

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

Subject: - Rehabilitation of structures (Major Elective II)

Sr. No.	Course Content
1.	Durability of concrete: Factors affecting durability of concrete, Corrosion of reinforcements in concrete, Carbonation, Chloride ingress, Alkali-silica reaction, Freeze-thaw effects, Chemical attack, Abrasion, erosion and cavitation, Weathering and efflorescence
2.	Defects and deterioration in buildings, Survey and assessment of structural conditions in RCC structures, Masonry buildings and Steel structures
3.	Non-destructive testing of concrete quality, Non-destructive testing of connections in steel, Corrosion assessment in reinforcements in RCC elements and components in steel structures
4.	Materials for repairs, rehabilitation and retrofitting processes, Methods for repairs, rehabilitation and retrofitting including surface preparation, Study of failures of buildings and lesson learnt, Role of quality control in construction as Preventive measures Maintenance of buildings, Strengthening of Earthquake-damaged buildings, Introduction to Push-over analysis

Reference Books:

1. Concrete Microstructures, properties and materials - P Kumar Mehta and Paulo J. M. Monterio
2. Properties of concrete - A. M. Neville
3. Materials for construction - Lai, James, S.
4. Structural condition assessment - Robert T. Ratay
5. Handbook of retrofitting earthquake damaged buildings
6. Learning from failure – R. N. Raiker