

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M. E. Semester II**  
**Civil Engineering ( Structural Engineering )**

**Subject: - Concrete Technology ( Inter disciplinary Elective II )**

<b>Sr. No.</b>	<b>Course Contents</b>
1	Cement: manufacturing of cement, chemical components, compounds of cement, basic equation, hydration of cement, structure of hydrated cement, volume of products of hydration, mechanical strength of cement gel, physical requirements of cement.
2.	Different types and properties of cement.
3	Different grades of concrete and their mix proportions according to IS recommended guide lines.
4	Introduction to different type of admixtures.
5	Aggregates: Sieve analysis and grading curves. Fineness modulus, grading requirements.
6	Fresh concrete: Workability of concrete, properties and testing. Mixing, compacting and curing requirements of concrete.
7	Strength of concrete: Properties and testing of hardened concrete. Destructive and nondestructive testing of concrete.

**REFERENCE BOOKS :**

1. Neville A. M. Properties of Concrete.
2. Gambhir M. L. Concrete Technology
- 3.

**Practicals to be performed in Laboratory:**

1. Normal consistency of cement.
2. Initial and final setting time of cement
3. Compressive strength of cement.
4. Fineness modulus of aggregates.
5. Test for workability of concrete
6. Compressive strength of concrete by destructive and nondestructive methods.

**Students are supposed to do minimum two (2) concrete mix design in the remaining turns of laboratory as term work problems.**