

Shantilal Shah Engineering College, Bhavnagar

Applied Mechanics Department

Syllabus of MST/PAT for PDDC Sem-7th (Civil Engineering)

Subject: Retrofitting of Structures (2970602)

Date of Exam: 20/09/2022

<u>Sr.NO.</u>	<u>Syllabus Contents</u>
<u>1</u>	Introduction: Overview of distress, deterioration in concrete structures, Case studies of distressed structures world over, need for repairs and upgrading of structures, General introduction to process (Road-map) to a durable concrete repair
<u>2</u>	Deterioration of concrete structures: Types of deterioration – Signs, causes & symptoms, Mechanism of deterioration – Physical, Mechanical, Chemical, Deterioration due to ageing, Design & construction deficiencies, overloading, water leakage, Fire, Inadequate maintenance, etc. Corrosion of reinforcement (chloride induced, carbonation induced). Visual deterioration of structures- Cracking – Types, causes & characteristics of cracking in various structural components like beam, column, slab, masonry walls. Measurement of cracks, interpretation of the cause of particular type of cracking, effects of cover thickness, Provisions in accordance to IS 456 for ensuring durability in structures
<u>3.</u>	Conditional assessment / Evaluation of structures: Structural assessment: Conditional evaluation / Structural Appraisal of the structure, Damage assessment procedure, Preliminary & Detailed investigation & Rapid visual screening/ inspection of structures Damage Assessment allied Tests (Destructive, Semi-destructive, Non-destructive): Field & laboratory testing procedures for evaluating the structure for strength, corrosion activity, performance & integrity, durability index. Interpretation of the findings of the tests

Sd/-

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