

SYLLABUS

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UNIT – I

Introduction

Deterioration of structures with aging; Need for rehabilitation

Distress in concrete /steel structures

Types of damages; Sources or causes for damages; effects of damages; Case studies

UNIT – II

Damage assessment and evaluation models

Damage testing methods; Non-destructive testing methods

UNIT – III

Rehabilitation methods

Grouting; Detailing; Imbalance of structural stability; Case studies

UNIT – IV

Methods of Repair

Shortcreting; Grouting; Epoxy-cement mortar injection; Crack ceiling

UNIT – V

Seismic Retrofitting of reinforced concrete buildings

Introduction; Considerations in retrofitting of structures; Source of weakness in RC frame building – Structural damage due to discontinuous load path; Structural damage due to lack of deformation; Quality of workmanship and materials; Classification of retrofitting techniques; Retrofitting strategies for RC buildings – Structural level (global) retrofit methods; Member level (local) retrofit methods; Comparative analysis of methods of retrofitting

RECOMMENDED REFERENCES:

1. Diagnosis and treatment of structures in distress by R.N.Raikar, Published by R&D Centre of Structural Designers & Consultants Pvt.Ltd., Mumbai, 1994.
2. Handbook on Repair and Rehabilitation of RCC buildings, Published by CPWD, Delhi, 2002.
3. Earthquake resistant design of structures by Pankaj Agarwal and Manish Shrikhande, Prentice-Hall of India, 2006.