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| Mehran University of Engineering and Technology, Jamshoro |
| *FRM-003/00/QSP-004*  *Dec, 01, 2001* |

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| Tentative Teaching Plan | | | | | |
| Department of Software Engineering | | | | | |
| Name of Teacher | Dr. Mohsin Ali Memon/ Engr. Asmatullah | | | | |
| Course Name | Data Structure and Algorithms | | **Course Code** | SW-212 | |
| Batch | 21SW I,II,III | **Year** | **2nd** | **Semester** | **1st** |
| Semester Start Date | 28-11-2022 | | **Semester End Date** | -04-2023 | |

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| # | Topic | Learning Outcome | Delivery Method | Lecture Hours |
| 1 | Introduction | Learn basics of course | Lecture | 1 |
| Abstract data Types | Lecture & Discussion | 2 |
| 2 | Arrays | Array operations | Lecture | 2 |
| Array searching | Lecture & problem solving | 3 |
| 3 | Linked structures | Traversing a linked list | Lecture | 2 |
| Various operation in linked lists | Lecture & problem solving | 3 |
| 4 | Stacks | Various operations in stacks | Lecture | 2 |
| Polish notations and implementation in stacks | Lecture & problem solving | 3 |
| 5 | Queues | Implementation and operations | Lecture & problem solving | 2 |
| Applications of Queue | Lecture | 2 |
| 6 | Hash tables | Structure and Implementation | Lecture | 2 |
| Collision resolution algorithms | Lecture & Problem solving | 3 |
| 7 | Recursion | Factorial, Faboniacci sequence | Lecture | 2 |
| Tower of Hanoi | Lecture & discussion | 2 |
| Recursive Binary search algorithm | Lecture | 1 |
| 8 | Sorting Techniques | Bubble sort, Selection sort, Insertion sort, quick sort  Heap sort | Lecture | 3 |
| 9 | Trees | Properties of trees, traversal of unordered and ordered trees | Lecture | 3 |
| Binary tree trees | Lecture | 2 |
| 10 | Graphs | Storing and searching in a graph | Lecture | 3 |
| Dijkstra’s Algorithm | Lecture | 2 |
| Total | | | | 45 |

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| Signature | | |
| *Signature of Teacher* |  | *Dated*: |
| *Remarks of DMRC* |  | *Dated*: |
| *Signature of Chairman* |  | *Dated*: |