18CEOE03	REPAIR AND REHABILITATION OF BUILDING ELEMENTS	L	T	P	C
		3	0	0	3

Course Objectives:

1. To get the knowledge on causes of deterioration of structure2. To know about the assessment of distressed structures3.To get the knowledge on maintenance of building systems, 4.To know about the repairing of structures and 5. To gain knowledge about the techniques involved in the demolition procedure

Unit I	MAINTENANCE AND REPAIR STRATEGIES	9	+	0

Maintenance, repair and rehabilitation, Facts of Maintenance, importance of Maintenance various aspects of inspection , assessment procedure for evaluating a damaged structure, causes of deterioration.

Unit II	MAINTENANCE OF ELECTRICITY AND DOMESTIC WATER PUMP SYSTEMS	9	+	0

Load rating of lighting devices and usual house hold appliances, electric supply from street line to building,devices for alternate supply during power failure, importance of earth leakage circuit breaker (ELCB),Maintenance of electric system inbuildings.

General specifications of water pumps, centrifugal pumps, jet pumps and submersible pumps, general rules in operation of water pumps. Maintenance of the sump.

Unit III	MATERIALS AND TECHNIQUES FOR REPAIR	9	+	0

Materials for Repair: Special concretes and mortar concrete chemicals construction chemicals Expansive cement polymer concrete sulphur infiltrated concrete Ferro cement Fibre reinforced concrete Rust eliminators and polymers coating for rebars foamed concrete dry packvacuum concrete asphalt sheeting Techniques for Repairs Gunniting, grouting and Shotcrete Epoxyinjection

Unit IV	REPAIRS,REHABILITATION AND RETROFITTING OF BUILDING SYSTEMS	9	+	0

Repairs of RC beams and columns damaged by steel corrosion,repair of rising dampness in walls,repair of efflorescence effect,repair of cracks in concrete structures,repair of rain water,ground water leakage in buildings.

Unit V	DEMOLITION TECHNIQUES	9	+	0

Engineered demolition techniques for dilapidated structures- case studies

Total= 45 Periods

Course Outcomes:

Upon completion of this course, the students will be able to:

CO1	:	Carry out the damage assessment and Rapid Visual inspection of a building showing signs of deterioration and thus should be able to detect the possible cause /source of deterioration.
CO2	:	Know how to Maintain and repair the building systems like electricity,plumbing etc.
CO3	:	Know how of the Concrete repair industry equipped with variety of repair materials and

		techniques.
CO 4		know what to do the various repair works in building systems.
CO 5	:	Demonstrate the dismantling and demolishing structures

Text Books:	
1.	Varghese P.C., *Maintenance Repair Rehabilitation and Minor Works of Buildings*, PHI Learning pvt.ltd.,New Delhi,2014
Reference Books:	
1.	Santhakumar A.R, *Training Course notes on Damage Assessment and Repair in Low cost housing*, "RHDC.NBO" Anna University, july 1992.
2.	Shetty, M.S.,*Concrete Technology-Theory and Practice*, S. Chandand company, New Delhi,1992
2.	RaikarR.N.,*Learningfromfailures- deficienciesindesign,constructionandservices*– R &D centre (SDCPL), raikar bhavan, Bombay,1987
3.	Palaniyappan, N., *Estate management*, Anna Institute of Management, Chennai,1992.
4.	Lakshmipathy, M. etal., *Lecture notes of workshop on Repairs and Rehabilitation of structures*, 29-30thoctober 1999.

CO-PO-PSO MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1					1	1	1	1	1	1	2	1	1		1
CO2					2	1	1	1	1	1	2	1	1		1
CO3					2	1	1	1	1	1	1	1	2		1
CO4					2	1	1	1	1				1		1
CO5					1	2	1	2	2	2	1	1	1		1

1 – Slightly
2 – Moderately
3 – Strongly