

## EENG212 / INFE212 Algorithms and Data Structures Course Organization

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| Week 1<br>3 Oct. 22   | <b>Review of Teaching Environment and Techniques</b><br><b>Review of Functions in C:</b> Functions; call by value and call by reference  |
| Week 2<br>10 Oct. 22  | <b>Review of Functions in C:</b> Functions; call by value and call by reference<br><b>Review of Arrays in C:</b> Arrays; single subscripted arrays and multiple subscripted arrays.  |
| Week 3<br>17 Oct. 22  | <b>Review of Arrays in C:</b> Arrays; single subscripted arrays and multiple subscripted arrays.<br><b>Review of Pointers in C:</b> Pointers, Structures, Dynamic memory allocation.   |
| Week 4<br>24 Oct. 22  | <b>Review of Pointers in C:</b> Pointers, Structures, Dynamic memory allocation.<br><b>Tutorial on Functions, Arrays and Pointers</b>  |
| Week 5<br>31 Oct. 22  | <b>Introduction to Data Structures in C</b><br><b>Introduction to Data Structures in C</b>   |
| Week 6<br>7 Nov. 22   | <b>Basic Data Architectures and Data Abstraction:</b> Integers, floating point numbers, characters, strings, Abstract Data Types.<br><b>Linked Lists in C:</b> Linked Lists, insertion and deletion, Linked implementation of Stacks, Linked List as a Data Structure, array implementation of Lists. Other List Structures; Circular Lists, Doubly Linked Lists |
| Week 7<br>14 Nov. 22  | <b>Linked Lists in C:</b> Linked Lists, insertion and deletion, Linked implementation of Stacks, Linked List as a Data Structure, array implementation of Lists. Other List Structures; Circular Lists, Doubly Linked Lists.   |
| Week 8<br>21 Nov. 22  | <b>Mid-Term Exam Week</b><br><b>21 Nov. 22 – 3 Dec. 22</b>   |
| Week 9<br>5 Dec. 22   | <b>The Stack and Recursion:</b> Stack as an Abstract Data Type, primitive Stack operations, Representing Stack in C, definition of recursion, recursive functions, and recursion versus iteration<br><b>Queues in C:</b> The Queue as an Abstract Data Type, C implementation of Queues, Priority Queue  |
| Week 10<br>12 Dec. 22 | <b>Trees:</b> Binary Trees, Binary Tree representation, Representing Lists as Binary Trees, Trees and their Applications; Tree Searching, Tree Traversals, insertion and deletion.<br><b>Trees...</b>  |
| Week 11<br>19 Dec. 22 | <b>Pseudo Code, Algorithms, Flowchart, Trace Table.</b><br><b>Pseudo Code, Algorithms, Flowchart, Trace Table.</b>   |
| Week 12<br>26 Dec. 22 | <b>Algorithm Complexity</b><br><b>Algorithm Complexity</b>   |
| Week 13<br>2 Jan 23   | <b>Tutorials Week</b>  |
| Week 14<br>9 Jan 23   | <b>Final Exam Week</b><br><b>9-24 January</b>  |