**Lesson Plan**

\*Name of the Faculty :

Discipline : Civil Engg.

Semester : IV

Subject : Reinforced Cement Concrete

Lesson Plan Duration : 15 weeks (from January, 2018 to April, 2018)

\*\* Work Load (Lecture/ Practical )Per Week (In Hours): Lecture-05

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| Week | **Theory** | |
| **Lecture**  **Day** | **Topic**  **(Including assignment/test)** |
| **1st** | **1** | Concept of reinforced cement concrete |
| **2** | Reinforcement materials |
| **3** | Properties of mild steel and HYSD steel |
| **4** | Loading on structures as per IS: 875 |
| **5** | Discussion and oral test of previous topics |
| **2nd** | **6** | Introduction about methods of R.C.C. Design |
| **7** | Working stress method |
| **8** | Limit state method |
| **9** | Differentiate between above methods |
| **10** | Shear and development length |
| **3rd** | **11** | Shear as per IS:456:2000 by working stress method |
| **12** | Shear strength of concrete |
| **13** | Concept of maximum shear stress |
| **14** | Shear reinforcement |
| **15** | Revision of above topics |
| **4th** | **16** | Introduction of singly reinforced beam |
| **17** | Stress strain curve and neutral axis |
| **18** | Balanced, Under reinforced and over reinforced beam |
| **19** | Moment of resistance for singly reinforced beam |
| **20** | Design of singly reinforced beam |
| **5th** | **21** | Test of above covered syllabus |
| **22** | Concept of limit state method |
| **23** | Assumptions made in limit state of collapse |
| **24** | Partial factor of safety for loads and materials |
| **25** | Design loads,stressblock,paremeters |
| **6th** | **26** | Singly reinforced beam |
| **27** | Theory of singly reinforced beam |
| **28** | Design of singly reinforced beam by limit state method |
| **29** | Numerical practice |
| **30** | Doubts and numerical practice |
| **7th** | **31** | Doubly reinforced beam |
| **32** | Theory of doubly reinforced beam |
| **33** | Design of doubly reinforced beam by limit state method |
| **34** | Numerical problems |
| **35** | Doubly reinforced beam design practice |
| **8th** | **36** | Introduction of T beam |
| **37** | Inverted T beam, isolated T beam and L beam |
| **38** | Revision |
| **39** | Introduction of one way slab |
| **40** | Theory and design of simply supported one way slab |
| **9th** | **41** | Design of simply supported one way slab using limit state method |
| **42** | Sketch detail of design of one way slab |
| **43** | Numerical problems |
| **44** | Practice of numerical problems and doubts |
| **45** | Practice of numerical problems |
| **10th** | **46** | Test of above covered syllabus |
| **47** | Concept of two way slab |
| **48** | Theory and design of two way slab with corner free to lift |
| **49** | Numerical practice |
| **50** | Design of two way slab with no provision for torsional reinforcement by limit state method |
| **11th** | **51** | Sketches of two way slab showing reinforcement detail |
| **52** | Axially loaded column |
| **53** | Definition and classification of columns |
| **54** | Effective length of column |
| **55** | Specifications for longitudinal and lateral reinforcement |
| **12th** | **56** | Design of axially loaded square column |
| **57** | Rectangular short column |
| **58** | Circular short column by LSM |
| **59** | Sketches of different columns showing reinforcement detail |
| **60** | Numerical practice |
| **13th** | **61** | Numerical practice |
| **62** | Concept of prestressed concrete |
| **63** | Introduction of different prestressing methods |
| **64** | Pre tensioning |
| **65** | Post tensioning |
| **14th** | **66** | Advantages of prestressing |
| **67** | Disadvantages of prestressing |
| **68** | Losses in prestress |
| **69** | Revision of prestressed concrete |
| **70** | Tutorial for doubts |
| **15th** | **71** | Test |
| **72** | Tutorial for numerical problems |
| **73** | Tutorial for numerical problems |
| **74** | Tutorial for numerical problems |
| **75** | Revision of syllabus |