



ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

M.C.A. Scheme of Examination & Syllabus 2026-27

Annexure- I

CREDIT FRAMEWORK STRUCTURE

Semester		I	II	III	IV		Total Credits	
Course Category					A	B	A	B
Basics Science Course	BSC/ESC	3	-	-	-	-	3	3
Program Core Course (PCC)	Program Courses	10	14	9	6	14	39	47
Program Elective Course (PEC)		-	4	4	-	3	8	11
Skill Enhancement Courses (SEC)	Skill Courses	8	3	6	-	1	17	18
Projects	Experiential Learning Courses	-	-	2	-	3	2	5
Internships		-	-	-	15	-	15	-
Total Credits		21	21	21	21	21	84	84

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FIRST SEMESTER

				Hours per week				Maximum Marks					
Sr. No.	Course Category	Course Code	Course Title	L	T	P	Credits	Mid-Sem Examination	Continual Assessment	End-Sem Examination	Total Marks	Min. Passing Marks	No. of Hours for ESE
1	SEC	26MC101T	Problem Solving through Programming	3	-	-	3	20	20	60	100	50	3
2	SEC	26MC101P	Problem Solving through Programming Lab	-	-	2	1	-	25	25	50	25	-
3	PCC	26MC102T	Digital Logic Fundamentals	3	-	-	3	20	20	60	100	50	3
4	BSC	26MC103T	Probability and Statistics	3	-	-	3	20	20	60	100	50	3
5	PCC	26MC104T	Operating Systems	3	-	-	3	20	20	60	100	50	3
6	PCC	26MC104P	Operating Systems Lab	-	-	2	1	-	25	25	50	25	-
7	SEC	26MC105P	Web Programming Lab	-	-	2	1	-	25	25	50	25	-
8	PCC	26MC106T	Computer Architecture & Organization	3	-	-	3	20	20	60	100	50	3
9	SEC	26MC107P	Software Lab-1 (Python)	-	-	2	1	-	25	25	50	25	-
10	SEC	26MC108P	Career Development I	-	-	2	1	-	50	-	50	25	-
11	SEC	26MC109P	Technical Skill Development-I	-	-	2	1	-	50	-	50	25	-
Total				15	0	12	21	100	300	400	800	400	

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MASTER OF COMPUTER APPLICATIONS

FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26MC101T	Problem Solving through Programming	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
This course is intended - To develop logical thinking and problem-solving skills using fundamental programming concepts. - To understand and apply algorithms, flowcharts, and basic programming constructs for solving computational problems. - To design, implement, and test simple programs using a high-level programming language.	Students will be able to - Apply control structures appropriately to solve problems - Construct code involving arrays and string concepts - Ability to understand functional code organization - Implement code involving structures and union concepts - Demonstrate file handling through programs

Unit I: C CONTROL STRUCTURES	[9 Hrs]
History of C - Memory concepts - Constants, variables, data types and keywords - Instructions and operators - Decision control structure - if... else construct - Loop control structure - For loop - While loop - Case control structure - Switch case - Break - Continue	
Unit II: ARRAYS AND STRINGS	[9 Hrs]
Pointers to arrays - Passing Arrays to functions - Array of pointers - Three-dimensional arrays Strings - Characters - Character handling library - String I/O - String conversion - String comparison - String search - Pointers and strings - 2D array of strings - Array of pointers to strings - Passing strings to functions	
Unit III: FUNCTIONS AND POINTERS	[9 Hrs]
Functions - Library functions - Function definitions - Prototype - Scope - Storage classes - Call by value - Pointers variable - Definition and initialization - Pointer operators - Calling function by reference - const qualifier with pointers - size of operator - Pointer arithmetic - Pointers to functions - Recursion	
Unit IV: STRUCTURES, UNIONS, ENUMS AND BIT OPERATIONS	[9 Hrs]
Structure definitions - Initializing structures - Accessing structure members - Array of structures - Pointers to structures - Using structures with functions - Self-referential structures - typedef - Unions - Bitwise operators - Bit fields - Enumeration constants	
Unit V: CONSOLE I/O, FILE HANDLING AND PREPROCESSORS	[9 Hrs]
Types of I/O - Formatted and unformatted console I/O functions - Printing integers, floats and strings - Conversion specifiers - Reading formatted input - Command line arguments - File processing - Data hierarchy - File and streams - File operations - Sequential-Access file - Random Access file - Error handling - Stderr - Exit A case study - Preprocessors - symbolic constants and macros - File inclusion - Conditional compilation	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	C: How to Program	P. J. Deitel, H. M. Deitel	9 th	Pearson Education prentice Hall
2	Programming with C	Byron Gottfried	4 th	McGraw Hill

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	The Complete Reference C	Herbert Schildt	4 th	McGraw Hill
2	The C Programming Language	Brian W. Kernighan, Dennis M. Ritchie	2 nd	Pearson Education
3	Let us C	Yashavant Kanetkar	17 th	BPB

Online Resources

1	https://github.com/pdeitel/CHowToProgram9e
2	https://www.programiz.com/c-programming

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MASTER OF COMPUTER APPLICATIONS

FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26MC101P	Problem Solving through Programming Lab	-	-	2	1	-	25	25	50

Course Objectives	Course Outcomes
This course is intended 1. To develop logical thinking and problem-solving skills using fundamental programming concepts. 2. To understand and apply algorithms, flowcharts, and basic programming constructs for solving computational problems. 3. To design, implement, and test simple programs using a high-level programming language.	Students will be able to 1. Apply control structures appropriately to solve problems 2. Construct code involving arrays, string, structures and union concepts 3. Demonstrate file handling through programs

Expt. No. Experiments based on

- 1 Implement decision control structure - if... else, nested if... else
- 2 Implement loop and case control structure
- 3 Implement array concept - single and 2D
- 4 Implement string manipulations - library and user defined
- 5 Implement function concept
- 6 Implement pointer concept using function
- 7 Implement concept of structures and union to understand difference between them
- 8 Implement bit wise operations
- 9 Implement different file related operations
- 10 Micro Project

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	C: How to Program	P. J. Deitel, H. M. Deitel	9 th	Pearson Education prentice Hall
2	Programming with C	Byron Gottfried	4 th	McGraw Hill

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	The Complete Reference C	Herbert Schildt	4 th	McGraw Hill
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Online Resources

1	https://github.com/pdeitel/CHowToProgram9e
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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
						MSE	CA	ESE	Total
26MC102T	Digital Logic Fundamentals	3	-	-	3	20	20	60	100

Course Objectives	Course Outcomes
This course is intended 1. To understand the basic concepts of digital systems, number systems, and logic gates. 2. To analyze and design combinational logic circuits using Boolean algebra and logic minimization techniques. 3. To understand the working principles of sequential circuits and basic digital components used in computer systems.	Students will be able to 1. Interpret different number system, binary codes and digital logic elements 2. Acquaint with elementary postulates of Boolean algebra and methods for simplifying Boolean expressions 3. Illustrate the procedures for the analysis and design of combinational circuits 4. Demonstrate the procedures for the analysis and design of sequential circuits 5. Analyze and design digital circuits using various types of registers and counters
Unit I: NUMBER SYSTEM AND BINARY CODING	[9 Hrs]
Number system representation: Decimal number system- Binary number system- octal number system- hexadecimal number system- number system conversion- signed number representation- complement system: 1's complement – 2's complement- 9's complement – 10's complement- Binary arithmetic operations: addition- subtraction- multiplication- division- Coding schemes: BCD, Gray code and ASCII code.	
Unit II: BOOLEAN LOGICS AND LOGIC GATES	[9 Hrs]
Introduction - Boolean Logics and Logic Gates - Universal Gates and properties- Boolean Algebra Theorems - Boolean Function - Minterms- Maxterms- Karnaugh Map (K-Map)- Sum of Products (SOP) and Product of Sums (POS). Don't Care Conditions.	
Unit III: COMBINATIONAL CIRCUITS	[9 Hrs]
Introduction- Combinational logic- Half Adder – Full adder- Half subtractor- Binary adder - Binary adder subtractor- BCD adder- Binary multiplier- Encoder- Decoder- Multiplexer- Demultiplexer- BCD to seven segment display.	
Unit IV: SEQUENTIAL CIRCUITS	[9 Hrs]
Sequential logic- Introduction- Latches- Clock - Types of Clock – positive, Negative edge triggered - Flip-Flops (with Timing Diagram) - SR Flip Flop – D Flip Flop – JK Flip Flop - Edge Triggered Flip Flops- Master-Slave JK Flip-Flop- Timing diagram.	
Unit V: REGISTERS AND COUNTERS	[9 Hrs]
Introduction to Register and Counter – Shift registers – Serial Transfer – Modes of operations- Serial in Serial Out (SISO) - Serial in Parallel out (SIPO) – Parallel in Serial Out (PISO)- Parallel in Parallel out (PIPO)- Bidirectional Shift Register - Synchronous Counter - Asynchronous Counters - Binary Counters - Up/Down counter - BCD counter.	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Digital Principles and Applications	Donald P. Leach, Albert Paul Malvino, Goutam Saha	8th	Tata McGraw-Hill
2	Logic and Computer Design Fundamentals	Morris M. Mano, Charles R. Kime	2nd	Pearson Education
3	Computer Architecture and Organization	William Stallings	8th	PHI

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Digital Computer Fundamentals	Thomas C. Bartee	6th	Tata McGraw-Hill
2	Computer Organization and Design	David A. Patterson, John L. Hennessey	5th	Morgan Kaufmann / Elsevier

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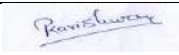


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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC103T	Probability and Statistics	3	-	-	3	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended - To understand the fundamental concepts of probability and statistical methods used in data analysis. - To apply probability distributions and statistical techniques for solving real-world problems. - To develop the ability to analyze, interpret, and draw conclusions from quantitative data using statistical tools.	Students will be able to - Summarize and present the data using exploratory data analysis - Establish the relationship between the frequency distributions (data) and distribution functions (Model) and important characteristics - The sampling distributions and their applications in hypothesis testing - Identify the relationship between the variables and modeling the same - Apply interval estimation techniques to construct confidence intervals for population parameters

Unit I: EXPLORATORY DATA ANALYSIS [9 Hrs]

Definition of Statistics, applications, data types and measurements, graphical representation of data using histogram, line diagram, bar diagram, time series plots; measures of central tendency and dispersion; coefficient of skewness and kurtosis and their practical importance.

Unit II: PROBABILITY AND RANDOM VARIABLES [9 Hrs]

Random experiment, sample space and events. Definitions of probability, addition and multiplication rules of probability, conditional probability and some numerical examples; Random variables: Definition, types of random variables, pmf and pdf of random variables; Mathematical expectation: mean, variance, covariance, mgf and cgf of a random variable(s); Probability distributions: Binomial, Poisson and Normal distributions with their important characteristics

Unit III: SAMPLING DISTRIBUTIONS [9 Hrs]

Concepts of population, sample, parameter, statistic, and sampling distribution of a statistics; Sampling distribution of standard statistics like, sample mean, variance, proportions etc. t, F and Chi-square distributions with statistical properties

Unit IV: TESTING OF HYPOTHESIS [9 Hrs]

The fundamentals of statistical hypothesis testing, including simple and composite hypotheses, formulation of null and alternative hypotheses, statistical tests, critical regions, and the concepts of Type I and Type II errors. The testing of hypotheses using t-test, F-test, and Chi-square test for large sample cases.

Unit V: Multivariate Statistical Analysis [9 Hrs]

Introduction to multivariate data and multivariate random variables; types and applications of multivariate analysis; multivariate descriptive statistics; **mean vector, covariance matrix, correlation matrix, and variance-covariance analysis**; multivariate normal distribution; multiple linear regression and correlation; introduction to **Principal Component Analysis (PCA), Factor Analysis, and Cluster Analysis**; applications of multivariate statistical techniques.

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Fundamentals of Mathematical Statistics	Gupta S.C., Kapoor V.K.	-	Sultan Chand & Sons
2	Applied Statistics and Probability for Engineers	Douglas C. Montgomery, George C. Runger	-	Wiley (Student Edition)

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Mathematical Statistics	Freund J.E.	-	Prentice Hall
2	Statistics for Managers Using Microsoft Excel	Levine D.M., Berenson L.M., Stephen D.	2nd	PHI, New Delhi

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC104T	Operating Systems	3	-	-	3	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended - To understand the fundamental concepts, structure, and functions of operating systems. - To study and analyze process management, memory management, file systems, and scheduling techniques. - To develop an understanding of resource management and synchronization mechanisms in operating systems.	Students will be able to - Demonstrate the fundamental principles of operating system, system structure, system calls, programs and system boot - Evaluate the process scheduling, Thread scheduling, scheduling criteria, critical section problems to calculate the processing time effectively - Implement deadlock system and multiple memory management strategies - Apply the appropriate file system for overall management of any operating system - Analyze the file management concepts using LINUX

Unit I: FUNDAMENTALS of OS [9 Hrs]

Operating system definition, Computer system organization, structure, architecture and operations, process and storage management, Protection and security, Distributed systems, Special purpose systems, Computing Environments, Linux Operating Systems. System structure: operating system services, user interface, system calls, system programs, OS design, Implementation and structure, virtual machines, system boot.

Unit II: PROCESS SCHEDULING [9 Hrs]

Process concepts, scheduling, operations on processes, Inter process communication, Examples of IPC systems, Communication in client server systems, Threads, Multi-threading models, threading issues, Basic concepts, scheduling criteria, scheduling algorithms, Thread scheduling, Multiple-processor scheduling.

Unit III: PROCESS COORDINATION [9 Hrs]

Critical section problems, Peterson solution, Introduction to semaphores, classic problems of synchronization, Monitors, synchronization examples, atomic transaction, System model, deadlock characterization, methods for handling deadlock, deadlock prevention, avoidance, detection and recovery from deadlock.

Unit IV: MEMORY MANAGEMENT [9 Hrs]

Memory Management Strategies: Background, swapping, Memory allocation, Paging, Structure of the page table, Segmentation. Virtual Memory Management: Demand paging, Page replacement, allocation of frames, thrashing, memory mapped files, Allocating kernel memory. Memory management concepts can be demonstrated using Linux.

Unit V: FILE MANAGEMENT [9 Hrs]

File concepts, access methods, directory and disk structure, File system mounting, File sharing, Protection, directory implementation, allocation methods, free-space management. I/O Systems, I/O hardware, Application I/O Interface, Kernel I/O subsystem, Transforming I/O requests to hardware operations.

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating System Concepts	Silberschatz, P.B. Galvin, G. Gagne	9th	Wiley-India
2	Linux System Programming	Robert Love	–	O'Reilly

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating Systems: Internals and Design Principles	William Stallings	7th	Pearson
2	Modern Operating Systems	Andrew S. Tanenbaum, Herbert Bos	4th	Pearson

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC104P	Operating Systems Lab	-	-	2	1	MSE	CA	ESE	Total
						-	25	25	50

Course Objectives	Course Outcomes
This course is intended - To provide hands-on experience with operating system concepts such as process management, memory management, and file handling. - To implement basic operating system algorithms related to CPU scheduling, deadlock handling, and memory allocation. - To develop practical skills in using system calls, shell commands, and programming tools in an operating system environment.	Students will be able to - OS fundamentals, structure, and basic Linux operations. - Analyze process scheduling, multithreading techniques, synchronization and deadlock handling methods. - Illustrate memory management and page replacement strategies with file systems, disk scheduling, and I/O management.

Expt. No. Experiments based on

- 1 Study and execution of basic **Linux commands** for file, directory, and process management
- 2 Program to demonstrate **system calls** (fork(), exec(), wait(), exit()) and creation of parent-child processes.
- 3 Simulation of **CPU Scheduling Algorithms** – FCFS and SJF (Non-preemptive).
- 4 Implementation of **Round Robin Scheduling** with calculation of waiting time and turnaround time.
- 5 Implementation of **Producer-Consumer Problem** using semaphores.
- 6 Simulation of **Deadlock Detection Algorithm** (Banker's Algorithm or detection method).
- 7 Simulation of **Memory Allocation Techniques** – First Fit and Best Fit.
- 8 Implementation of **Page Replacement Algorithms** – FIFO and LRU.
- 9 Program to perform **file operations using system calls** (open(), read(), write(), close()).
- 10 Simulation of **Disk Scheduling Algorithms** – FCFS and SCAN.

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating System Concepts	Silberschatz, P.B. Galvin, G. Gagne	9th	Wiley-India
2	Linux System Programming	Robert Love	–	O'Reilly

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating Systems: Internals and Design Principles	William Stallings	7th	Pearson
2	Modern Operating Systems	Andrew S. Tanenbaum, Herbert Bos	4th	Pearson

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC105P	Web Programming Lab	-	-	2	1	MSE	CA	ESE	Total
						-	25	25	50

Course Objectives	Course Outcomes
This course is intended - To develop practical skills in designing and developing static and dynamic web pages using web technologies. - To implement client-side and server-side programming concepts for interactive web applications. - To understand and apply web development tools, frameworks, and debugging techniques for building functional websites.	Students will be able to - Apply control structures appropriately to solve problems - Construct code involving arrays and string concepts - Implement code involving structures and union concepts and file handling through programs

Expt. No. Experiments based on

- 1 HTML Elements and Attributes
- 2 Links, Images, and Multimedia
- 3 Tables and Forms
- 4 Semantic HTML & Advanced Concepts
- 5 CSS element, Selectors and Properties
- 6 CSS Box Model and Text Styling, Layouts and Positioning
- 7 CSS Menu making, flex, media queries
- 8 Advanced CSS Techniques
- 9 Micro Project

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	HTML and CSS: Design and Build Websites	Jon Duckett	1st	Wiley
2	Learning Web Design	Jennifer Niederst Robbins	5th	O'Reilly Media

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Beginning HTML and CSS	Rob Larsen	1st	Wiley
2	HTML5 and CSS3 Illustrated	Sasha Vodnik	2 nd	Course Technology (Cengage)

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC106T	Computer Architecture and Organization	3	-	-	3	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended - To understand the design of the various functional units and components of computers. - To make the students understand the basic operations involved in execution of an instruction. - To Explain the basic concept of interrupts and their usage to implement I/O control and data transfers. - To explain the function of each element of a memory hierarchy.	Students will be able to - Summarize the organization and operation of digital computers. - Apply knowledge of processor instruction sets and its execution. - Demonstrate computer arithmetic operations on integer and floating-point numbers. - Describe the organization of memory system. - Explain concepts of I/O organization and pipelining of a processor.

Unit I: Basic structure of computer	[9 Hrs]
Functional Units, Architecture of a small accumulator-based CPU, A typical CPU with general register organization, Instruction execution cycle, Addressing modes, Instruction Format. Processing Unit: Execution of a complete instruction, Sequencing of control Signals, types of Buses, Single, Two, multiple bus structure	
Unit II: Computer Arithmetic	[9 Hrs]
Binary Addition, Addition and subtraction, Multiplication of unsigned binary integers, Booth's algorithm for Two's complement multiplication unsigned, Unsigned binary division, IEEE Floating-Point representation, Floating Point arithmetic.	
Unit III: Control Unit	[9 Hrs]
Control Unit operation: Introduction, Micro-operations, Control of the Processor, Hardwired implementation, Micro programmed control: Microinstruction formats, Micro programmed control unit, Functioning of microprogrammed control unit, Microinstruction sequencing techniques.	
Unit IV: The Memory System	[9 Hrs]
Internal organization of memory chip, Static memories, Dynamic RAMs, Read-Only Memories, Memory interleaving, Cache Memory, Mapping techniques, Virtual memory, Memory Management requirements, I/O modules, Programmed I/O, Interrupt- Driven I/O, DMA.	
Unit V: Pipelining and parallel Processing	[9 Hrs]
Pipelining: Introduction, Pipeline organization, Pipelining issues, Memory delays, Branch delays, Parallel Processing, Types of parallel processor systems, Vector processing Processors: RISC & CISC Processors, Pentium processor, superscalar, Graphics Processing Unit (GPU): GPU architecture, CPU vs GPU, parallel processing using GPUs, GPU components and applications. processor	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Computer Organization	V. Carl Hamacher	4th	Mc GrawHill
2	Computer Organization and Design	David A.Patterson & John L. Hennessy Morg.	4th	Morgan Publication

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Computer Architecture & Organization	William Stallings	9th	Pearson
2	Computer Architecture & Organization	John P Hayes	3rd	Mc GrawHil

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits		Evaluation		
26MC107P	Software Lab-1 (Python Basics)	-	-	2	1	MSE	CA	ESE	Total
						-	25	25	50

Course Objectives	Course Outcomes
This course is intended - To develop basic programming skills using Python for solving simple computational problems. - To understand and implement fundamental Python constructs such as variables, data types, control structures, and functions. - To gain hands-on experience in writing, testing, and debugging Python programs.	Students will be able to - Apply conditional and looping statements to solve basic programming problems in Python. - Perform operations on strings, lists, tuples, sets, and dictionaries. - Develop modular Python programs using functions and recursion. - Implement file handling and exception handling techniques in Python programs. - Design and implement a simple micro project using core Python concepts.

Expt. No. Experiments based on

- 1 Python-Conditional Statements
- 2 Looping Statements
- 3 Strings and String Operations
- 4 Lists and List Operations
- 5 Tuples and Sets Dictionary and Dictionary Operations
- 6 Functions & Recursion
- 7 File Handling
- 8 Exception Handling
- 9 NumPy, Pandas
- 10 Micro Project

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	An Introduction to Python and Computer Programming	Zhang Y.	-	Springer Publications
2	Core Python Application Programming	Wesley J. Chun	3rd	Prentice Hall

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Programming Python	Mark Lutz	-	O'Reilly Media Inc.
2	Programming with Python	T. R. Padmanabhan	-	Springer Publications

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FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC108P	Career Development I	-	-	2	1	MSE	CA	ESE	Total
						-	50	-	50

Course Objectives	Course Outcomes
This course is intended - To develop essential communication, interpersonal, and professional skills required for career growth. - To enhance aptitude, logical reasoning, and problem-solving abilities for competitive examinations and placements. - To prepare students for professional environments through personality development and interview preparation skills.	Students will be able to - Demonstrate effective communication and interpersonal skills. - Apply logical reasoning and aptitude skills for problem solving. - Exhibit professional behavior and readiness for interviews and career opportunities.

Unit I [5Hrs]

Number System: - Divisibility Test, LCM/HCF Problems, Factorization, Remainder Theorem, Successive Division.

Number Series: - Missing Number Series, Wrong Number series, Letter Series

Analogy (Number, Letter, Word, Non-Verbal analogy)

Key Skills and Abilities, Goal & Interests

Unit II [5Hrs]

Simple Equations

Percentage: - Percentage to ratio conversion, Successive Percentage, Increase Decrease of Percentage, etc.

Ambition & Knowledge,

Unit III [5Hrs]

Ratio & Proportion: - Joining of two ratios, Proportion, Mean Proportions, Problems on ages

Partnership Problems

true potential of your Branch of Engineering, Engineering Principle from Human Body

Unit IV [5Hrs]

Profit Loss: - Concept of Profit loss, Relation between CP SP Profit and Loss, Problems on Profit Loss.

Discount: - Successive Discount, Relation between MP Discount and Selling Price, Problems based on Discount.

Critical Creative & System Thinking, Cornell Note Taking System,

Unit V [5Hrs]

Simple Interest

Compound Interest

Engineering Habits of mind, need to think Creatively

Text Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative Aptitude By R. S. Aggarwal	R.S. Aggarwal	--	S.Chand
2	Quantitative Aptitude	Shripad Deo	--	Allied Publishers Pvt Ltd
3	A Modern Approach to Verbal & Non-Verbal Reasoning	R.S. Aggarwal	--	

Reference Books

S.N	Title	Authors	Edition	Publisher
1	Quantitative Aptitude for CAT	Arun Sharma	---	MC Graw Hill

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Chairman - BoS	Dean - Academics	Date of Release	Version	



ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

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Scheme of Examination & Syllabus 2026-27

MASTER OF COMPUTER APPLICATIONS

FIRST SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26MC109P	Technical Skill Development-I	-	-	2	1	MSE	CA	ESE	Total
						-	50	-	50

Course Objectives	Course Outcomes
This course is intended - To develop the dynamic web pages - To develop the interactive dynamic web sites	Students will be able to - Demonstrate the importance of JavaScript for designing dynamic pages - Use C# control statement in Java Script. - Design Web pages using DoM - Implement concept of JavaScript OOP - Construct the dynamic web pages using events, exception handling and cookies

Unit I: Introduction of JavaScript	[5Hrs]
Introduction of JavaScript, variables, Data Types, Operators, Function.	
Unit II: C# Control Statement	[5Hrs]
Control structure statement, conditional statement, looping statement, multi-conditional statement, unconditional statement, programs on control statement, comments in java script.	
Unit III: JavaScript Objects; DoM	[5Hrs]
Java script Object, Array, String, Date, Math, Number, Boolean. JavaScript DoM- getElementById(), getElementByClassName(), getElementByName(), getElementByTagName(), JS inner HTML Property.	
Unit IV: JavaScript OOPs	[5Hrs]
JavaScript Class, Object, Prototype, Constructor Method, Static Method, Encapsulation, Inheritance, Polymorphism, Abstraction.	
Unit V: JavaScript Event, exception handling; cookies	[5Hrs]
Responding to window events, responding to mouse movements, responding to mouse clicks, responding to on Blur form events, responding to on Focus form events, Responding to keyboard events. Exception Handling; Cookies	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	HTML; CSS: The Complete Reference	Thomas A. Powell,	5th	McGraw Hill
2	Learning PHP, MySQL, JavaScript, CSS HTML5: A Step-by-Step Guide to Creating Dynamic Websites	Robin Nixon		O'Reilly

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Java Script: The Complete Reference	Thomas Powell	2nd	McGraw Hill
2	Bootstrap: Responsive Web Development	Jake Spurlock		O'Reilly

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