals of programming such as variables,conditional and iterative execution,methods,etc	3	2	2										1	1
BTCOE305-O2	Understand fundamentals of object-oriented programming in C++,including defining classes,invoking methods,using class libraries,etc	3	2	2		2								1	1
BTCOE305-O3	Use the C++ SDK enviroment to create, debug and run simple C++ programs	3	2	2		2								1	1
BTCOE305-O4	Create small C++ application to solve given problem.	3	2	2		2								1	1

TY B.Tech- Part I

Course Code and Course Name: Database Management (BTCOC501)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC501.01	Will be able to Explains the features of database management systems, architecture of database systems, and the role of database user	3	2	2										1	
BTCOC501.02	Will be able to **design and implement** properly structured databases	3	2	2		2								1	
BTCOC501.03	Will be able to comprehend how to use Structured Query Language (SQL) to define and manipulate database information.	3	2	2		2								1	
BTCOC501.04	Will be able to describe and develop Relational Algebra and Relational Calculus queries.	3	2	2		2								1	

Course Code and Course Name: Theory of Computations(BTCOC502)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC502-O1	Analyze and Design finite automata, pushdown automata, Turing machines, formal	3		2	2	2			3					3	
BTCOC502-O2	Explain the models of computation, including formal languages, grammars and automata, and their connections	3		2							2				

BTCOC502-O3	To Design Finite Automata's for different Regular Expressions and Languages.		3	3	2			3	2							
BTCOC502-O4	Ability to solve different problem		3	3	2			3	2							
Course Code and Course Name: Software Engineering (BTCOC503)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTCOC502-O1	Decompose the given project in various phases of a lifecycle.		2		1				1				1	2		
BTCOC502-O2	Choose appropriate process model depending on the user requirements.	2		2	2	1			1				1	1	1	
BTCOC502-O3	Perform various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.		2	1	2				1				1	2	1	
BTCOC502-O4	Know various processes used in all the phases of the product.		2		1				1				1	1	2	
BTCOC502-O5	Knowledge, techniques, and skills in the development of a software product.	2		2	2				1				1	2		
Course Code and Course Name: Human Computer Interaction (BTCOE504)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTCOE504-O1	Acquire fundamental concepts of computer components functions regarding interaction with human and vice versa.	2	2	2											2	
BTCOE504-O2	Analyze interface problems to recognize what design approach and interaction styles is required in the light of usability standards and guidelines.	3	3	1		3				1					1	
BTCOE504-O3	Utilize basic concepts to construct a user-interaction strategy for a given problem its usability evaluation	2	2	1		2									2	
BTCOE504-O4	Ability to design and develop an interface by using appropriate HCI techniques that are preferred by the use	3	2	2		1			3						1	
Course Code and Course Name: Elective -III Business Communication (BTHM505)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTHM505-O1	To develop new perspectives and equip themselves to meet the demands of a fast-changing world where technology and globalization and other forces have dramatically changed the practice of business communication in recent years.	3	2	1	1	2								1		
BTHM505-O2	Enhance proficiency and competencies in verbal and non- verbal communication skills with a holistic long-term perspective.	3	2	1	1	2								1		
BTHM505-O3	Develop technical communication skills.	3	2	1	1	2								1		
BTHM505-O4	Address contemporary skills, issues and concepts.	3	2	1	1	2								1		
BTHM505-O5	Familiarize the students with the major digital media formats available for business messages	3	2	1	1	2								1		
BTHM505-O6	Develop the ability to write press releases and understand how PR bridges he gap between an organization and its clients.	3	2	1	1	2								1		
B. Tech -Part I																
Course Code and Course Name: AI(BTCOC701)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTCOC701-01	Identify and apply suitable Intelligent agents for various AI applications	3	2			2										
BTCOC701-02	Build smart system using different informed search / uninformed search or heuristic approaches	3	2			2										
BTCOC701-03	Identify knowledge associated and represent it by ontological engineering to plan a strategy to solve given problem	3	2			2										
BTCOC701-04	Apply the suitable algorithms to solve AI problems	3	2			2										
BTCOC701-05	Implement ideas underlying modern logical inference systems	3	2			2										
Course Code and Course Name: Elective - IX Cloud Computing (BTCOE702)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTCOE702-O1	Explain the core concepts of the cloud computing paradigm the characteristics, advantages and challenges brought about by the various models and services in cloud computing.	3	3	2	3	2								2		
BTCOE702-O2	Implement different types of Virtualization technologies and Service Oriented Architecture systems	2		2									2		2	
BTCOE702-O3	Elaborate fundamental concepts in cloud infrastructures	2	2		3							1				
BTCOE702-O4	Illustrate cloud alpplication platforms.	3	1		3	2						2	1			
BTCOE702-O5	Elaborate various cloud computing application	3	2	3	3	2	1				1	2	2	2	1	
Course Code and Course Name: Distributed Systems(BTCOE703)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**	
BTCOE703.1	To learn the principles, architectures, algorithms and programming models used in distributed systems.	3	3	2	3	2					1			2		
BTCOE703.2	Ability to write distributed programs using sockets, RPC/RMI, etc.	2		2									2		2	
BTCOE703.3	Appreciation of the differences in the handling of issues like mutual exclusion, deadlock detection, fault handling, etc. in a centralized system and a distributed			2	2		3					1				
BTCOE703.4	To gain experience in the application of fundamental Computer Science methods and algorithms in the development of distributed systems and distributed systems applications.	3	1		3	2						2	1			

Course Code and Course Name: Cryptography and Network Security(BTCOE704)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTCOE704.1	To understand basics of Cryptography and Network Security.	3	3	2	3	2					1			2	
BTCOE704.2	To be able to secure a message over insecure channel by various means.	2		2									2		2
BTCOE704.3	To learn about how to maintain the Confidentiality, Integrity and Availability of a data.			2	2		3					1			
BTCOE704.4	To understand various protocols for network security to protect against the threats in the networks.	3	1		3	2						2	1		

Course Code and Course Name: Design Thinking (BTCOE705)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTCOE705-O1	Understand the concepts of design thinking approaches		3				3		1				3		
BTCOE705-O2	Create design thinking teams and conduct design thinking sessions				2		2				2		3	2	
BTCOE705-O3	Apply both critical thinking and design thinking in parallel to solve problems		2	3	2		2			3	3	1	3		
BTCOE705-O4	Apply some design thinking concepts to their daily work	1				2		2		2			3	1	3

Dr. Vasantraodada Patil Shetkari Shikshan Mandal's

PADMABHOOSHAN VASANTRAODADA PATIL INSTITUTE OF TECHNOLOGY, BUDHGAON-416304

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(DEGREE PROGRAMME: A.Y. 2024 – 2025)

Part II

S Y B. Tech- Part II

Course Code and Course Name: Design & Analysis of Algorithms(BTCOC401)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTCOC401.1	To introduce fundamental concepts and mathematical tools for algorithm analysis.	3	2	1									1	3	
BTCOC401.2	To explore algorithmic problem-solving techniques including divide-and-conquer, greedy, dynamic programming, backtracking, and branch-and-bound.	3	3	2	1	2							2	3	2
BTCOC401.3	To develop the ability to analyse the efficiency and correctness of algorithms.	3	3	2	1	2							2	3	
BTCOC401.4	To understand the concept of NP-completeness and its relevance in algorithm design	3	3	2	1	1							2	3	

Course Code and Course Name: Operating Systems(BTCOC402)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTCOC402.01	Understand functional architecture of an operating system.	3													
BTCOC402.02	To provide a detailed discussion of the various memory management techniques.		3												
BTCOC402.03	Learn about and understand theoretical concepts and programming constructs used for the operation of modern operating systems.				3				3					2	
BTCOC402.04	Gain practical experience with software tools available in modern operating systems such as semaphores, system calls, sockets and threads.													2	1

Course Code and Course Name: Basic Human Rights (BTHM403)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTHM403.01	Understand the history of human rights.	3	3	3	2	3									
BTHM403.02	Learn to respect others caste, religion, region and culture.			3	2	3									
BTHM403.03	Aware of their rights as Indian citizen.			3		1									
BTHM403.04	Understand the importance of groups and communities in the society	3				3									
BTHM403.05	Realize the philosophical and cultural basis and historical perspectives of human rights.		3	3											

Course Code and Course Name: Probability and Statistics (BTBSC404)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTBS404.01	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe the real life phenomenon.	3	2												
BTBS404.02	Formulation of a Machine Learning problem	3	2												
BTBS404.03	Develop a model using supervised/unsupervised machine learning algorithms for classification/prediction/clustering	3	2												
BTBS404.04	Evaluate performance of various machine learning algorithms on various data sets of a domain.	3	2												
BTBS404.05	Design and Concrete implementations of various machine learning algorithms to solve a given problem using languages such as Python	3	2												

Course Code and Course Name: Digital Logic Design & Microprocessors(BTES405)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02

BTES405.01	Elaborate different types of number systems, and their conversions.	3	2	2									3	3	3
BTES405.02	Design various logic gates and simplify Boolean equations.	3	2	2	3								3	3	3
BTES405.03	Design various flip flops, shift registers and determining outputs.	3	2	2	3								3	3	3

Course Code and Course Name: Python Programming(BTCOL406)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOL406.01	To Apply Fundamental Python Constructs to Solve Programming Problems.	3	2	3		2								2	
BTCOL406.02	To Develop Python Programs Using Functions, Modules, and File Handling	3	3	3		3								2	
BTCOL406.03	To Implement Object-Oriented and Exception Handling Concepts in Python	3	3	3		3								2	

Course Code and Course Name: Seminar -II (BTCOS 407)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOL406.01	Design and develop structured web pages using HTML and CSS with proper layout, tables, forms, and multimedia elements.	3	2	3		3									
BTCOL406.02	Apply JavaScript to create interactive web pages by manipulating DOM elements and implementing client-side logic.	3	2	2		3									
BTCOL406.03	Develop dynamic web pages using PHP for server-side scripting and manage user	3	3	3		3									
BTCOL406.04	Integrate jQuery and AJAX to enhance web application responsiveness, and perform basic CRUD operations using MySQL	3	3	3	2	3									

T Y B. Tech- Part II

Course Code and Course Name: Compiler Design(BTCOC601)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC601- 01	Explain the core concepts of the cloud computing paradigm the characteristics, advantages and challenges brought about by the various models and services in cloud computing.	3	3	2	3	2					1			2	
BTCOC601- 02	Implement different types of Virtualization technologies and Service Oriented Architecture	2		2									2		2
BTCOC601- 03	Elaborate fundamental concepts in cloud infrastructures			2	2		3					1			
BTCOC601- 04	Illustrate cloud alpplication platforms.	3	1		3	2						2	1		

Course Code and Course Name: Computer Networks (BTCOC602)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC602-01	Understand basic network layer design issues and routing algorithms.	1	1										1		2
BTCOC602-02	Implement IPV4 and IPV6.	1	1										1		2
BTCOC602-03	Explain the concepts of congestion control and quality of services.	1	2										1		2

Course Code and Course Name: Machine Learning (BTCOC603)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOC603-01	Develop a good understanding of fundamental principles of machine learning														2
BTCOC603-02	Formulation of a Machine Learning problem		2		3	2	2	2							
BTCOC603-03	Develop a model using supervised/unsupervised machine learning algorithms for classification/prediction/clustering	2		2									2	2	2
BTCOC603-04	Evaluate performance of various machine learning algorithms on various data sets of a domain.	2	3	2	3	2	3						3	2	
BTCOC603-05	Design and Concrete implementations of various machine learning algorithms to solve a given problem using languages such as Python		2	3			2	2						3	

Course Code and Course Name: Elective – IV Internet of Things(BTCOE604)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTCOE604.1	Understand development stages of Internet of Things and its building blocks.	2	2						1	1	1		1		1
BTCOE604.2	Justify the use of sensor/actutator for the development of a smart system as IoT.	2	2	2					1	1	1		1		1
BTCOE604.3	Develop the basic understanding of communication protocols in IoT communication.	2	2	2					1	1	1		1		1
BTCOE604.4	Study the basic data and analytics for IoT.	2	2						1	1	1		1		1
BTCOE604.5	Develop an IoT application using hardware for moving towards smart applications.	2	2						1	1	1		1		1

Course Code and Course Name: Elective – V Consumer Behaviour(BTHM605)		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO01**	**PSO02**
BTHM605-01	Extrapolate the importance of consumer behaviour concept & models in business & consumer decision making process.	2	3		2	1	3	2						3	3
BTHM605-02	Apply factors influencing the Consumer Behaviour, Modeling of Consumer Behaviour.	2	3		2	3	3	2						3	3
BTHM605-03	Understanding the Research framework in Consumer Behaviour	2	3	3	2	3	2	3						2	3
BTHM605-04	Synthesis of consumer decision making process	3	3	3	2	2	3	2						3	3

Course Code and Course Name: Elective – V Copitive Programming (BTCOL606)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO01	PSO02
BTHM605-01	Apply appropriate programming techniques and standard libraries to solve computational problems using online judges.	3	3	2	2	3									
BTHM605-02	Implement and manipulate fundamental data structures and string operations to solve real-world programming challenges.	3	3	3	2	2									
BTHM605-03	Design efficient algorithms for sorting, arithmetic, algebraic, and combinatorial problems using appropriate mathematical and computational techniques.	3	3	3	2	2									