

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 1

**Civil Engineering (Computer Aided Structural Analysis & Design)**

**Subject Name** CASAD Lab - I

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Sr. No	Course content
Students are required to carry out following in laboratory hours,	
1.	Programming: Analysis of structures using C++
2.	Application : Excel spread sheets for the design of (1) Structural elements like slabs, beams, columns, isolated, combined and raft footings, steel connections and members (2) Structures like water tank, retaining walls, Portal frame, Gantry girder, Plate girder etc
3.	Software Usage: Modelling, analysis and design using professional software like STAAD, STRAP, STRUDS, RISA 3D
4.	Drafting : Application of Drafting software like AutoCAD, CadLAB, Microstation

## **Reference Books :**

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| 1. Programming in C++                            | - E. Balaguruswamy |
| 2. Teach yourself C++                            | - Herbert Schildt  |
| 3. Object Oriented programming in Turbo C++      | - Robert Lafore    |
| 4. Introduction to Computer Aided Drafting       | - Voisinet         |
| 5. Mastering AutoCAD                             | - George Omura     |
| 7. Computer programming and engineering analysis | - Syal & Gupta     |