## QEEE COURSES

## PROGRAMMING IN C AND DATA STRUCTURES

**COURSE CONTENT:**

- Introduction to pointers as a data type; declaration and use; pointer arithmetic; expression evaluation involving pointers, chain of pointers, structure and pointers.

- Pointers and multi-dimensional arrays; Function definition and call using pointers; static and dynamic memory allocation; introduction to heap memory; use of malloc() and free() for dynamic memory;

- Introduction of a singly list data structure; Basic operations on a singly linked list:traversal(), length(), insertion(), deletion(), merge(); search(); sort(); etc.; intuitive algorithm and worst case time complexity of each operation.

- Implementation of linked lists using struct and pointers; Common runtime errors with use of pointers and their redressal. Use of debuggers to detect pointer related run-time errors. Problem solving using singly linked lists.