

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. (CIVIL) – (Branch-49)-Construction Management

Year – I (Semester – II) (W.E.F. January 2013)

1724904: - Major Elective – II Maintenance and Rehabilitation of Structures

Sr. No.	Course Content
1	General Quality assurance for concrete construction as built concrete properties strength, permeability, thermal properties and cracking.
2	Influence on Serviceability & Durability Effects due to climate, temperature, chemicals, wear and erosion, Design and construction errors, corrosion mechanism, Effects of cover thickness and cracking, methods of corrosion protection, corrosion inhibitors, corrosion resistant steels, coatings, cathodic protection.
3	Maintenance and Repair Strategies Definitions : Maintenance, repair and rehabilitation, Facets of Maintenance importance of Maintenance Preventive measures on various aspects Inspection, Assessment procedure for evaluating a damaged structure causes of deterioration - testing techniques.
4	Repair Materials and Techniques Special concretes and mortar, concrete chemicals, special elements for accelerated strength gain, Expansive cement, polymer concrete, sulphur infiltrated concrete, ferro cement, Fibre reinforced concrete. Rust eliminators and polymers coating for rebars during repair foamed concrete, mortar and dry pack, vacuum concrete, Guniting and Shotcrete Epoxy injection, Mortar repair for cracks, shoring and underpinning.
5	Repair to Structures Repairs to overcome low member strength, Deflection, Cracking, Chemical disruption, weathering wear, fire, leakage, marine exposure.

Tutorials:-

1. Assignment work is based on above subject contents.
2. Site Visits and Graduate Reports

Reference:

1. Causes, Prevention and Remedies of Cracks in Building, SP 25, Bureau of Indian Standards
2. R.T.Allen and S.C.Edwards, " Repair of Concrete Structures ", Blakie and Sons
3. Santhakumar, A.R., " Training Course notes on Damage Assessment and repair in Low Cost Housing ", RHDC-NBO " Anna University
4. Prescribed Web reference according to subject matters.