

ADSP Mandal's
Mahavir Mahavidyalaya, Kolhapur
Department of Computer science
B.Sc. Entire - I
Course Title: C Programming (Sem-I)
Course Teacher: Prof. R. R.Mestri
Teaching Plan 2025-26

Month	Theory Component	Practical CIE Component
July 2025	Admission process	
August 2025	Unit I Introduction to C language fundamentals <ul style="list-style-type: none"> • Problem solving process: Problem Analysis, Problem Design: Algorithm and Flowchart, Coding, Debugging and Testing • structure of C program, Hello World C Program, Compilation and Execution of C program (using gcc compiler) • Formatted functions with format specifiers: printf() and scanf() • Identifiers, keywords, Variables, Data types, type casting in C 	
September	Operators and Expressions, Types of errors in C Unit II Control Structures and Array <ul style="list-style-type: none"> • Branching statements: If statement, If-else statement, If else-if ladder, Nested if, switch statement, ternary operator • Looping statements: for loop, while loop, do while loop, nested loop, infinite loop 	Practical based on linux operating system Branching , Looping Statements
October	<ul style="list-style-type: none"> • Jumping statements: break, continue and goto statement • Array: Definition and Advantages of an Array, Array Declaration and Initialization, memory representation of an Array, Accessing array elements, 1-D Array, Multi-Dimensional. 	PRACTICAL BASED ON ARRAY , Functions

	<ul style="list-style-type: none"> • Functions in C, types of functions: library function and user defined function, function declaration, function definition, and calling a function, simple program of addition of two numbers using user defined function. 	
November	<ul style="list-style-type: none"> • Exam Related Work 	
Course Title: Operating System (Sem-I)		
August	Introduction and Operating-Systems Structures: Definition of Operating system, Operating System's role, Operating-System Operations, Functions of Operating System, Computing Environments, Operating-System Structures: Operating-System Services, User and Operating-System Interface, System Calls, Types of System Calls, Operating-System Structure Processes: Process Concept, Process Scheduling, Operations on Processes Interprocess Communication. Threads: Overview, Multicore Programming, Multithreading Models.	
September	Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock Main Memory: Background, Logical address space, Physical address space, MMU, Swapping, Contiguous Memory Allocation, Segmentation, Paging,	
October	Structure of the Page Table Virtual Memory: Background, Demand Paging, Copy-on-Write, Page Replacement, Allocation of Frames, Thrashing Mass-Storage Structure: Overview, Disk Structure, Disk Scheduling, Disk Management File-System Interface: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting, File Sharing File-System Implementation: File-System Structure, File-System Implementation, Directory Implementation, Allocation Methods, Free-Space Management	
November	Exam Related Work	

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Mahavir Mahavidyalaya, Kolhapur
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Teaching Plan 2025-26

Month	Theory Component	Practical CIE Component
December	<p>Pointers and Functions</p> <ul style="list-style-type: none"> • Declaring pointers, use of pointers, pointer to pointer. • Pointer arithmetic, array of pointers, passing pointers to functions. • Passing parameters to functions: call by value and call by reference. • Recursion in C, local and global variables. • Strings in C, string functions: strlen(),strcpy(),strcat(),strcmp(),strlwr(),strupr(),strev() • Storage classes. <p>Dynamic memory allocation: malloc(),calloc(),realloc(),free().</p>	Practical based on pointer, function, string functions
January	<p>Structure, Union, and File Handling</p> <ul style="list-style-type: none"> • Introduction to Structure: declaring a structure, accessing members of astructure, array of structure. • Union: declaring a union, accessing members of a union. • Difference between structure and union. 	Practical based on Structure, Union
February	<ul style="list-style-type: none"> • File handling in C, creating a new file, opening an existing file (fopen(), fclose()), file opening modes(r, w, a, r+, w+, a+, rb, wb, ab, rb+, wb+, ab+), 	PRACTICAL BASED ON file handling

	<p>reading from the file, writing to the file, and appending the file using different file handling functions.</p> <ul style="list-style-type: none"> • fprintf(), fscanf(), fputs(), fgets(), fputc() and fgetc(), fseek(), ftell() and rewind() functions in file handling. • Preprocessors in C: #include, #define, #undef, #ifdef, #ifndef, #if, #else, • #elif, #endif, #error 	
March	<ul style="list-style-type: none"> • Exam Related Work 	
Course Title: Software Engineering (Sem-II)		
December	<p>Unit I Introduction to Software Engineering: Introduction to Software, Definition and need for Software Engineering, Characteristics of good quality software, Software Development Life Cycle. Software Process Models: Linear Sequential Model, Prototyping Model, RAD Model, Incremental Model, Incremental Model, Spiral Model Software Metrics: Definition, Types of metrics: product metrics, process metrics, its advantages.</p>	
January	<p>Software Project Planning Software Project Planning Size Estimation, Cost Estimation and Time Estimation, Project scheduling and Tracking Software Design Process, Design Principles, SRS: introduction, characteristics of SRS.</p> <p>Unit II Software Design & Software Testing Definition of Software Design, Software Design Process, Design Principles,</p>	
February	<p>DFD, Data Dictionary & ERD, Cohesion and coupling, Software Quality Assurance.</p> <p>Software Testing Software Testing Fundamentals White Box Testing, Black Box Testing Software testing strategies, Verification and Validation, System Testing, Unit testing, Integration</p>	

	testing and Debugging Implementation types, Software Maintenance, Maintenance Tasks	
March	Exam Related Work	