**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session (2019-2020)**

**Class: BCA 1st Sem**  **Name of the Teacher: Monika Gogna**

**Subject: Problem Solving through C Period: 5th**

**Paper: BCA-16-104 Room No: 101**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 23-07-2019 to 27-07-2019 | Steps in developing of a program, Data Flow Diagram, Decision Table |
| Week 2 | 29-07-2019 to 03-08-2019 | Algorithm development, Flowchart, Pseudo Code, Testing and Debugging. |
| Week 3 | 05-08-2019 to 10-08-2019 | History of C, Character Set, Identifiers and Keywords, Constants, Types of C Constants, |
| Week 4 | 13-08-2019 to 17-08-2019 | Rules for Constructing Integer, Real and character Constants, Variables, Data Types, rules for constructing variables. C Instructions, Arithmetic operators, Relational operators, Logical operators, Assignment Operators, Type Conversion in Assignments, |
| Week 5 | 19-08-2019 to 24-08-2019 | Hierarchy of Operations, Standard and Formatted Statements, Structure of a C program , Compilation and Execution. UNIT - II Decision Control Structure: Decision making with IF-statement, IF-Else and Nested IFElse, The else if Clause. |
| Week 6 | 26-08-2019 to 31-08-2019 | On Duty Leave |
| Week 7 | 02-09-2019 to 07-09-2019 | While and do-while, for loop and Nested for loop, Case Control Structure: Decision using switch, The goto statement. |
| Week 8 | 09-09-2019 to 14-09-2019 | Library functions and user defined functions, Global and Local variables, Function Declaration, Calling and definition of function, |
| Week 9 | 16-09-2019 to 21-09-2019 | Methods of parameter passing to functions, recursion, Storage Classes in C. |
| Week 10 | 23-09-2019 to 28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Arrays: Introduction, Array declaration, Accessing values in an array, Initializing values in an array, Single and Two Dimensional Arrays, Initializing a 2-Dimensional Array, Memory Map of a 2-Dimensional Array, Passing array elements to a function: Call by value and call by reference, Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function. |
| Week 11 | 30-09-2019 to 05-10-2019 | Arrays of characters, Insertion and deletion operations, Searching the elements in an array, Using matrices in arrays, Passing an Entire Array to a Function. |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | 12 Pointers: Pointer declaration, Address operator “&”, Indirection operator “\*”, Pointer and arrays, Pointers and 2-Dimensional Arrays, Pointer to an Array, Passing 2-D array to a Function, functions. |
| Week 13 | 21-10-2019 to 26-10-2019 | Array of Pointers. Dynamic Memory Allocation: malloc(), calloc(), realloc(), free() |
| Week 14 | 29-10-2019 to 02-11-2019 | Declaring and Initializing string variables, Reading and writing strings, String Handlingfunctions(strlen(), strcpy(), strcmp(), strcat()) |
| Week 15 | 04-11-2019 to 09-11-2019 | Structures and Unions: Declaration of structures, Structure Initialization, Accessing structure members, Arrays of structure |
| Week 16 | 11-11-2019 to 16-11-2019 | Nested structures, Structure with pointers, Union. |
| Week 17 | 18-11-2019 to 23-11-2019 | Files in C: Introduction, Opening and Closing files, Basic I/O operation on files |
| Week 18 | 25-11-2019 to 30-11-2019 | Revision |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session (2019-2020)**

**Class: M.Sc 1st Sem Name of the Teacher: Monika Gogna**

**Subject: Operating System Concepts Period: 1st & 4th**

**Paper: MS-42 Room No: 101 & 202**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 23-07-2019 to 27-07-2019 | . Introduction to Operating System: History, Structure of OS, Functions/ Operations of OS, Types: Single User, Multi-user, Simple Batch Processing, |
| Week 2 | 29-07-2019 to 03-08-2019 | Multiprogramming, Multitasking, Parallel systems, Distributed system, Real time system. |
| Week 3 | 05-08-2019 to 10-08-2019 | Process Management: Process, Process state, Process Control Block; Process scheduling: Scheduling queues, Schedulers, |
| Week 4 | 13-08-2019 to 17-08-2019 | Context switch; Operation on process: Process creation and termination; interrupt mechanism, threads, |
| Week 5 | 19-08-2019 to 24-08-2019 | Scheduling Algorithms: Pre-emptive and non preemptive scheduling, FCFS, SJFS, RRS, priority scheduling, |
| Week 6 | 26-08-2019 to 31-08-2019 | On Duty Leave |
| Week 7 | 02-09-2019 to 07-09-2019 | Multilevel queue scheduling, Multilevel feedback queue scheduling, Inter process communication: Shared memory systems, Message passing systems. |
| Week 8 | 09-09-2019 to 14-09-2019 | Process Synchronization: Concurrent Processes, Race condition, Shared data; Critical section problem: Mutual exclusion, Progress, Bounded waiting; Software solution: Busy form of waiting, lock and unlock primitives, |
| Week 9 | 16-09-2019 to 21-09-2019 | Dekker's algorithm, Peterson's solution, Baker's Algorithm; Synchronization: Semaphores, Monitors, Reader Writer Problem, Producer Consumer Problem, Dinning Philosopher Problem. |
| Week 10 | 23-09-2019 to 28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | System Deadlock: System Model; Deadlock Characterization: Necessary conditions, Resource Allocation graph; Deadlock prevention: Mutual Exclusion, Hold and Wait, No Preemption, Circular wait; |
| Week 11 | 30-09-2019 to 05-10-2019 | Deadlock Avoidance: Safe state, unsafe state, Resource Allocation graph Algorithm, Banker's Algorithm; Deadlock Detection & Recovery from deadlock: Wait-for-graph |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | Memory Management: Hierarchy of memory types, Cache memory: Types: Associative memory, direct mapped, set associative. 6. Memory Allocation: Address binding, Address Space, Memory Protection, Contiguous and Non- Contiguous allocation, Swapping, Fragmentation; |
| Week 13 | 21-10-2019 to 26-10-2019 | Paging: Protection, Shared pages, Techniques for structuring of page table; Segmentation: Segmentation with paging; Virtual 10 Memory: Demand paging; |
| Week 14 | 29-10-2019 to 02-11-2019 | Page replacement Algorithms: FIFO, Optimal, LRU, LFU, MFU, Working set, Thrashing; |
| Week 15 | 04-11-2019 to 09-11-2019 | Storage Management: File(s): Attributes, Operations, Types, Structure; Access Methods: Sequential, Direct access, Index; |
| Week 16 | 11-11-2019 to 16-11-2019 | Directory Structure: Single level, Two level, Tree Structured, Acyclic Graph; File System mounting; File sharing; Protection: Types of access, access control. |
| Week 17 | 18-11-2019 to 23-11-2019 | File system structure, File system implementation, Directory implementation, Allocation methods: Contiguous Allocation, Linked Allocation, |
| Week 18 | 25-11-2019 to 30-11-2019 | Indexed Allocation; Disk scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK; Disk management; Swap space management; RAID. |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session (2019-2020)**

**Class: M.Sc 3rd Sem Name of the Teacher: Monika Gogna**

**Subject: Theory of Computation Period: 6th**

**Paper: MS-69 Room No: 202**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 23-07-2019 to 27-07-2019 | Theory of Automata: Definition, Description of Automata, Transition Systems, Language, Grammar, |
| Week 2 | 29-07-2019 to 03-08-2019 | Deterministic & Non-Deterministic Finite State Machines |
| Week 3 | 05-08-2019 to 10-08-2019 | Equivalence of DFA and NDFA, |
| Week 4 | 13-08-2019 to 17-08-2019 | Finite State Machine with output (Moore Machine and Meally Machine), |
| Week 5 | 19-08-2019 to 24-08-2019 | , Conversion of Moore Machine to Meally Machine & vice-versa, Minimization of Finite Automata. |
| Week 6 | 26-08-2019 to 31-08-2019 | On Duty Leave |
| Week 7 | 02-09-2019 to 07-09-2019 | Formal Languages: Chomsky Classification of Languages, Languages and their Relations, Languages and Automata |
| Week 8 | 09-09-2019 to 14-09-2019 | Regular Sets and Regular Grammars: Regular Expressions, Finite Automata and Regular Expressions, Conversion of NDFA to DFA, Arden’s Theorem, Construction of FA equivalent to Regular Expression, Equivalence of two Finite Automata |
| Week 9 | 16-09-2019 to 21-09-2019 | Equivalence of two Regular Expressions, Pumping lemma for Regular Sets and applications, Closure Properties of Regular Sets, Construction of Regular Grammar generating Transition System for a DFA, |
| Week 10 | 23-09-2019 to 28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | Construction of Transition System accepting Language for a Regular Grammar , limitations of finite state machine. |
| Week 11 | 30-09-2019 to 05-10-2019 | Context Free Languages: Context free grammar, Simplification of Context Free Grammars, Normal Forms for Context Free Grammers: Chomsky Normal Form, Greibach Normal Form, Pumping Lemma, CYK algorithm. |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | PDA: Push down stack machine, Design of deterministic and non-deterministic push-down stack, Parser design. |
| Week 13 | 21-10-2019 to 26-10-2019 | 6. LR(K) Grammars: Properties of LR(K) Grammar, Closure properties of Languages. 7. Turing Machine: Turing machine definition and design of Turing Machine, |
| Week 14 | 29-10-2019 to 02-11-2019 | Church-Turing Thesis, Variations of Turing Machines, combining Turing machine, |
| Week 15 | 04-11-2019 to 09-11-2019 | Universal Turing Machine, Post Machine, Chomsky Hierarchy, Halting problem, Post Correspondence problem. |
| Week 16 | 11-11-2019 to 16-11-2019 | Revision |
| Week 17 | 18-11-2019 to 23-11-2019 | Revision |
| Week 18 | 25-11-2019 to 30-11-2019 | Revision |