Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Information Technology

Choice Based Credit System (CBCS) in the light of NEP-2020
B.Tech. (Computer Science and Business Systems –TCS)
SEMESTER-III (2025-2029)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCSBS301	PCC	**Formal Language and Automata Theory**	**60**	**20**	**20**	**-**	**-**	**3**	**1**	**0**	**4**

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. Formulate mathematical models for abstract computational problems using the regular, context-free, context-sensitive, and recursively enumerable blocks of the Chomsky hierarchy.
2. Demystify mathematical structures, operational characteristics, closure properties, and parsing bounds of regular expressions and context-free grammars.
3. Detail abstract operational architectures of Turing Machines, undecidability boundaries, Church-Turing thesis parameters, and computational complexity classes.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Model abstract computational systems by designing deterministic (DFA) and non-deterministic (NFA) finite automata equivalent to regular expressions.
2. Prove formal language boundaries and classification properties using mathematical Pumping Lemmas for regular expressions and context-free structures.
3. Construct context-free grammars (CFG) and pushdown automata (PDA) variants using standard normal forms (Chomsky and Greibach) to resolve semantic parsing ambiguities.
4. Design deterministic and multi-tape Turing Machines as computational language enumerators, deciders, and recognizers.
5. Categorize computational language problems into decidable, undecidable, P, NP, and NP-Complete classes using language reduction mechanisms and Cook's Theorem.

SYLLABUS

UNIT I	**10 HOURS**

Introduction: Alphabet, languages and grammars, productions and derivation, Chomsky hierarchy of languages.

Regular languages and finite automata: Regular expressions and languages, deterministic finite automata (DFA) and equivalence with regular expressions, nondeterministic finite automata (NFA) and equivalence with DFA, regular grammars and equivalence with finite automata, properties of regular languages, *Kleene's theorem,* pumping lemma for regular languages, *Myhill-Nerode theorem and its uses,* minimization of finite automata.

UNIT II	**8 HOURS**

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BTCSBS301	PCC	Formal Language and Automata Theory	60	20	20	-	-	3	1	0	4

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Context-free languages and pushdown automata: Context-free grammars (CFG) and languages (CFL), Chomsky and Greibach normal forms, nondeterministic pushdown automata (PDA) and equivalence with CFG, parse trees, ambiguity in CFG, pumping lemma for context-free languages, deterministic pushdown automata, closure properties of CFLs.
Context-sensitive languages: Context-sensitive grammars (CSG) and languages, linear bounded automata and equivalence with CSG.

UNIT III	**7 HOURS**

Turing machines: The basic model for Turing machines (TM), Turing recognizable (recursively enumerable) and Turing-decidable (recursive) languages and their closure properties, variants of Turing machines, nondeterministic TMs and equivalence with deterministic TMs, unrestricted grammars and equivalence with Turing machines, TMsas enumerators.

UNIT IV	**7 HOURS**

Undecidability: Church-Turing thesis, universal Turing machine, the universal and diagonalization languages, reduction between languages and Rice s theorem, undecidable problems about languages.

UNIT V	**8 HOURS**

Basic Introduction to Complexity: Introductory ideas on Time complexity of deterministic and nondeterministic Turing machines, P and NP, NP- completeness, Cook's Theorem, other NP - Complete problems.
YACC, the parser-generating tool.

TEXTBOOKS:

1.	Introduction to Automata Theory, Languages, and Computation John E. Hopcroft, Rajeev Motwani and Jeffrey D. Ullman.

REFERENCE:

1.	Elements of the Theory of Computation, Harry R. Lewis and Christos H. Papadimitriou.
2.	Automata and Computability, Dexter C. Kozen.
3.	Introduction to the Theory of Computation, Michael Sipser.
4.	Introduction to Languages and the Theory of Computation, John Martin.
5.	Computers and Intractability: A Guide to the Theory of NP Completeness, M. R. Gareyand D. S. Johnson.

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BTCSBS301	PCC	**Formal Language and Automata Theory**	**60**	**20**	**20**	**-**	**-**	**3**	**1**	**0**	**4**

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6.	Chapter5 of Introduction to Automata Theory, Languages, and Computation John E. Hopcroft, Rajeev Motwani and Jeffrey D. Ullman.)

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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCSBS302	PCC	Database Management Systems	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. Introduce data abstraction tiers, structural database architecture components, and Relational/Entity-Relationship conceptual data models.
2. Provide comprehensive training in structured relational query languages, transactional algebra, and logical schema normalization workflows.
3. Detail system transaction processing mechanics, ACID durability properties, security compliance vectors, and non-relational database models.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Explain data abstraction layers, physical/logical data independence, database architectures, and object-oriented data models.
2. Construct complex database schemas and data manipulation workflows utilizing relational algebra expressions, tuple calculus, and SQL statements.
3. Analyze relational database schemas to isolate structural anomalies, determine data dependencies, and transform schemas into optimal normal forms (up to BCNF).
4. Evaluate query execution paths, processing strategies, indexing models (B-trees/hashing), and relational algebra optimization algorithms.
5. Design secure multi-user transaction environments that protect data integrity using concurrency control schedulers, locking protocols, and access controls.

SYLLABUS

UNIT I — 10 HOURS

Introduction: Introduction to Database. Hierarchical, Network and Relational Models.

Database system architecture: Data Abstraction, Data Independence, Data Definition Language (DDL), Data Manipulation Language (DML).
Data models: Entity-relationship model, network model, relational and object oriented data models, integrity constraints, data manipulation operations.

UNIT II — 8 HOURS

Relational query languages: Relational algebra, Tuple and domain relational calculus, SQL3, DDL and DML constructs, Open source and Commercial DBMS - MYSQL,ORACLE, DB2, SQL server.

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BTCSBS302	PCC	Database Management Systems	60	20	20	30	20	3	0	2	4

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Relational database design: Domain and data dependency, Armstrong's axioms, Functional Dependencies, Normal forms, Dependency preservation, Lossless design.

UNIT III	**8 HOURS**

Query processing and optimization: Evaluation of relational algebra expressions, Query equivalence, Join strategies, Query optimization algorithms.
Storage strategies: Indices, B-trees, Hashing.

UNIT IV	**7 HOURS**

Transaction processing: Concurrency control, ACID property, Serializability of scheduling, Locking and timestamp based schedulers, Multi-version and optimistic Concurrency Control schemes, Database recovery.

Database Security: Authentication, Authorization and access control, DAC, MAC and RBAC models, Intrusion detection, SQL injection.

UNIT V	**8 HOURS**

NoSQL: Introduction to NoSQL Database, Structured verses unstructured data, Comparative study of SQL and NoSQL.
Advanced topics: Object oriented and object relational databases, Logical databases, Web databases, Distributed databases, Data warehousing and data mining.

TEXTBOOKS:

1.	Database System Concepts .Abraham Silberschatz, Henry F. Korth and S. Sudarshan.

REFERENCE:

1.	Principles of Database and Knowledge–Base Systems, Vol 1 by J. D. Ullman.
2.	Fundamentals of Database Systems. R. Elmasri and S. Navathe.
3.	Foundations of Databases. Serge Abiteboul, Richard Hull, Victor Vianu.

LABORATORY

1.	C implementation of a Database Editor.

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BTCSBS302	PCC	Database Management Systems	60	20	20	30	20	3	0	2	4

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2.	Download standard data of reasonable size (Unit level data of various rounds of NSS surveys) form internet and implement various SQL commands.

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BTCSBS303	PCC	Data Structures & Algorithms	60	20	20	30	20	3	0	2	4

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COURSE OBJECTIVES:

The student will have ability to:

1. Instill core mathematical and operational principles of algorithmic analysis, time-space complexity bounds, and data abstraction parameters.
2. Teach structural design patterns, memory allocation metrics, and performance optimizations for both linear and non-linear data structures.
3. Train students to implement standardized searching, sorting, hashing pipelines, and file management schemas for high-efficiency computational execution.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Classify data abstraction layers, computational programming styles, and algorithmic performance bounds using Big-O, Omega, and Theta notations.
2. Implement structural data transformations using linear systems including sequential arrays, stacks, queues, and multi-tier linked lists.
3. Execute non-linear sorting and traversal operations utilizing balanced binary trees, AVL trees, B/B+ trees, and directed/undirected graphs.
4. Compare execution efficiencies and algorithmic limits of searching algorithms and sorting methods like merge sort, quick sort, and heapsort.
5. Construct customized file organization models and graph search/traversal workflows optimized for specific time-space trade-off thresholds.

SYLLABUS

UNIT I	8 HOURS

Basic Terminologies and Introduction to Algorithm & Data Organisation: Algorithm specification, Recursion, Performance analysis, Asymptotic Notation - The Big-O, Omega and Theta notation, Programming Style, Refinement of Coding-Time-Space Trade Off, Testing, Data Abstraction.

UNIT II	8 HOURS

Linear Data Structure: Array, Stack, Queue, Linked-list and its types, Various Representations, Operations & Applications of Linear Data Structures.

UNIT III	8 HOURS

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BTCSBS303	PCC	Data Structures & Algorithms	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Non-linear Data Structure: Trees (Binary Tree, Threaded Binary Tree, Binary Search Tree, B & B+ Tree, AVL Tree, Splay Tree) and Graphs (Directed, Undirected), Various Representations, Operations & Applications of Non-Linear Data Structures.

UNIT IV — **7 HOURS**

Searching and Sorting on Various Data Structures: Sequential Search, Binary Search, Comparison Trees, Breadth First Search, Depth First Search Insertion Sort, Selection Sort, Shell Sort, Divide and Conquer Sort, Merge Sort, Quick Sort, Heapsort, Introduction to Hashing.

UNIT V — **7 HOURS**

File: Organisation (Sequential, Direct, Indexed Sequential, Hashed) and various types of accessing schemes.
Graph: Basic Terminologies and Representations, Graph search and traversal algorithms and complexity analysis.

TEXTBOOKS:

1.	Fundamentals of Data Structures, E. Horowitz, S. Sahni, S. A-Freed, Universities Press.
2.	Data Structures and Algorithms, A. V. Aho, J. E. Hopperoft, J. D. UIlman, Pearson.

REFERENCE:

1.	The Art of Computer Programming: Volume1: Fundamental Algorithms, Donald E. Knuth.
2.	Introduction to Algorithms, Thomas, H. Cormen, Charles E. Leiserson, Ronald L. Rivest, Clifford Stein, The MIT Press.
3.	Open Data Structures: An Introduction (Open Paths to Enriched Learning), (Thirty First Edition), Pat Morin, UBC Press.

LIST OF PRACTICALS

1.	Towers of Hanoi using user defined stacks.
2.	Reading, writing, and addition of polynomials.
3.	Line editors with line count, word count showing on the screen.
4.	Trees with all operations.
5.	All graph algorithms.
6.	Saving/retrieving on-linear data structure in/from a file.

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SEMESTER-III (2025-2029)

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BTCSBS304	PCC	SOFTWARE ENGINEERING	60	20	20	30	20	3	0	2	4

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. Establish structured systems engineering methodologies, milestone metrics, and execution models for tracking large-scale commercial software projects.
2. Teach software project cost estimation techniques, risk-mitigation patterns, and formal multi-tier requirements analysis modeling workflows.
3. Introduce unified structural modeling standards (UML), quality assurance models (ISO/CMMI), and white-box/black-box verification matrices.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Contrast capabilities, milestones, and boundary parameters of diverse software development lifecycle models (SDLC) in scaling software configurations.
2. Compute operational schedule metrics, developmental effort, and corporate software costs using algorithmic estimation methods and software economics equations.
3. Model user requirements into formal Software Requirements Specification (SRS) documentation utilizing decision tables, event models, and structural use cases.
4. Design object-oriented structural and behavioral system architectures using the 9 standard Unified Modeling Language (UML) structural and interactive diagrams.
5. Evaluate software reliability, product quality models (McCall/ISO-9126), and code integrity thresholds using systematic white-box coverage and black-box verification techniques.

SYLLABUS

UNIT I — 10 HOURS

Introduction: Programming in the small vs. programming in the large; software project failures and importance of software quality and timely availability; engineering approach to software development; role of software engineering towards successful execution of large software projects; emergence of software engineering as a discipline.

UNIT II — 8 HOURS

Software Project Management: Basic concepts of life cycle models – different models and milestones; software project planning – identification of activities and resources; concepts of feasibility study; techniques for estimation of schedule and effort; software cost estimation models and concepts of software engineering economics; techniques of software project control and reporting; introduction to measurement of software size; introduction to the concepts of risk and its mitigation; configuration management.

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BTCSBS304	PCC	SOFTWARE ENGINEERING	60	20	20	30	20	3	0	2	4

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UNIT III	**9 HOURS**

Software Quality and Reliability: Internal and external qualities; process and product quality; principles to achieve software quality; introduction to different software quality models like McCall, Boehm, FURPS / FURPS+, Dromey, ISO – 9126; introduction to Capability Maturity Models (CMM and CMMI); introduction to software reliability, reliability models and estimation.

Software Requirements Analysis, Design and Construction: Introduction to Software Requirements Specifications (SRS) and requirement elicitation techniques; techniques for requirement modelling – decision tables, event tables, state transition tables, Petri nets; requirements documentation through use cases; introduction to UML, introduction to software metrics and metrics based control methods; measures of code and design quality.

UNIT IV	**7 HOURS**

Object Oriented Analysis, Design and Construction: Concepts -- the principles of abstraction, modularity, specification, encapsulation and information hiding; concepts of abstract data type; Class Responsibility Collaborator (CRC) model; quality of design; design measurements; concepts of design patterns; Refactoring; object oriented construction principles; object oriented metrics.

UNIT V	**8 HOURS**

Software Testing: Introduction to faults and failures; basic testing concepts; concepts of verification and validation; black box and white box tests; white box test coverage – code coverage, condition coverage, branch coverage; basic concepts of black-box tests – equivalence classes, boundary value tests, usage of state tables; testing use cases; transaction based testing; testing for non-functional requirements – volume, performance and efficiency; concepts of inspection.

TEXTBOOKS:

1.	Software Engineering, Ian Sommerville.
2.	Fundamentals of Software Engineering, Carlo Ghezzi, Jazayeri Mehdi, Mandrioli Dino.
3.	The Unified Modelling Language User Guide. Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson Education.
4.	Object-Oriented Software Engineering: using UML, Patterns, and Java. Bernd Bruegge and Allen H. Dutoit

REFERENCE:

1.	Software Requirements and Specification: A Lexicon of Practice, Principles and Prejudices, Michael Jackson.
2.	The Unified Development Process, Ivar Jacobson, Grady Booch, James Rumbaugh.
3.	Design Patterns: Elements of Object-Oriented Reusable Software, Erich Gamma, Richard Helm, Ralph

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BTCSBS304	PCC	SOFTWARE ENGINEERING	60	20	20	30	20	3	0	2	4

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	Johnson, John Vlissides.
4.	Software Metrics: A Rigorous and Practical Approach, Norman E Fenton, Shari Lawrence Pfleeger.
5.	Software Engineering: Theory and Practice, Shari Lawrence Pfleeger and Joanne M. Atlee.
6.	Object-Oriented Software Construction, Bertrand Meyer.
7.	Object Oriented Software Engineering: A Use Case Driven Approach—Ivar Jacobson.
8.	Touch of Class: Learning to Program Well with Objects and Contracts—Bertrand Meyer.
9.	UML Distilled: A Brief Guide to the Standard Object Modelling Language --Martin Fowler
10.	Design Patterns: Elements of Reusable Object-Oriented Software. Erich Gamma, Richard Helm, Ralph Johnson, and John M. Vlissides.

LABORATORY

Development of requirements specification, function oriented designusing SA/SD, object- oriented design using UML, test case design, implementation using C++ and testing. Use of appropriate CASE tools and other tools such as configuration management tools, program analysis tools in the software life cycle.

UML include the following 9 diagrams:

1. Class Diagram
2. Object Diagram
3. Use Case Diagram
4. Sequence Diagram
5. Collaboration Diagram
6. State Chart Diagram
7. Activity Diagram
8. Component Diagram
9. Deployment Diagram

For the following Applications:

- ATM Systems
- Stock Maintenance System
- Remote Procedure Call Implementation

Draw the UMLS diagrams.

1. Define class model for complex number, student class, book class and show it using UML diagram as well as concrete class.
2. Show behavioral modeling through sequence diagram and activity diagram for workflow in a typical log-in, log-out situation.

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Choice Based Credit System (CBCS) in the light of NEP-2020
B.Tech(CSE/IT), B.Tech+MBA(CSE/IT) and B.Tech+M.Tech(CSE/IT)
SEMESTER-V(2023-2027)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
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BTCS501N	**DCC**	**SOFTWARE DESIGN WITH UML+Lab**	**60**	**20**	**20**	**-**	**-**	**3**	**1**	**0**	**4**

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B.Tech. (Computer Science and Business Systems –TCS)

SEMESTER-III (2025-2029)

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BTCSBS305	MDM	Multidisciplinary Minor (Scilab/ Matlab)	0	0	0	0	50	0	0	4	2

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COURSE OBJECTIVES:

The student will have ability to:

1. To Impart the Knowledge to the students with MATLAB software
2. To provide a working introduction to the Matlab technical computing environment.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Understand and learn Matlab and its Workspace.
2. Apply Mathematical functions of Matlab.
3. Identify Plotting Functions.
4. Understand Matlab Programming.
5. Learn Debugging.

SYLLABUS

UNIT I

Introduction to MATLAB

History, basic features, strengths and weaknesses, good programming practices and plan your code

Working with variables, workspace and miscellaneous commands

Creating MATLAB variables, overwriting variable, error messages, making corrections, controlling the hierarchy of operations or precedence, controlling the appearance of floating point number, managing the workspace, keeping track of your work session, entering multiple statements per line, miscellaneous commands.

UNIT II

Matrix, array and basic mathematical functions

Matrix generation, entering a vector, entering a matrix, matrix indexing, colon operator, linear spacing, creating a sub-matrix, dimension, matrix operations and functions matrix generators, special matrices, array and array operations, solving linear equations, other mathematical functions.

UNIT III

Basic plotting

Overview, creating simple plots, adding titles, axis labels, and annotations, multiple data sets in one plot, specifying line styles and colours.

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B.Tech. (Computer Science and Business Systems –TCS)

SEMESTER-III (2025-2029)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCSBS305	MDM	Multidisciplinary Minor (Scilab/ Matlab)	0	0	0	0	50	0	0	4	2

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT IV

Introduction to programming

Introduction, M-File Scripts, script side-effects, M-File functions, anatomy of a M-File function, input and output arguments, input to a script file, output commands.

Control flow and operators

``if ... end" structure, relational and logical operators, ``for ... end" loop, ``while ... end" loop, other flow structures, operator precedence, saving output to a file.

UNIT V

Debugging M-files

Debugging process, preparing for debugging, setting breakpoints, running with breakpoints, examining values, correcting and ending debugging, correcting an M-file

TEXTBOOKS:

1. Digital Image Processing using MATLAB. Rafael C. Gonzalez, Richard E. Woods, Steven Eddins, Pearson Education, Inc., 2004.
2. MATLAB: A Practical Introduction to Programming and Problem Solving. Stormy Attaway, Butterworth-Heinemann.

REFERENCE:

1. https://www.mathworks.com/content/dam/mathworks/mathworks-dot-com/moler/exm/book.pdf
2. https://www.mathworks.com/help/releases/R2014b/pdf_doc/matlab/getstart.pdf

LIST OF PRACTICALS

1. Implementation of various Image Processing Algorithms

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BTCSBS306	PCC	Fundamentals of Management and Business Strategy	60	20	20	-	-	3	0	0	3

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. Introduce the historical evolution of management thoughts, classical/neoclassical frameworks, and functional operations within organizational design architectures.
2. Foster a detailed understanding of individual cognitive behaviors, personality matrices, perception models, and structural workplace motivational systems.
3. Detail strategic governance tools, Porter's industry forces, portfolio analysis matrices, and McKinsey's structural frameworks for corporate strategy execution.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. This course will teach students the management theories, evolution of management over the years and few basic concepts without going into the details.
2. After studying this course the students will develop an understanding about how organizations work and find it easier to grasp the intricacies of other management areas such as finance, marketing, strategy etc. which will be taken up in future terms.

SYLLABUS

UNIT I — 8 HOURS

Management Theories: Concept and Foundations of Management, Evolution of Management Thoughts Contribution of Management Thinkers: Taylor, Fayol, Elton Mayo etc.
Functions of Management- Planning, Organizing, Staffing, Directing, Controlling.

UNIT II — 8 HOURS

Organization Behaviour: Introduction, Personality, Perception, Learning and Reinforcement, Motivation.
Organizational Design: Classical, Neoclassical and Contingency approaches to organizational design; Organizational theory and design.

UNIT III — 9 HOURS

Managerial Ethics: Ethics and Business, Ethics of Marketing & advertising, Ethics of Finance & Accounting, Decision – making frameworks, Business and Social Responsibility, International Standards, Corporate Governance, Corporate Citizenship, Corporate Social Responsibility.

UNIT IV — 7 HOURS

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Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Introduction to Strategic Management- Importance of Strategic Management, Core Competence as the Root of Competitive Advantage, Five Forces of Industry Attractiveness that Shape Strategy, The concept of Strategic Groups, and Industry Life Cycle.

UNIT V **8 HOURS**

Corporate Strategy and Growth Strategies: The Motive for Diversification, Related and Unrelated Diversification. Business Portfolio Analysis, Strategic Alliances, Joint Ventures, and Mergers & Acquisitions and The 7S Framework.

TEXTBOOKS:

1. Richard L. Daft, Understanding the Theory and Design of Organizations.
2. Robert M. Grant (2012). Contemporary Strategic Management, Blackwell, 7th Edition.

REFERENCE:

1. M.E. Porter, Competitive Strategy, 1980. M.E. Porter.
2. Competitive Advantage, 1985 Richard Rumelt (2011).
3. Good Strategy Bad Strategy: The Difference and Why It Matters.
4. Stephen P. Robbins, Timothy A. Judge, Neharika Vohra, Organizational Behaviour.

Home Assignment:

The topic for class discussion will be mentioned beforehand and students should be ready to discuss these topics (in groups) in class. Students are required to meet in groups before coming to class and prepare on the topic. Few topics are mentioned below as examples. Instructor can add or change any topic as per requirement.

1. Topic: Corporate social responsibility (CSR) and HRM implications: What does it mean to be socially responsible within an increasingly financially driven market economy?

2. Topic: Leaders are Born, Not Made! The debate.

3. Latest business events would be discussed in class and students should be ready to discuss these events (in groups). The topic will be mentioned beforehand. Students are required to meet in groups before coming to class and prepare on the topic.

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B.Tech(CSE/IT), B.Tech+MBA(CSE/IT) and B.Tech+M.Tech(CSE/IT)
SEMESTER-V(2023-2027)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME					L	T	P	CREDITS
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCS501N	**DCC**	**BUSINESS STRATEGY**	**60**	**20**	**20**	**-**	**-**	**3**	**1**	**0**	**4**

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Chairperson	Chairperson	Controller of Examination	Registrar
Board of Studies, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore	Faculty of Studies, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore	Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore	Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Information Technology

Choice Based Credit System (CBCS) in the light of NEP-2020

B.Tech. (Computer Science and Business Systems –TCS)

SEMESTER-III (2025-2029)

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BTCSBS307	PC C	Business Communication and Value Science II	0	0	0	30	20	0	0	2	1

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. To develop effective professional communication and business writing skills for corporate and digital workplaces.
2. To enhance interpersonal, leadership, presentation, and teamwork skills for professional growth and employability.
3. To cultivate ethical values, emotional intelligence, critical thinking, and workplace readiness aligned with industry requirements.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Demonstrate effective verbal, written, and digital communication skills in professional environments.
2. Apply interpersonal, leadership, presentation, and teamwork skills in workplace and collaborative settings.
3. Analyze workplace situations using ethical values, emotional intelligence, and problem-solving abilities for career readiness.

SYLLABUS

UNIT I

Corporate Communication Fundamentals

· Communication process and workplace communication
· Verbal, non-verbal, and cross-cultural communication
· Professional etiquette and corporate behavior
· Active listening and business conversation skills
· Communication barriers and strategies for effective communication

Activity: Elevator Pitch Activity where students introduce themselves professionally in 60 seconds

UNIT II

Business Writing and Professional Documentation

· Business emails and email etiquette
· Corporate letters and official correspondence
· Resume, CV, LinkedIn profile, and cover letter writing
· Report writing, proposals, and executive summaries
· Meeting agenda, minutes, notices, and memos

Activity: Mini Report Writing Activity based on an industrial visit, seminar, or case study

Chairperson	Chairperson	Controller of Examination	Registrar
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BTCSBS307	PC C	Business Communication and Value Science II	0	0	0	30	20	0	0	2	1

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

UNIT III

Presentation, Interpersonal, and Employability Skills

- Public speaking and presentation techniques
- Group discussions and team communication
- Interview skills and HR interaction
- Negotiation and conflict management
- Leadership, collaboration, and workplace professionalism

Activity: Campus Recruitment Simulation including GD, presentation, and interview rounds

UNIT IV

Value Science, Ethics, and Emotional Intelligence

- Human values and professional ethics
- Emotional intelligence in corporate life
- Workplace diversity and inclusion
- Stress management and work-life balance
- Corporate social responsibility and ethical decision-making

Activity: CSR Campaign Design Activity where groups create a social responsibility initiative for a company

UNIT V

Digital Communication and Industry Readiness

- Digital and virtual workplace communication
- Communication using collaboration tools
- Social media professionalism and personal branding
- Critical thinking and problem-solving in workplace scenarios
- Industry expectations, adaptability, and career readiness

TEXTBOOKS:

1. Lesikar, Raymond V., and Marie E. Flatley. Business Communication: Connecting in a Digital World. McGraw Hill Education, 2015.
2. Rizvi, M. Ashraf. Effective Technical Communication. McGraw Hill Education, 2017.
3. Raman, Meenakshi, and Sangeeta Sharma. Technical Communication: Principles and Practice. Oxford

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University Press, 2015.

4. Goleman, Daniel. Emotional Intelligence: Why It Can Matter More Than IQ. Bloomsbury Publishing, 2005.
5. Ghosh, Meeta. Business Communication Skills. Pearson Education, 2012.

LIST OF PRACTICALS

1. Role Play on Workplace Communication
2. Active Listening and Business Conversation Exercise
3. Business Email Drafting Practice
4. Resume and Cover Letter Preparation
5. LinkedIn Profile Development
6. Report Writing and Executive Summary Preparation
7. Group Discussion and Team Communication Activity
8. PowerPoint Presentation and Public Speaking
9. Mock Interview and HR Interaction
10. Case Study Analysis on Workplace Ethics
11. Emotional Intelligence and Stress Management Reflection
12. Virtual Meeting and Digital Collaboration Tool Practice

Suggested e- resources (Websites/e- books)

1. https://nptel.ac.in/courses/109107121?utm_source

ADDITIONAL RESOURCES

A. Value addition to course content/ Skill enhancement content:
Corporate Etiquette and Workplace Communication

B. Remedial classes for slow learners:
Additional practice sessions for speaking and writing activities

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			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCSBS308		Indian Constitution (Non Credit)	-	-	-	-	-	-	-	-	-

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES:

The student will have ability to:

1. Create awareness about the Constitution of India, Fundamental Rights and Duties, Directive Principles.
2. Learn the role of Prime Minister, President and the Council of Ministers and the State Legislature.
3. Learn the divisions of executive, legislative and judiciary and so on.
4. Know how a municipal office, panchayat office etc. works.
5. Understand the importance and role of Election Commission Functions.

COURSE OUTCOMES:

Upon completion of the subject, students will be able to:

1. Know the importance of Constitution and Government.
2. Become Good Citizens and know their fundamental rights, duties and principles.
3. Learn about the role of PM, President, Council of Ministers and Local Administration.
4. Understand the importance of Election Commission.
5. Know about Secularism, Federalism, Democracy, Liberty, Freedom of Expression, Special Status of States etc.

S. No.	Title	Topics to be covered
1	Introduction	'Constitution' meaning of the term, Indian Constitution: Sources and constitutional history, Features: Citizenship, Preamble, Fundamental Rights and Duties, Directive Principles of State Policy
2	Union Government and its Administration	Structure of the Indian Union: Federalism, Centre - State relationship, President: Role, power and position, PM and Council of ministers, Cabinet and Central Secretariat, Lok Sabha, Rajya Sabha.
3	State Government and its Administration	Governor: Role and Position, CM and Council of ministers, State Secretariat: Organization, Structure and Functions.
4	Local Administration	District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation, Pachayati raj: Introduction, PRI: Zila Pachayat, Elected officials and their roles, CEO Zila Pachayat: Position and role, Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy

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BTCSBS308		Indian Constitution (Non Credit)	-	-	-	-	-	-	-	-	-

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit; ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

5	Election Commission	Election Commission: Role and Functioning, Chief Election Commissioner and Election Commissioners, State Election Commission: Role and Functioning, Institute and Bodies for the welfare of SC/ST/OBC and women.

TEXTBOOKS:

1. Indian Polity' by Laxmikanth 5th Edition, McGraw Hill Edition.
2. Indian Constitution by Subhash C. Kashyap, Vision Books Publisher.
3. Introduction to Indian Constitution' by D.D. Basu, 21st Edition, LexisNexisPublisher.
4. Indian Administration by avasthi and avasthi-by lakshminarain agarwal publication.

ASSESSMENT COMPONENTS

Students should be evaluated by Faculty coordinator
Evaluation methods used may consist of the following:
Assignment report
Presentation by the student

EVALUATION THROUGH SEMINAR PRESENTATION

The students will present their report though a seminar, which will be held by a Faculty Coordinator constituted by the concerned department as per norms of the institute. The evaluation through seminar presentation will be based on the following criteria.
a) Quality of material presented.
b) Effectiveness of presentation.
c) Depth of knowledge and skills.