

BKN POLYTECHNIC NARNAUL

Lesson Plan

Name of Faculty : VF4

Discipline : Civil

Semester : 6th Semester

Subject : Repair & Maintenance of Buildings

Lesson Plan Duration : 15 Weeks (From January 2019 to April 2019)

****Work load (Lecture / Practical) per week(in hours): Lectures-03, practicals –Nil**

Week	Theory	
	Lecture Day	Topic (including assignment/test)
1 st	1	1- Need for Maintenance Need for maintenance Importance and significance of repair and maintenance of buildings Meaning of maintenance
	2	Objectives of maintenance Factors influencing the repair and maintenance
	3	2- Agencies Causing Deterioration (Sources, Causes, Effects) Definition of deterioration/decay Factors causing deterioration, their classification
2 nd	1	Human factors causing deterioration Chemical factors causing deterioration Environmental conditions causing deterioration
	2	Effects of various agencies of deterioration on various building materials i.e. bricks.
	3	Effects of various agencies of deterioration on various building materials timber.
3 rd	1	Effects of various agencies of deterioration on various building materials timber, concrete, paints.
	2	Effects of various agencies of deterioration on various building materials metals, plastics, stones.
	3	Investigation and Diagnosis of Defects Systematic approach/procedure of investigation
4 th	1	Sequence of detailed steps for diagnosis of building defect
	2	List non-destructive and others tests on structural elements and materials to evaluate the condition of the building and study of three most commonly used tests
	3	REVISION
5 th	1	Sessional test -1
	2	Defects and their roots cause

		Define defects in buildings Classification of defects
	3	Main causes of building defects in various building elements Foundations, basements and DPC
6 th	1	Walls Column and Beams Roof and Terraces Joinery Decorative and protective finishes
	2	Services Defects caused by dampness
	3	Materials for Repair, maintenance and protection Compatibility aspects of repair materials
7 th	1	State application of following materials in repairs: Anti corrosion coatings
	2	Adhesives/bonding aids Repair mortars
	3	Adhesives/bonding aids Repair mortars
8 th	1	Curing compounds Joints sealants Waterproofing systems for roofs Protective coatings
	2	Revision
	3	Sessional test -2
9 th	1	Remedial Measures for Building Defects Preventive maintenance considerations
	2	Surface preparation techniques for repair
	3	Crack repair methods
10 th	1	Epoxy injection
	2	Grooving and sealing
	3	Stitching
11 th	1	Adding reinforcement and grouting
	2	Flexible sealing by sealant
	3	Repair of surface defects of concrete
12 th	1	Bug holes Form tie holes Honey comb and larger voids
	2	Repair of corrosion in RCC elements Steps in repairing

		Prevention of corrosion in reinforcement
	3	Material placement techniques with sketch Pneumatically applied (The gunite techniques) Open top placement
13th	1	Pouring from the top to repair bottom face Birds mouth Dry packing Form and pump
	2	Preplaced – aggregate concrete Trowel applied method
	3	Repair of DPC against Rising Dampness
14th	1	Physical methods Electrical methods Chemical methods
	2	Repair of walls Repair of mortar joints against leakage Efflorescence removal
	3	Waterproofing of wet areas and roofs Water proofing of wet areas Water proofing of flat RCC roofs Various water proofing systems and their characteristics
15th	1	Repair of joints in buildings Types of sealing joints with different types of sealants
	2	Techniques for repair of joints Repair of overhead and underground water tanks
	3	Sessional Test-3

