Object Oriented Programming
And Data Structure
CoE 135

Course Topics:

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1. **Object-oriented programming in C++:** Class hierarchies, object, Encapsulation, Abstraction, Polymorphism, Dynamic binding, Message passing, Messages Association, Interfaces, inheritance, and Operator overloading.
2. **Data Structures:** Pointers and references, Linked structures, Implementation strategies for stacks, queues, and hash tables, Implementation strategies for graphs and trees, Strategies for choosing the right data structure.
3. **Database systems:** definition and role in computer engineering, Components, Database management system (DBMS), Database architectures (possibilities, concept, data independence), and query.
4. **Data modeling:** Concepts (key, foreign key, record, relation), Conceptual models (possibilities, entity-relationship model and UML; strengths and weaknesses), and object oriented models.
5. **Structured query language (SQL):** Fundamental concepts including data definition, query formulation, update sub-language, constraints, and integrity.

REFERENCES:

- Object Oriented Programming In C++, Forth Edition By Robert Lafore.

- Object Oriented Programming With C++, Forth Edition , By Balagurusamy.

- C++ Plus Data Structure, Third Edition By Nell Dale.

- Fundamentals Of Database System, Sixth Edition By Ramez Elmasri And Shamkant B. Navthe