

**TENTATIVE LESSON PLAN: (R1922011)**

|  |                                |                           |
|--|--------------------------------|---------------------------|
| <b>Course Title: Strength of Materials-II (R1922011)</b> |                                |                           |
| <b>Section : Sec A</b>                                   | <b>Date : 03-04-2021</b>       | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                  | <b>Prepared By : G.Sahithi</b> | <b>Approved By : HOD</b>  |

**Tools : Black board, PPTs, Model**

| No. of Periods   | TOPIC  | Date       | Mode of Delivery                      |
|--|--|------------|---------------------------------------|
| <b>UNIT –I PRINCIPAL STRESSES AND STRAINS AND THEORIES OF FAILURES</b>   |  |            |                                       |
| CO1 The student will be able to understand the basic concepts of Principal stresses and strains developed in the cross section of the beams on the cross section and stresses on any inclined plane. To impart concepts of failures in the material. |  |            |                                       |
| <b>T1 Strength of Materials by S.S Bhavikatti,</b>   |  |            |                                       |
| <b>T2 Strength of Materials by R.K Bansal, Lakshmi Publications</b>  |  |            |                                       |
| 1  | Introduction   | 06-04-2021 | Lecture interspersed with discussions |
| 2  | Stresses on an inclined section of a bar under axial loading             | 07-04-2021 |                                       |
| 3  | compound stresses  | 08-04-2021 |                                       |
| 4  | Normal and tangential stresses on an inclined plane for biaxial stresses | 09-04-2021 |                                       |
| 5  | Two perpendicular normal stresses accompanied by a state of simple shear | 10-04-2021 |                                       |
| 6  | Mohr's circle of stresses  | 12-04-2021 |                                       |
| 7  | Principal stresses and strains   | 15-04-2021 |                                       |
| 8  | Analytical and graphical solutions.                                      | 16-04-2021 |                                       |
| 9  | Theories of Failures: Introduction                                       | 17-04-2021 |                                       |
| 10   | Maximum Principal stress theory  | 19-04-2021 |                                       |
| 11   | Maximum Principal strain theory  | 20-04-2021 |                                       |
| 12   | Maximum shear stress theory  | 22-04-2021 |                                       |
| 13   | Maximum strain energy theory –   | 23-04-2021 |                                       |
| 14   | Maximum shear strain energy theory.                                      | 24-04-2021 |                                       |
| 15   | Tutorial   | 26-04-2021 |                                       |
| <b>UNIT –II SHEAR FORCE AND BENDING MOMENT</b>   |  |            |                                       |
| CO2 The student will be able to draw the diagrams indicating the variation of the key performance features like bending moment and shear forces  |  |            |                                       |
| <b>T1 Strength of Materials by S.S Bhavikatti,</b>   |  |            |                                       |
| <b>T2 Strength of Materials by R.K Bansal, Lakshmi Publications</b>  |  |            |                                       |
| 16   | Theory of pure torsion   | 27-04-2021 |                                       |
| 17   | Derivation of Torsion equations: $T/J = q/r = N\phi/L$                   | 28-04-2021 |                                       |
| 18   | Assumptions made in the theory of pure torsion                           | 29-04-2021 |                                       |
| 19   | Torsional moment of resistance –   | 30-04-2021 |                                       |
| 20   | Polar section modulus  | 01-05-2021 |                                       |
| 21   | Power transmitted by shafts  | 03-05-2021 |                                       |
| 22   | Combined bending and torsion and end thrust                              | 04-05-2021 |                                       |
| 23   | Design of shafts according to theories of failure                        | 05-05-2021 |                                       |
| 24   | Design of shafts according to theories of failure                        | 05-05-2021 |                                       |

|  |   |            |                                       |
|--|---|------------|---------------------------------------|
| 24   | springs: introduction   | 06-05-2021 | Lecture interspersed with discussion  |
| 25   | Types of springs  | 07-05-2021 |                                       |
| 26   | deflection of close coiled helical springs under axial pull             | 08-05-2021 |                                       |
| 27   | deflection of open coiled helical springs under axial pull              | 10-05-2021 |                                       |
| 28   | deflection of close coiled helical springs under axial couple           | 11-05-2021 |                                       |
| 29   | deflection of open coiled helical springs under axial couple            | 12-05-2021 |                                       |
| 30   | springs in series and parallel.   | 13-05-2021 |                                       |
| 31   | Tutorial  | 15-05-2021 |                                       |
| <p><b>UNIT –III FLEXURAL STRESSES &amp; SHEAR STRESSES</b><br/> CO3 The student will have knowledge of stresses developed in the cross section and bending equations, calculation of section modulus of section for different cross sections</p> <p><b>T1 Strength of Materials by S.S Bhavikatti,</b><br/> <b>T2 Strength of Materials by R.K Bansal, Lakshmi Publication</b></p> |   |            |                                       |
| 32   | Columns and Struts  | 17-05-2021 | Lecture interspersed with discussions |
| 33   | : Introduction  | 18-05-2021 |                                       |
| 34   | Types of columns  | 19-05-2021 |                                       |
| 35   | – Short, medium and long columns  | 20-05-2021 |                                       |
| 36   | Axially loaded compression members                                      | 21-05-2021 |                                       |
| 37   | Crushing load   | 22-05-2021 |                                       |
| 38   | Euler's theorem for long columns  | 24-05-2021 |                                       |
| 39   | Euler's theorem for long columns  | 25-05-2021 |                                       |
| 40   | assumptions   | 26-05-2021 |                                       |
| 41   | derivation of Euler's critical load formulae for various end conditions | 27-05-2021 |                                       |
| 42   | derivation of Euler's critical load formulae for various end conditions | 28-05-2021 |                                       |
| 43   | derivation of Euler's critical load formulae for various end conditions | 29-05-2021 |                                       |
| 44   | derivation of Euler's critical load formulae for various end conditions | 31-05-2021 |                                       |
| 45   | Equivalent length of a column   | 01-06-2021 |                                       |
| 46   | slenderness ratio   | 02-06-2021 | Lecture interspersed with discussions |
| 47   | Euler's critical stress   | 03-06-2021 |                                       |
| 48   | Limitations of Euler's theory –   | 04-06-2021 |                                       |
| 49   | Limitations of Euler's theory –   | 05-06-2021 |                                       |
| 50   | Rankine – Gordon formula  | 07-06-2021 |                                       |
| 51   | Long columns subjected to eccentric loading –                           | 08-06-2021 |                                       |
| 52   | Long columns subjected to eccentric loading –                           | 09-06-2021 |                                       |
| 53   | Secant formula  | 10-06-2021 |                                       |
| 54   | Secant formula  | 11-06-2021 |                                       |

|    |                         |            |
|----|-------------------------|------------|
| 55 | empirical formulae      | 12-06-2021 |
| 56 | Straight line formula – | 14-06-2021 |
| 57 | Prof. Perry's formula   | 15-06-2021 |
| 58 | Tutorial                | 16-06-2021 |

#### UNIT – IV DEFLECTION OF BEAMS

CO4 The student will be able to calculate the deflections in beams under various loading and support conditions.

T1 Strength of Materials by S.S Bhavikatti,

T2 Strength of Materials by R.K Bansal, Lakshmi Publication

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 59 | Stresses under the combined action of direct loading     | 17-06-2021 | Lecture interspersed with discussions |
| 60 | B.M. Core of a section                                   | 18-06-2021 |                                       |
| 61 | determination of stresses in the case of chimneys        | 19-06-2021 |                                       |
| 62 | retaining walls  | 21-06-2021 |                                       |
| 63 | dams   | 22-6-2021  |                                       |
| 64 | conditions for stability                                 | 23-06-2021 |                                       |
| 65 | stresses due to direct loading                           | 24-06-2021 |                                       |
| 66 | B.M. about both axis                                     | 25-06-2021 |                                       |
| 67 | stresses due to direct loading and B.M. about both axis. | 26-06-2021 |                                       |
| 68 | Tutorial   | 28-06-2021 |                                       |

#### UNIT –V THIN AND THICK CYLINDERS

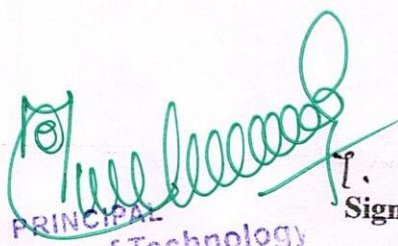
CO5 The student will be able to classify cylinders based on their thickness and to derive equations for measurement of stresses across the cross section when subjected to external pressure.

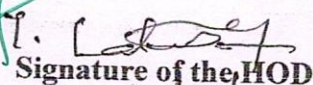
T1 Strength of Materials by S.S Bhavikatti,

T2 Strength of Materials by R.K Bansal, Lakshmi Publication

|    |   |            |                                       |
|----|---|------------|---------------------------------------|
| 69 | Introduction  | 29-06-2021 | Lecture interspersed with discussions |
| 70 | Centroidal principal axes of section  | 30-06-2021 |                                       |
| 71 | Graphical method for locating principal axes                                | 01-07-2021 |                                       |
| 72 | Moments of inertia referred to any set of rectangular axes                  | 02-07-2021 |                                       |
| 73 | Stresses in beams subjected to unsymmetrical bending                        | 03-07-2021 |                                       |
| 74 | Principal axes  | 05-07-2021 |                                       |
| 75 | Resolution of bending moment into two rectangular axes through the centroid | 06-07-2021 |                                       |
| 76 | Location of neutral axis  | 07-07-2021 |                                       |
| 77 | Deflection of beams under unsymmetrical bending.                            | 08-07-2021 |                                       |
| 78 | Shear Centre: Introduction  | 09-07-2021 |                                       |
| 79 | Shear center for symmetrical and unsymmetrical sections                     | 09-07-2021 |                                       |

G. S. Arshithy  
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Signature of the HOD  
3/4/21

## TENTATIVE LESSON PLAN [CE-R1922012]

2-2

|  |                                      |                           |
|--|--------------------------------------|---------------------------|
| <b>Course Title: ENVIRONMENTAL ENGINEERING I</b> |                                      |                           |
| <b>Section : Sec I</b>                           | <b>Date : 06-04-2021</b>             | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                          | <b>Prepared By : N.KRANTHI REKHA</b> | <b>Approved By : HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods  | TOPIC  | Date       | Mode of Delivery                      |
|---|--|------------|---------------------------------------|
| <b>UNIT –I Introduction</b>   |  |            |                                       |
| <b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |            |                                       |
| <b>CO 1: To know about WSS and water demand for city or town.</b>                   |  |            |                                       |
| 1.  | Introduction of wss                                  | 06-04-2021 | Lecture interspersed with discussions |
| 2.  | Importance of wss                                    | 07-04-2021 |                                       |
| 3.  | Necessity of wss                                     | 08-04-2021 |                                       |
| 4.  | Water borne diseases                                 | 09-04-2021 |                                       |
| 5.  | Flow chart of wss                                    | 10-04-2021 |                                       |
| 6.  | Role of environmental engineer and agency activities | 12-04-2021 |                                       |
| 7.  | Water demand   | 15-04-2021 |                                       |
| 8.  | Types of water demand                                | 16-04-2021 |                                       |
| 9.  | Factors eff the WD                                   | 17-04-2021 |                                       |
| 10.   | Estimation of WD for city                            | 19-04-2021 |                                       |
| 11.   | PCD and factors eff                                  | 20-04-2021 |                                       |
| 12.   | DP and its factors                                   | 22-04-2021 |                                       |
| 13.   | Variation of WD                                      | 23-04-2021 |                                       |
| 14.   | Population forecasting methods (9)                   | 24-04-2021 |                                       |
| 15.   | <b>Tutorial</b>                                      | 26-04-2021 |                                       |
| <b>UNIT –II</b>   |  |            |                                       |
| <b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |            |                                       |
| <b>CO 2: To know about collection works and conveyance work.</b>                    |  |            |                                       |
| 16.   | Sources of water                                     | 27-04-2021 | Lecture interspersed with discussions |
| 17.   | Rivers, lakes, reservoirs                            | 28-04-2021 |                                       |
| 18.   | Comparisons of sources                               | 29-04-2021 |                                       |
| 19.   | Capacity of storage reservoir                        | 30-04-2021 |                                       |
| 20.   | Mass curve analysis                                  | 01-05-2021 |                                       |
| 21.   | Ground water sources                                 | 03-05-2021 |                                       |
| 22.   | Springs and wells....etc                             | 04-05-2021 |                                       |
| 23.   | Infiltration galleries                               | 05-05-2021 |                                       |
| 24.   | Types of WBF   | 06-05-2021 |                                       |
| 25.   | Collection and conveyance of water                   | 07-05-2021 |                                       |
| 26.   | Factors gov intake structure                         | 08-05-2021 |                                       |
| 27.   | Types of intakes                                     | 10-05-2021 |                                       |
| 28.   | Gravity and pressure pipes                           | 11-05-2021 |                                       |
| 29.   | Types of pipes                                       | 12-05-2021 |                                       |
| 30.   | Pipe materials and joints                            | 13-05-2021 |                                       |
| 31.   | Design and laying of pipe lines                      | 15-05-2021 |                                       |
| 32.   | <b>Tutorial</b>                                      | 17-05-2021 |                                       |

**UNIT –III****TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE****CO 3: To know about analysis of water that is physical, chemical and bacteriological analysis.**

|     |                               |            |                                       |
|-----|-------------------------------|------------|---------------------------------------|
| 33. | Quality and analysis of water | 18-05-2021 | Lecture interspersed with discussions |
| 34. | Characteristics of water      | 19-05-2021 |                                       |
| 35. | Physical tests                | 20-05-2021 |                                       |
| 36. | Chemical tests                | 21-05-2021 |                                       |
| 37. | Biological tests              | 22-05-2021 |                                       |
| 38. | Analysis of water             | 24-05-2021 |                                       |
| 39. | Comparisons of sources        | 25-05-2021 |                                       |
| 40. | IS WQS                        | 26-05-2021 |                                       |
| 41. | WHO WQS                       | 27-05-2021 |                                       |
| 42. | <b>Tutorial</b>               | 28-05-2021 |                                       |

**UNIT –IV****TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE****CO 4: To know about various treatment methods for the water.**

|     |                                  |            |                                       |
|-----|----------------------------------|------------|---------------------------------------|
| 43. | Treatment of water               | 29-05-2021 | Lecture interspersed with discussions |
| 44. | Flow chart                       | 31-05-2021 |                                       |
| 45. | Treatment methods                | 01-06-2021 |                                       |
| 46. | Theory of sedimentation          | 02-06-2021 |                                       |
| 47. | Design of sedimentation          | 03-06-2021 |                                       |
| 48. | Coagulation                      | 04-06-2021 |                                       |
| 49. | Coagulation with sedimentation   | 05-06-2021 |                                       |
| 50. | filtration                       | 07-06-2021 |                                       |
| 51. | Disinfection                     | 08-06-2021 |                                       |
| 52. | Theory                           | 09-06-2021 |                                       |
| 53. | Chlorination                     | 10-06-2021 |                                       |
| 54. | Other disinfection methods       | 11-06-2021 |                                       |
| 55. | Softening of water               | 12-06-2021 |                                       |
| 56. | Removal of color and odor        | 14-06-2021 |                                       |
| 57. | Removal of iron and manganese    | 15-06-2021 |                                       |
| 58. | Fluoridation and de-fluoridation | 16-06-2021 |                                       |
| 59. | Aeration                         | 17-06-2021 |                                       |
| 60. | Ion exchange                     | 18-06-2021 |                                       |
| 61. | ultra filtration                 | 19-06-2021 |                                       |
| 62. | reverse osmosis                  | 21-06-2021 |                                       |
| 63. | <b>Tutorial</b>                  | 22-6-2021  |                                       |

**UNIT – V****TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE****CO 6: To know about distribution of water to city or town.**

|     |   |            |
|-----|---|------------|
| 64. | Analysis of distribution networks       | 23-06-2021 |
| 65. | Hardy cross and equivalent pipe methods | 24-06-2021 |
| 66. | Components of DS                        | 25-06-2021 |

|     |                                   |            |  |
|-----|-----------------------------------|------------|--|
| 67. | Valves-types-sluice               | 26-06-2021 | Lecture interspersed<br>with discussions |
| 68. | Scour and check valves            | 28-06-2021 |  |
| 69. | Hydrants and water meters         | 29-06-2021 |  |
| 70. | Laying and testing of pipes       | 30-06-2021 |  |
| 71. | Selection of pipe materials       | 01-07-2021 |  |
| 72. | Pipe joints                       | 02-07-2021 |  |
| 73. | Analysis of distribution networks | 03-07-2021 |  |
| 74. | Problems                          | 05-07-2021 |  |
| 75. | <b>Tutorial</b>                   | 05-07-2021 |  |

*NH 6/4/21*  
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*T. Lakshmi*  
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## TENTATIVE LESSON PLAN: CE R1922013

|  |                                       |                           |
|--|---------------------------------------|---------------------------|
| <b>Course Title: ENGINEERING GEOLOGY</b> |                                       |                           |
| <b>Section : Sec A</b>                   | <b>Date : 22-3-2021</b>               | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                  | <b>Prepared By :Dr.T.Satyanaryana</b> | <b>Approved By : HOD</b>  |

Tools: Black board, PPTs

| No. of Periods   | TOPIC   | Date    | Mode of Delivery                     |
|--|---|---------|--------------------------------------|
| <b>UNIT –I Introduction:</b>   |   |         |                                      |
| CO1 The student will be able to understand the basic concepts of Identify and classify the geological minerals   |   |         |                                      |
| T1 Engineering Geology, N. Chenn Kesavulu, Laxmi Publications,<br>T2. Engineering Geology, Subinoy Gangopadhyay, Oxford University press   |   |         |                                      |
| 1  | Introduction  | 22-3-21 | Lecture interspersed with discussion |
| 2  | Definition of geology and various Branches of Geology   | 23-3-21 |                                      |
| 3  | Allied Branches of geology  | 24-3-21 |                                      |
| 4  | Importance of Geology in Civil Engineering with case studies  | 25-3-21 |                                      |
| 5  | Weathering  | 26-3-21 |                                      |
| 6  | Weathering of rocks- physical weathering  | 27-3-21 |                                      |
| 7  | Weathering of rocks- chemical weathering  | 30-3-21 |                                      |
| 8  | Geological agents   | 31-3-21 |                                      |
| 9  | River process-erosion   | 1-4-21  |                                      |
| 10   | River process-Transportation  | 3-4-21  |                                      |
| 11   | weathering process of Rock and their development  | 5-4-21  |                                      |
| 12   | River valley development  | 6-4-21  |                                      |
| <b>UNIT –II Mineralogy And Petrology</b>   |   |         |                                      |
| CO2 The student will be able to understand the basic concepts Measure the rock strengths of various rocks .Classify and measure the earthquake prone areas to practice the hazard zonation |   |         |                                      |
| T1 Engineering Geology, N. Chenn Kesavulu, Laxmi Publications,<br>T2. Engineering Geology, Subinoy Gangopadhyay, Oxford University press   |   |         |                                      |
| 13   | Mineralogy And Petrology  | 7-4-21  | Lecture interspersed with discussion |
| 14   | Definitions of mineral  | 8-4-21  |                                      |
| 15   | Structures of silicates and rock,   | 9-4-21  |                                      |
| 16   | Different methods of study of mineral and rock,   | 12-4-21 |                                      |
| 17   | The study of physical properties of minerals and rocks for megascopic study for the following minerals and rocks, | 15-4-21 |                                      |
| 18   | Common rock forming minerals are Feldspar   | 16-4-21 |                                      |
| 19   | Quartz Group, ,   | 17-4-21 |                                      |
| 20   | Olivine, Augite   | 19-4-21 |                                      |
| 21   | Hornblende, ,   | 20-4-21 |                                      |
| 22   | Mica Group, Asbestos  | 22-4-21 |                                      |
| 23   | Talc, Chlorite,   | 23-4-21 |                                      |
| 24   | Kyanite,  | 24-4-21 |                                      |
| 25   | Garnet, Calcite, other ore forming minerals are Pyrite, Hematite  | 26-4-21 |                                      |

|     |   |            |                               |
|-----|---|------------|-------------------------------|
|     | bridges   |            | interspersed with discussions |
| 29. | Characteristics of cables                           | 11-12-2020 |                               |
| 30. | Analysis of a cable subjected to udl                | 14-12-2020 |                               |
| 31. | Analysis of a cable subjected to concentrated loads | 15-12-2020 |                               |
| 32. | Problems on cables                                  | 16-12-2020 |                               |
| 33. | Problems on cables                                  | 17-12-2020 |                               |
| 34. | Analysis of simple suspension bridges               | 18-12-2020 |                               |
| 35. | Problems on suspension bridges                      | 19-12-2020 |                               |
| 36. | Problems on suspension bridges                      | 21-12-2020 |                               |
| 37. | Problems on suspension bridges                      | 22-12-2020 |                               |

**UNIT –I V MOMENT DISTRIBUTION METHOD**

**CO4 Analyze Structures using Moment distribution methods**

**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |  |           |                                       |
|-----|--|-----------|---------------------------------------|
| 38. | Introduction   | 2-1-2021  | Lecture interspersed with discussions |
| 39. | Problems on continuous beams                         | 4-1-2021  |                                       |
| 40. | Calculation of stiffness factor, distribution factor | 5-1-2021  |                                       |
| 41. | Problems on continuous beams                         | 6-1-2021  |                                       |
| 42. | Problems on continuous beams                         | 7-1-2021  |                                       |
| 43. | Problems on continuous beams                         | 8-1-2021  |                                       |
| 44. | Problems on continuous beams                         | 9-1-2021  |                                       |
| 45. | Problems on portal frame                             | 11-12021  |                                       |
| 46. | Problems on portal frame                             | 12-1-2021 |                                       |
| 47. | Problems on portal frame                             | 16-1-2021 |                                       |

**UNIT – V KANI'S METHOD**

**CO5 Analyze Structures using kani's Method**

**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |   |           |                                       |
|-----|---|-----------|---------------------------------------|
| 48. | Introduction                            |           | Lecture interspersed with discussions |
| 49. | Analysis of continuous beams            |           |                                       |
| 50. | Analysis of continuous beams - fixed    | 18-1-2021 |                                       |
| 51. | Analysis of continuous beams - fixed    | 19-1-2021 |                                       |
| 52. | Analysis of continuous beams - fixed    | 20-1-2021 |                                       |
| 53. | Analysis of continuous beams - overhang | 21-1-2021 |                                       |
| 54. | Analysis of continuous beams - overhang | 22-1-2021 |                                       |
| 55. | Analysis of continuous beams            | 23-1-2021 |                                       |
| 56. | Analysis of portal frames               | 1-2-2021  |                                       |
| 57. | Analysis of portal frames               | 2-2-2021  |                                       |
| 58. | Analysis of portal frames               | 3-2-2021  |                                       |
| 59. | Analysis of portal frames               | 4-2-2021  |                                       |

**UNIT – VI INTRODUCTION TO MATRIX METHODS**

**CO6 Analyze Structures using Matrix Methods**

**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |              |          |  |
|-----|--------------|----------|--|
| 60. | Introduction | 5-2-2021 |  |
|-----|--------------|----------|--|



|     |   |            |                               |
|-----|---|------------|-------------------------------|
|     | bridges   |            | interspersed with discussions |
| 29. | Characteristics of cables                           | 11-12-2020 |                               |
| 30. | Analysis of a cable subjected to udl                | 14-12-2020 |                               |
| 31. | Analysis of a cable subjected to concentrated loads | 15-12-2020 |                               |
| 32. | Problems on cables                                  | 16-12-2020 |                               |
| 33. | Problems on cables                                  | 17-12-2020 |                               |
| 34. | Analysis of simple suspension bridges               | 18-12-2020 |                               |
| 35. | Problems on suspension bridges                      | 19-12-2020 |                               |
| 36. | Problems on suspension bridges                      | 21-12-2020 |                               |
| 37. | Problems on suspension bridges                      | 22-12-2020 |                               |

**UNIT – I V MOMENT DISTRIBUTION METHOD**

**CO4 Analyze Structures using Moment distribution methods**

**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |  |           |                                       |
|-----|--|-----------|---------------------------------------|
| 38. | Introduction   | 2-1-2021  | Lecture interspersed with discussions |
| 39. | Problems on continuous beams                         | 4-1-2021  |                                       |
| 40. | Calculation of stiffness factor, distribution factor | 5-1-2021  |                                       |
| 41. | Problems on continuous beams                         | 6-1-2021  |                                       |
| 42. | Problems on continuous beams                         | 7-1-2021  |                                       |
| 43. | Problems on continuous beams                         | 8-1-2021  |                                       |
| 44. | Problems on continuous beams                         | 9-1-2021  |                                       |
| 45. | Problems on portal frame                             | 11-12021  |                                       |
| 46. | Problems on portal frame                             | 12-1-2021 |                                       |
| 47. | Problems on portal frame                             | 16-1-2021 |                                       |

**UNIT – V KANI'S METHOD**

**CO5 Analyze Structures using kani's Method**

**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |   |           |                                       |
|-----|---|-----------|---------------------------------------|
| 48. | Introduction                            |           | Lecture interspersed with discussions |
| 49. | Analysis of continuous beams            |           |                                       |
| 50. | Analysis of continuous beams - fixed    | 18-1-2021 |                                       |
| 51. | Analysis of continuous beams - fixed    | 19-1-2021 |                                       |
| 52. | Analysis of continuous beams - fixed    | 20-1-2021 |                                       |
| 53. | Analysis of continuous beams - overhang | 21-1-2021 |                                       |
| 54. | Analysis of continuous beams - overhang | 22-1-2021 |                                       |
| 55. | Analysis of continuous beams            | 23-1-2021 |                                       |
| 56. | Analysis of portal frames               | 1-2-2021  |                                       |
| 57. | Analysis of portal frames               | 2-2-2021  |                                       |
| 58. | Analysis of portal frames               | 3-2-2021  |                                       |
| 59. | Analysis of portal frames               | 4-2-2021  |                                       |

**UNIT – VI INTRODUCTION TO MATRIX METHODS**

**CO6 Analyze Structures using Matrix Methods**

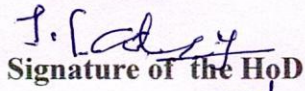
**TB :: T.S. Thandava Moorthy , “Structural Analysis – II ”, 2014, Oxford University press, India**

|     |              |          |  |
|-----|--------------|----------|--|
| 60. | Introduction | 5-2-2021 |  |
|-----|--------------|----------|--|

|     |  |           |                                       |
|-----|--|-----------|---------------------------------------|
| 61. | Analysis of continuous beams using flexibility methods         | 6-2-2021  | Lecture interspersed with discussions |
| 62. | Analysis of continuous beams using flexibility methods         | 8-2-2021  |                                       |
| 63. | Analysis of continuous beams including settlement of supports  | 9-2-2021  |                                       |
| 64. | Introduction to stiffness method                               | 10-2-2021 |                                       |
| 65. | Analysis of continuous beams using flexibility methods         | 11-2-2021 |                                       |
| 66. | Analysis of continuous beams using flexibility methods         | 12-2-2021 |                                       |
| 67. | Analysis of continuous beams using flexibility methods         | 15-2-2021 |                                       |
| 68. | Analysis of continuous beams including settlement of supports. | 16-2-2021 |                                       |
| 69. | Solving university question papers                             | 17-2-2021 |                                       |
| 70. | Solving university question papers                             | 18-2-2021 |                                       |

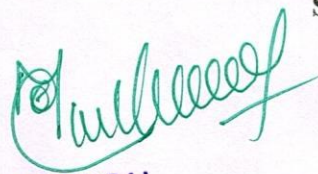


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29/10/20



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## TENTATIVE LESSON PLAN: CE R1922012

|                               |                                       |                           |
|-------------------------------|---------------------------------------|---------------------------|
| <b>Course Title: H&amp;HM</b> |                                       |                           |
| <b>Section : Sec A</b>        | <b>Date : 22-3-2021</b>               | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>       | <b>Prepared By : M.Karthik Khumar</b> | <b>Approved By : HOD</b>  |

Tools: Black board, PPTs, Moodle

| No. of Periods   | TOPIC                                  | Date    | Mode of Delivery                      |  |
|--|--|---------|---------------------------------------|--|
| <b>UNIT –I Introduction: UNIFORM FLOW IN OPEN CHANNELS</b><br>CO1 The student will be able to understand the basic concepts. To study about uniform flows in open channel and also to learn about the characteristics of hydraulic jump. Solve uniform open channel flow problems<br><b>T1 A text of Fluid mechanics and hydraulic machines, R. K. Bansal, Laxmi Publications New Delhi.</b><br><b>T2 Fluid Flow in Pipes and Channels, G.L. Asawa, CBS.</b><br><b>T3 Fluid Mechanics, Modi and Seth, Standard book house.</b> |  |         |                                       |  |
| 1  | <b>UNIFORM FLOW IN OPEN CHANNELS:</b>  |         | Lecture interspersed with discussions |  |
| 2  | Types of channels                      | 22-3-21 |                                       |  |
| 3  | Types of flows                         | 23-3-21 |                                       |  |
| 4  | Velocity distribution                  | 24-3-21 |                                       |  |
| 5  | Energy and momentum correction factors | 25-3-21 |                                       |  |
| 6  | Chezy's formulae for uniform flow      | 26-3-21 |                                       |  |
| 7  | Manning's formulae for uniform flow    | 27-3-21 |                                       |  |
| 8  | Most Economical sections               | 30-3-21 |                                       |  |
| 9  | Critical flow: Specific energy         | 31-3-21 |                                       |  |
| 10   | critical depth                         | 1-4-21  |                                       |  |
| 11   | computation of critical depth          | 3-4-21  |                                       |  |
| 12   | Problems                               | 5-4-21  |                                       |  |
| 13   | Problems                               | 6-4-21  |                                       |  |
| 14   | Problems                               | 7-4-21  |                                       |  |
| 15   | Problems                               | 8-4-21  |                                       |  |
| <b>UNIT –II NON-UNIFORM FLOW IN OPEN CHANNELS:</b><br>CO2 The student will be able to understand the basic concepts. To study about non- uniform flows in open channel and also to learn about the characteristics of hydraulic jump Solve non uniform open channel flow problems<br><b>T1 A text of Fluid mechanics and hydraulic machines, R. K. Bansal, Laxmi Publications New Delhi.</b><br><b>T2 Fluid Flow in Pipes and Channels, G.L. Asawa, CBS.</b><br><b>T3 Fluid Mechanics, Modi and Seth, Standard book house.</b> |  |         |                                       |  |
| 16   | Steady Gradually Varied flow           | 9-4-21  |                                       |  |
| 17   | Dynamic equation slope                 | 12-4-21 |                                       |  |
| 18   | Mild, Critical slope                   | 15-4-21 |                                       |  |
| 19   | Steep, horizontal                      | 16-4-21 |                                       |  |
| 20   | adverse slope                          | 17-4-21 |                                       |  |
| 21   | surface profiles                       | 19-4-21 |                                       |  |
| 22   | Profiles direct step method            | 20-4-21 |                                       |  |
| 23   | Rapidly varied flow                    | 22-4-21 |                                       |  |
| 24   | hydraulic jump                         | 23-4-21 |                                       |  |
| 25   | energy dissipation                     | 24-4-21 |                                       |  |
| 26   | Problems                               | 26-4-21 |                                       |  |
| 27   | Problems                               | 27-4-21 |                                       |  |
| 28   | Problems                               | 28-4-21 |                                       |  |
| 29   | Problems                               | 29-4-21 |                                       |  |

**UNIT –III HYDRAULIC SIMILITUDE**

CO3 The student will be able to understand the basic concepts. Dimensional analysis for fluid flow problems and apply the principals of dimensional analysis and similitude in hydraulic model testing.

**T1 A text of Fluid mechanics and hydraulic machines, R. K. Bansal, Laxmi Publications New Delhi.**

**T2 Fluid Flow in Pipes and Channels, G.L. Asawa, CBS.**

**T3 Fluid Mechanics, Modi and Seth, Standard book house.**

|    |                                |         |                                       |
|----|--------------------------------|---------|---------------------------------------|
| 30 | Dimensional analysis           | 30-4-21 | Lecture interspersed with discussions |
| 31 | Rayleigh's method              | 3-5-21  |                                       |
| 32 | Buckingham's pi theorem        | 4-5-21  |                                       |
| 33 | study of Hydraulic models      | 5-5-21  |                                       |
| 34 | Geometric, kinematic           | 6-5-21  |                                       |
| 35 | Dynamic similarities           | 7-5-21  |                                       |
| 36 | dimensionless numbers          | 8-5-21  |                                       |
| 37 | model and prototype relations. | 13-5-21 |                                       |
| 38 | Problems                       | 15-5-21 |                                       |
| 39 | Problems                       | 17-5-21 |                                       |
| 40 | Problems                       | 18-5-21 |                                       |
| 41 | Problems                       | 19-5-21 |                                       |

**UNIT IV BASICS OF TURBO MACHINERY, HYDRAULIC TURBINES**

CO4 The student will be able to understand the basic concepts of impact of jet in the direction and angular momentum. working principles of various types of hydraulic machines

Understand the working principles of various hydraulic machineries

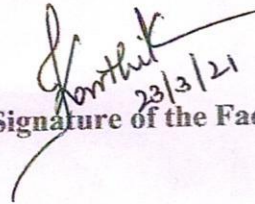
**T1 A text of Fluid mechanics and hydraulic machines, R. K. Bansal, Laxmi Publications New Delhi.**

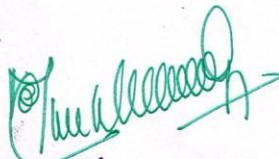
**T2 Fluid Flow in Pipes and Channels, G.L. Asawa, CBS.**

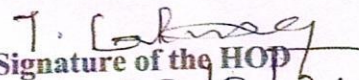
**T3 Fluid Mechanics, Modi and Seth, Standard book house.**

|    |  |         |                                       |
|----|--|---------|---------------------------------------|
| 42 | Hydrodynamic force of jets on stationary                                   | 20-5-21 | Lecture interspersed with discussions |
| 43 | moving flat  | 21-5-21 |                                       |
| 44 | inclined and curved vanes  | 22-5-21 |                                       |
| 45 | jet striking centrally and at tip  | 24-5-21 |                                       |
| 46 | velocity triangles at inlet and outlet,                                    | 25-5-21 |                                       |
| 47 | expressions for work done and efficiency                                   | 26-5-21 |                                       |
| 48 | Angular momentum principle   | 27-5-21 |                                       |
| 49 | Problems   | 28-5-21 |                                       |
| 50 | problems   | 29-5-21 | Lecture interspersed with discussions |
| 51 | problems   | 31-5-21 |                                       |
| 52 | Layout of a typical Hydropower installation                                | 1-6-21  |                                       |
| 53 | Heads and efficiencies   | 2-6-21  |                                       |
| 54 | classification of turbines   | 3-6-21  |                                       |
| 55 | Pelton wheel   | 4-6-21  |                                       |
| 56 | Francis turbine  | 5-6-21  |                                       |
| 57 | Kaplan turbine   | 7-6-21  |                                       |
| 58 | working, working proportions<br>velocity diagram, work done and efficiency | 8-6-21  |                                       |
| 59 | hydraulic design, draft tube, theory and efficiency                        | 9-6-21  |                                       |
| 60 | Governing of turbines ,surge tanks-unit                                    | 10-6-21 |                                       |
| 61 | specific quantities, selection of turbines,                                | 11-6-21 |                                       |
| 62 | performance characteristics  | 12-6-21 |                                       |
| 63 | geometric similarity-cavitations.  | 14-6-21 |                                       |
|    |  | 15-6-21 |                                       |

|  |   |         |
|--|---|---------|
| 64   | Problems                                      |         |
| <b>UNIT -V CENTRAIFUGAL-PUMPS-</b>   |   |         |
| CO6 The student will be able to understand the basic concepts. To understand the working principles of various types of pumps. |   |         |
| Understand the working principles of various pumps   |   |         |
| T1 A text of Fluid mechanics and hydraulic machines, R. K. Bansal, Laxmi Publications New Delhi.                               |   |         |
| T2 Fluid Flow in Pipes and Channels, G.L. Asawa, CBS.  |   |         |
| T3 Fluid Mechanics, Modi and Seth, Standard book house   |   |         |
| 65   | Pump installation details                     | 16-6-21 |
| 66   | classification Work done- Manometric head     | 17-6-21 |
| 67   | Work done- Manometric head                    | 18-6-21 |
| 68   | minimum starting speed                        | 19-6-21 |
| 69   | Problems                                      | 21-6-21 |
| 70   | losses and efficiencies-specific speed        | 22-6-21 |
| 71   | multistage pumps-pumps in parallel and series | 23-6-21 |
| 72   | performance of pumps-characteristic curves    | 24-6-21 |
| 73   | Problems                                      | 25-6-21 |
| 74   | NPSH- Cavitation.                             | 26-6-21 |
| 75   | <b>RECIPROCATING PUMPS:</b> Introduction      | 28-6-21 |
| 76   | classification components, working            | 29-6-21 |
| 77   | Problems                                      | 30-6-21 |

  
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23/3/21

## TENTATIVE LESSON PLAN: CE

|   |                              |                           |
|---|------------------------------|---------------------------|
| <b>Course Title: TRANSPORTATION ENGINEERING-II (R192201 )</b> |                              |                           |
| <b>Section : Sec I</b>  | <b>Date : 6/4/2021</b>       | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                       | <b>Prepared By : K.KIRAN</b> | <b>Approved By : HOD</b>  |

**Tools : Black board, PPTs, Model**

| No. of Periods  | TOPIC  | Tentative Date | Implemented Date                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT – I Components of Railway Engineering</b>   |  |                |                                       |
| <b>CO1: Know various components and their functions in a railway track</b>                              |  |                |                                       |
| <b>TB1:: Railway Engineering by Satish Chandra and Agarwal M.M., Oxford University Press, New Delhi</b> |  |                |                                       |
| 1   | Permanent way components   | 06-04-2021     | Lecture interspersed with discussions |
| 2   | Railway Track Gauge  | 07-04-2021     |                                       |
| 3   | Cross Section of Permanent Way                                   | 08-04-2021     |                                       |
| 4   | Functions of various Components like Rails, Sleepers and Ballast | 09-04-2021     |                                       |
| 5   | Rail Fastenings  | 10-04-2021     |                                       |
| 6   | Creep of Rails   | 12-04-2021     |                                       |
| 7   | Theories related to creep  | 15-04-2021     |                                       |
| 8   | Adzing of Sleepers   | 16-04-2021     |                                       |
| 9   | Sleeper density  | 17-04-2021     |                                       |
| 10  | Rail joints.   | 19-04-2021     |                                       |
| <b>UNIT – II Geometric Design of Railway Track</b>  |  |                |                                       |
| <b>CO2: Design geometrics in a railway track.</b>   |  |                |                                       |
| <b>TB1:: Railway Engineering by Satish Chandra and Agarwal M.M., Oxford University Press, New Delhi</b> |  |                |                                       |
| 11  | Alignment  | 20-04-2021     | Lecture interspersed with discussions |
| 12  | Engineering Surveys  | 22-04-2021     |                                       |
| 13  | Gradients  | 23-04-2021     |                                       |
| 14  | Grade Compensation   | 24-04-2021     |                                       |
| 15  | Cant and Negative Super elevation                                | 26-04-2021     |                                       |
| 16  | Cant Deficiency  | 27-04-2021     |                                       |
| 17  | Degree of Curve  | 28-04-2021     |                                       |
| 18  | safe speed on curves   | 29-04-2021     |                                       |
| 19  | Transition curve   | 30-04-2021     |                                       |
| 20  | Compound curves  | 01-05-2021     |                                       |
| 21  | Reverse curves   | 03-05-2021     |                                       |
| 22  | Extra clearance on curves  | 04-05-2021     |                                       |
| 23  | widening of gauge on curves                                      | 05-05-2021     |                                       |
| 24  | vertical curves  | 06-05-2021     |                                       |
| 25  | Check rails on curves.   | 07-05-2021     |                                       |
| <b>UNIT – III Turnouts &amp; Controllers</b>  |  |                |                                       |
| <b>CO3: Plan track layouts and control movement of trains</b>   |  |                |                                       |
| <b>TB1:: Railway Engineering by Satish Chandra and Agarwal M.M., Oxford University Press, New Delhi</b> |  |                |                                       |
| 26  | Track layouts  | 08-05-2021     | Lecture interspersed with             |
| 27  | Switches   | 10-05-2021     |                                       |
| 28  | Design of Tongue Rails   | 11-05-2021     |                                       |
| 29  | Crossings  | 12-05-2021     |                                       |
| 30  | Turnouts   | 13-05-2021     |                                       |

|  |  |            |                                       |
|--|--|------------|---------------------------------------|
| 31   | Layout of Turnout                                    | 15-05-2021 | discussions                           |
| 32   | Double Turnout                                       | 17-05-2021 |                                       |
| 33   | Diamond crossing                                     | 18-05-2021 |                                       |
| 34   | Scissors crossing.                                   | 19-05-2021 |                                       |
| 35   | Signal Objectives                                    | 20-05-2021 |                                       |
| 36   | Classification                                       | 21-05-2021 |                                       |
| 37   | Fixed signals  | 22-05-2021 |                                       |
| 38   | Stop signals   | 24-05-2021 |                                       |
| 39   | Signalling systems                                   | 25-05-2021 |                                       |
| 40   | Mechanical signalling system                         | 26-05-2021 |                                       |
| 41   | Electrical signalling system                         | 27-05-2021 |                                       |
| 42   | System for Controlling Train Movement                | 28-05-2021 |                                       |
| 43   | Interlocking   | 29-05-2021 |                                       |
| 44   | Modern signalling Installations.                     | 31-05-2021 |                                       |
| <b>UNIT – IV Airport Planning &amp; Design</b>   |  |            |                                       |
| <b>CO4: Design airport geometrics and airfield pavements</b>                                   |  |            |                                       |
| <b>TB2::Airport Engineering by Khanna &amp; Arora - Nemchand Bros, New Delhi.</b>              |  |            |                                       |
| 45   | Airport Master plan                                  | 01-06-2021 | Lecture interspersed with discussions |
| 46   | Airport site selection                               | 02-06-2021 |                                       |
| 47   | Air craft characteristics                            | 03-06-2021 |                                       |
| 48   | Zoning laws  | 04-06-2021 |                                       |
| 49   | Airport classification                               | 05-06-2021 |                                       |
| 50   | Runway orientatiomt                                  | 07-06-2021 |                                       |
| 51   | Wind rose diagram                                    | 08-06-2021 |                                       |
| 52   | Runway length  | 09-06-2021 |                                       |
| 53   | Taxiway design                                       | 10-06-2021 |                                       |
| 54   | Terminal area and Airport layout                     | 11-06-2021 |                                       |
| 55   | Visual aids and Air traffic control.                 | 12-06-2021 |                                       |
| 56   | Runway Design: Various Design factors                | 14-06-2021 |                                       |
| 57   | Design methods for Flexible pavements                | 15-06-2021 |                                       |
| 58   | Design methods for Rigid pavements                   | 16-06-2021 |                                       |
| 59   | LCN system of Pavement Design                        | 17-06-2021 |                                       |
| 60   | Airfield Pavement Failures                           | 18-06-2021 |                                       |
| 61   | Maintenance and Rehabilitation of Airfield pavements | 19-06-2021 |                                       |
| 62   | Evaluation & Strengthening of Airfield pavements     | 21-06-2021 |                                       |
| 63   | Airport Drainage                                     | 22-6-2021  |                                       |
| 64   | Design of surface and subsurface drainage.           | 22-6-2021  |                                       |
| <b>UNIT – V Planning, Layout, Construction and Maintenance Of Docks and Harbours</b>           |  |            |                                       |
| <b>CO5:Plan, construct and maintain Docks and Harbours</b>                                     |  |            |                                       |
| <b>TB3:Docks and Harbour Engineering by Bindra S.P. - Dhanpathi Rai &amp; Sons, New Delhi.</b> |  |            |                                       |
| 65   | Classification of ports                              | 23-06-2021 | Lecture interspersed with discussions |
| 66   | Requirement of a good port                           | 23-06-2021 |                                       |
| 67   | classification of Harbours                           | 24-06-2021 |                                       |
| 68   | Docks - Dry & wet docks                              | 25-06-2021 |                                       |
| 69   | Transition sheds and workhouses                      | 26-06-2021 |                                       |
| 70   | Layouts; Quays                                       | 28-06-2021 |                                       |
| 71   | construction of Quay walls                           | 29-06-2021 |                                       |
| 72   | Wharves  | 30-06-2021 |                                       |
| 73   | Jetties  | 01-07-2021 |                                       |

|    |                                   |            |
|----|-----------------------------------|------------|
| 74 | Tides - Tidal data and Analysis   | 02-07-2021 |
| 75 | Break waters                      | 03-07-2021 |
| 76 | Dredging                          | 03-07-2021 |
| 77 | Maintenance of Ports and Harbours | 05-07-2021 |
| 78 | Navigational aids.                | 05-07-2021 |

*K. Prasad*  
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*J. Lakshmi*  
Signature of the HOD  
6/4/21

*Chandrababu*  
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## TENTATIVE LESSON PLAN: R1632011

|   |                                   |                           |
|---|-----------------------------------|---------------------------|
| <b>Course Title: DESIGN AND DRAWING OF STEEL STRUCTURES</b> |                                   |                           |
| <b>Section : Sec A</b>                                      | <b>Date : 06-04-2021</b>          | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                     | <b>Prepared By : Dr V Karthik</b> | <b>Approved By : HOD</b>  |

**Tools: PPT, Blackboard**

|   | TOPIC  | DATE       | MODE OF DELIVERY                       |
|---|--|------------|--|
| <b>UNIT – I CONNECTIONS</b>   |  |            |  |
| <b>CO1: familiarize Students with different types of Connections and relevant IS codes</b>    |  |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |  |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |  |            |  |
| 1   | Connections: Introduction - Riveted connections – definition,                                  | 06-04-2021 | Lectures interspersed with discussions |
| 2   | Rivet Strength and capacity  | 07-04-2021 |  |
| 3   | rivet strength and capacity,   | 08-04-2021 |  |
| 4   | Welded connections:  | 09-04-2021 |  |
| 5   | Welded connections: Introduction,  | 10-04-2021 |  |
| 6   | Advantages and disadvantages of welding-   | 12-04-2021 |  |
| 7   | Strength of welds  | 15-04-2021 |  |
| 8   | Butt and fillet welds:   | 16-04-2021 |  |
| 9   | Butt and fillet welds: Permissible stresses – IS Code requirements.                            | 17-04-2021 |  |
| 10  | Design of fillet weld subjected to moment acting in the plane                                  | 19-04-2021 |  |
| 11  | Design of fillet weld subjected to moment acting in the plane                                  | 20-04-2021 |  |
| 12  | Design of fillet weld subjected to moment acting d at right angles to the plane of the joints. | 22-04-2021 |  |
| 13  | Tutorial   | 23-04-2021 |  |
| <b>UNIT – II BEAMS</b>  |  |            |  |
| <b>CO2: Equip student with concepts of design of flexural members</b>                         |  |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |  |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |  |            |  |
| 9   | Allowable stresses,  | 24-04-2021 | Lectures interspersed with discussions |
| 10  | Design requirements as per IS Code   | 26-04-2021 |  |
| 11  | Design of simple and compound beams  | 27-04-2021 |  |
| 12  | Curtailment of flange plates,  | 28-04-2021 |  |
| 13  | Beam to beam connection,   | 29-04-2021 |  |
| 14  | Check for deflection, shear,   | 30-04-2021 |  |
| 15  | Check for buckling, check for bearing,   | 01-05-2021 |  |
| 16  | Check for buckling, check for bearing,   | 03-05-2021 |  |
| 17  | Laterally unsupported beams.   | 04-05-2021 |  |
| 18  | Laterally unsupported beams.   | 05-05-2021 |  |

| <b>UNIT –III TENSION MEMBERS AND COMPRESSION MEMBERS</b>                                      |   |            |  |
|---|---|------------|--|
| <b>CO3: understand Design Concepts of tension and compression members in trusses</b>          |   |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |   |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |   |            |  |
| 17  | Introduction  |            | Lectures interspersed with discussions |
| 18  | General Design of members subjected to direct tension.          | 05-05-2021 |  |
| 19  | General Design of members subjected to direct bending           | 06-05-2021 |  |
| 20  | Effective length of columns- Slenderness ratio                  | 07-05-2021 |  |
| 21  | Permissible stresses.   | 08-05-2021 |  |
| 22  | Design of compression members                                   | 10-05-2021 |  |
| 23  | Design of struts etc.   | 11-05-2021 |  |
| 24  | Roof Trusses: Different types of trusses                        | 12-05-2021 |  |
| 25  | Design loads – Load combinations as per IS Code recommendations | 13-05-2021 |  |
| 26  | structural details  | 15-05-2021 |  |
| 27  | Design of simple roof trusses involving the design of purlins   | 17-05-2021 |  |
| 28  | Design of members and joints – tubular trusses                  | 18-05-2021 |  |
| 29  | Design of tubular trusses                                       | 19-05-2021 |  |
| <b>UNIT – IV DESIGN OF COLUMNS</b>  |   |            |  |
| <b>CO4: Familiarize students with different types of Columns and their Design</b>             |   |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |   |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |   |            |  |
| 30  | Design of Built up compression members                          | 20-05-2021 | Lectures interspersed with discussions |
| 31  | Design of lacings   | 21-05-2021 |  |
| 32  | Design of lacings   | 22-05-2021 |  |
| 33  | Design of battens   | 24-05-2021 |  |
| 34  | Design of battens   | 25-05-2021 |  |
| 35  | Design Principles of Eccentrically loaded columns,              | 26-05-2021 |  |
| 36  | Design Principles of Eccentrically loaded columns,              | 27-05-2021 |  |
| 37  | Design of Splicing of columns                                   | 28-05-2021 |  |
| 38  | Design of Splicing of columns                                   | 26-05-2021 |  |
| 39  | Tutorial  | 27-05-2021 |  |
| <b>UNIT – V DESIGN OF COLUMN FOUNDATIONS</b>  |   |            |  |
| <b>CO5: Familiarize students with different types of column bases and their Design</b>        |   |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |   |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |   |            |  |
| 40  | Design of slab base   | 28-05-2021 | Lectures interspersed                  |
| 41  | Design of slab base   | 29-05-2021 |  |
| 42  | Design of slab base   | 31-05-2021 |  |

|    |  |            |                  |
|----|--|------------|------------------|
| 43 | Design of gusseted base.                 | 01-06-2021 | with discussions |
| 44 | Design of gusseted base.                 | 02-06-2021 |                  |
| 45 | Design of gusseted base.                 | 03-06-2021 |                  |
| 46 | Design of Column bases subjected moment. | 04-06-2021 |                  |
| 47 | Design of Column bases subjected moment. | 05-06-2021 |                  |
| 48 | Design of Column bases subjected moment. | 07-06-2021 |                  |
| 49 | Tutorial                                 | 08-06-2021 |                  |

**UNIT – VI DESIGN PLATE GIRDER AND GANTRY GIRDER**

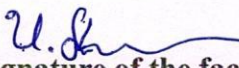
**CO6: Familiarize students with Plate girder and Gantry Girder and their Design**

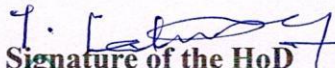
**TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi**


**TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University**

**Press.**

|    |  |            |  |
|----|--|------------|--|
| 50 | UNIT – VI: Design consideration – I S Code recommendations | 09-06-2021 | Lectures interspersed with discussions |
| 51 | Design of plate girder-Welded                              | 10-06-2021 |  |
| 52 | Design of plate girder- Curtailment of flange plates,      | 11-06-2021 |  |
| 53 | Design of plate girder- Curtailment of flange plates,      | 12-06-2021 |  |
| 54 | Design of Plate Girder- stiffeners                         | 14-06-2021 |  |
| 55 | Design of Plate Girder- stiffeners                         | 15-06-2021 |  |
| 56 | Design of Plate Girder - splicing and connections.         | 23-06-2021 |  |
| 57 | Design of Gantry Girder: impact factors                    | 24-06-2021 |  |
| 58 | longitudinal forces  | 28-06-2021 |  |
| 59 | Design of Gantry Girder: impact factors                    | 29-06-2021 |  |
| 60 | Design of Gantry girders.                                  | 30-06-2021 |  |
| 61 | Solving university question papers                         | 01-07-2021 |  |
| 62 | Solving university question papers                         | 02-07-2021 |  |
| 63 | Solving university question papers                         | 03-07-2021 |  |
| 64 | Tutorial   | 05-07-2021 |  |

  
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## TENTATIVE LESSON PLAN: R1632011


|   |                                  |                           |
|---|----------------------------------|---------------------------|
| <b>Course Title: DESIGN AND DRAWING OF STEEL STRUCTURES</b> |                                  |                           |
| <b>Section : Sec B</b>                                      | <b>Date : 06-04-2021</b>         | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                     | <b>Prepared By : E.Usha Sree</b> | <b>Approved By : HOD</b>  |

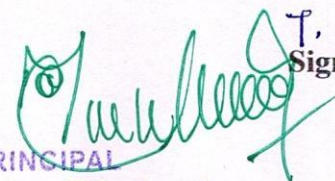
**Tools: PPT, Blackboard**

|   | TOPIC  | DATE       | MODE OF DELIVERY                       |
|---|--|------------|--|
| <b>UNIT – I CONNECTIONS</b>   |  |            |  |
| <b>CO1: familiarize Students with different types of Connections and relevant IS codes</b>    |  |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |  |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |  |            |  |
| 1   | Connections: Introduction - Riveted connections – definition,                                  | 06-04-2021 | Lectures interspersed with discussions |
| 2   | Rivet Strength and capacity  | 07-04-2021 |  |
| 3   | rivet strength and capacity,   | 08-04-2021 |  |
| 4   | Welded connections:  | 09-04-2021 |  |
| 5   | Welded connections: Introduction,  | 10-04-2021 |  |
| 6   | Advantages and disadvantages of welding-   | 12-04-2021 |  |
| 7   | Strength of welds  | 15-04-2021 |  |
| 8   | Butt and fillet welds:   | 16-04-2021 |  |
| 9   | Butt and fillet welds: Permissible stresses – IS Code requirements.                            | 17-04-2021 |  |
| 10  | Design of fillet weld subjected to moment acting in the plane                                  | 19-04-2021 |  |
| 11  | Design of fillet weld subjected to moment acting in the plane                                  | 20-04-2021 |  |
| 12  | Design of fillet weld subjected to moment acting d at right angles to the plane of the joints. | 22-04-2021 |  |
| 13  | Tutorial   | 23-04-2021 |  |
| <b>UNIT – II BEAMS</b>  |  |            |  |
| <b>CO2: Equip student with concepts of design of flexural members</b>                         |  |            |  |
| <b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |  |            |  |
| <b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b>      |  |            |  |
| 9   | Allowable stresses,  | 24-04-2021 | Lectures interspersed with discussions |
| 10  | Design requirements as per IS Code   | 26-04-2021 |  |
| 11  | Design of simple and compound beams  | 27-04-2021 |  |
| 12  | Curtailment of flange plates,  | 28-04-2021 |  |
| 13  | Beam to beam connection,   | 29-04-2021 |  |
| 14  | Check for deflection, shear,   | 30-04-2021 |  |
| 15  | Check for buckling, check for bearing,   | 01-05-2021 |  |
| 16  | Check for buckling, check for bearing,   | 03-05-2021 |  |
| 17  | Laterally unsupported beams.   | 04-05-2021 |  |

|   |   |            |  |
|---|---|------------|--|
| 18  | Laterally unsupported beams.                                    | 05-05-2021 |  |
| <b>UNIT –III TENSION MEMBERS AND COMPRESSION MEMBERS</b><br><b>CO3: understand Design Concepts of tension and compression members in trusses</b><br><b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b><br><b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b> |   |            |  |
| 17  | Introduction  |            | Lectures interspersed with discussions |
| 18  | General Design of members subjected to direct tension.          | 05-05-2021 |  |
| 19  | General Design of members subjected to direct bending           | 06-05-2021 |  |
| 20  | Effective length of columns- Slenderness ratio                  | 07-05-2021 |  |
| 21  | Permissible stresses.   | 08-05-2021 |  |
| 22  | Design of compression members                                   | 10-05-2021 |  |
| 23  | Design of struts etc.   | 11-05-2021 |  |
| 24  | Roof Trusses: Different types of trusses                        | 12-05-2021 |  |
| 25  | Design loads – Load combinations as per IS Code recommendations | 13-05-2021 |  |
| 26  | structural details  | 15-05-2021 |  |
| 27  | Design of simple roof trusses involving the design of purlins   | 17-05-2021 |  |
| 28  | Design of members and joints – tubular trusses                  | 18-05-2021 |  |
| 29  | Design of tubular trusses                                       | 19-05-2021 |  |
| <b>UNIT – IV DESIGN OF COLUMNS</b><br><b>CO4: Familiarize students with different types of Columns and their Design</b><br><b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b><br><b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b>                          |   |            |  |
| 30  | Design of Built up compression members                          | 20-05-2021 | Lectures interspersed with discussions |
| 31  | Design of lacings   | 21-05-2021 |  |
| 32  | Design of lacings   | 22-05-2021 |  |
| 33  | Design of battens   | 24-05-2021 |  |
| 34  | Design of battens   | 25-05-2021 |  |
| 35  | Design Principles of Eccentrically loaded columns,              | 26-05-2021 |  |
| 36  | Design Principles of Eccentrically loaded columns,              | 27-05-2021 |  |
| 37  | Design of Splicing of columns                                   | 28-05-2021 |  |
| 38  | Design of Splicing of columns                                   | 26-05-2021 |  |
| 39  | Tutorial  | 27-05-2021 |  |
| <b>UNIT – V DESIGN OF COLUMN FOUNDATIONS</b><br><b>CO5: Familiarize students with different types of column bases and their Design</b><br><b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b><br><b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b>           |   |            |  |
| 40  | Design of slab base   | 28-05-2021 | Lectures                               |

|  |  |            |   |
|--|--|------------|---|
| 41   | Design of slab base  | 29-05-2021 | interspersed<br>with<br>discussions             |
| 42   | Design of slab base  | 31-05-2021 |   |
| 43   | Design of gusseted base.                                   | 01-06-2021 |   |
| 44   | Design of gusseted base.                                   | 02-06-2021 |   |
| 45   | Design of gusseted base.                                   | 03-06-2021 |   |
| 46   | Design of Column bases subjected moment.                   | 04-06-2021 |   |
| 47   | Design of Column bases subjected moment.                   | 05-06-2021 |   |
| 48   | Design of Column bases subjected moment.                   | 07-06-2021 |   |
| 49   | Tutorial   | 08-06-2021 |   |
| <b>UNIT – VI DESIGN PLATE GIRDER AND GANTRY GIRDER</b><br><b>CO6: Familiarize students with Plate girder and Gantry Girder and their Design</b><br><b>TB:: ‘Design of steel structures’ by S.K. Duggal, Tata Mcgraw Hill, and New Delhi</b><br><b>TB:: ‘Steel Structures Design and Practice’ by N.Subramanian, Oxford University Press.</b> |  |            |   |
| 50   | UNIT – VI: Design consideration – I S Code recommendations | 09-06-2021 | Lectures<br>interspersed<br>with<br>discussions |
| 51   | Design of plate girder-Welded                              | 10-06-2021 |   |
| 52   | Design of plate girder- Curtailment of flange plates,      | 11-06-2021 |   |
| 53   | Design of plate girder- Curtailment of flange plates,      | 12-06-2021 |   |
| 54   | Design of Plate Girder- stiffeners                         | 14-06-2021 |   |
| 55   | Design of Plate Girder- stiffeners                         | 15-06-2021 |   |
| 56   | Design of Plate Girder - splicing and connections.         | 23-06-2021 |   |
| 57   | Design of Gantry Girder: impact factors                    | 24-06-2021 |   |
| 58   | longitudinal forces  | 28-06-2021 |   |
| 59   | Design of Gantry Girder: impact factors                    | 29-06-2021 |   |
| 60   | Design of Gantry girders.                                  | 30-06-2021 |   |
| 61   | Solving university question papers                         | 01-07-2021 |   |
| 62   | Solving university question papers                         | 02-07-2021 |   |
| 63   | Solving university question papers                         | 03-07-2021 |   |
| 64   | Tutorial   | 05-07-2021 |   |

  
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## TENTATIVE LESSON PLAN: CIVIL R1632012

|   |                                  |                           |
|---|----------------------------------|---------------------------|
| <b>Course Title: GEO-TECHNICAL ENGINEERING-I(CIVIL)</b> |                                  |                           |
| <b>Section : Sec A</b>                                  | <b>Date : 06-04-2021</b>         | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                 | <b>Prepared By :A.THANU SREE</b> | <b>Approved By : HOD</b>  |

**Tools: Black board, PPTs**

| No. of Periods   | TOPIC  | Date       | Mode of Delivery                      |
|--|--|------------|---------------------------------------|
| <b>UNIT –I Introduction</b>  |  |            |                                       |
| CO1: The student must know the definition of the various parameters related to soil Mechanics and establish their inter-relationships. |  |            |                                       |
| TB: Soil mechanics and foundation engineering, Dr. K. R. ARORA   |  |            |                                       |
| 1.   | Soil structure and formation                       | 06-04-2021 | Lecture interspersed with discussions |
| 2.   | Weathering action of rocks                         | 07-04-2021 |                                       |
| 3.   | Mechanical and chemical weathering                 | 08-04-2021 |                                       |
| 4.   | Single honey comb structure                        | 09-04-2021 |                                       |
| 5.   | Clay mineral, adsorbed water                       | 10-04-2021 |                                       |
| 6.   | 2 and 3 phase systems and definitions              | 12-04-2021 |                                       |
| 7.   | Relation between e, S,G                            | 15-04-2021 |                                       |
| 8.   | Derivations  | 16-04-2021 |                                       |
| 9.   | Relation between dry mass and percentage air voids | 17-04-2021 |                                       |
| 10.  | Relative density                                   | 19-04-2021 |                                       |
| 11.  | Derivations  | 20-04-2021 |                                       |
| 12.  | Factors effecting compaction                       | 22-04-2021 |                                       |
| 13.  | Compaction effect on soil                          | 23-04-2021 |                                       |
| 14.  | Problems   | 24-04-2021 |                                       |
| 15.  | <b>Tutorial</b>                                    | 26-04-2021 |                                       |
| <b>UNIT –II Index properties of soils</b>  |  |            |                                       |
| CO 2: To enable the student to determine the index properties of the soil and classify it.   |  |            |                                       |
| TB: soil mechanics and foundation engineering, Dr. K.R.ARORA   |  |            |                                       |
| 16.  | Index property of soil                             | 27-04-2021 | Lecture interspersed with discussions |
| 17.  | Grain size analysis and sieve analysis             | 28-04-2021 |                                       |
| 18.  | Hydrometer analysis                                | 29-04-2021 |                                       |
| 19.  | Consistency limits                                 | 30-04-2021 |                                       |
| 20.  | Determination of liquid limit                      | 01-05-2021 |                                       |
| 21.  | Determination of plastic and shrinkage limit       | 03-05-2021 |                                       |
| 22.  | Definition of plasticity index, etc                | 04-05-2021 |                                       |
| 23.  | Classification of soil                             | 05-05-2021 |                                       |
| 24.  | Unified soil classification                        | 06-05-2021 |                                       |
| 25.  | Unified soil classification                        | 07-05-2021 |                                       |
| 26.  | IS classification                                  | 08-05-2021 |                                       |
| 27.  | IS classification                                  | 10-05-2021 |                                       |
| 28.  | Problems on LL, PL                                 | 11-05-2021 |                                       |
| 29.  | Problems on sieve analysis                         | 12-05-2021 |                                       |
| 30.  | <b>Tutorial</b>                                    | 13-05-2021 |                                       |
| <b>UNIT –III Permeability of soils</b>   |  |            |                                       |
| CO 3:To impart the concept of seepage of water through soils and determine the discharge of water through soils.                       |  |            |                                       |
| TB: soil mechanics and foundation engineering, Dr. K.R.ARORA   |  |            |                                       |

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |                                       |            |                                       |
|-----|---------------------------------------|------------|---------------------------------------|
| 31. | Introduction to permeability          | 15-05-2021 | Lecture interspersed with discussions |
| 32. | Soil water, one dimensional flow      | 17-05-2021 |                                       |
| 33. | Darcy's law, factors                  | 18-05-2021 |                                       |
| 34. | Determination of k permeability       | 19-05-2021 |                                       |
| 35. | Layered systems of permeability       | 20-05-2021 |                                       |
| 36. | Total, neutral and effective stresses | 21-05-2021 |                                       |
| 37. | Quick sand condition                  | 22-05-2021 |                                       |
| 38. | Laplace's equations                   | 24-05-2021 |                                       |
| 39. | Seepage through soils                 | 25-05-2021 |                                       |
| 40. | Flow net and uses                     | 26-05-2021 |                                       |
| 41. | Problems                              | 27-05-2021 |                                       |
| 42. | <b>Tutorial</b>                       | 28-05-2021 |                                       |

#### UNIT -IV Stress distribution of soils

CO4: The student should be able to know the importance Of soil

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |                                 |            |                                       |
|-----|---------------------------------|------------|---------------------------------------|
| 43. | Stress induced by applied loads | 29-05-2021 | Lecture interspersed with discussions |
| 44. | Boussinesqu's equation          | 31-05-2021 |                                       |
| 45. | Westergaard's equation          | 01-06-2021 |                                       |
| 46. | Newmark's influence chart       | 02-06-2021 |                                       |
| 47. | Problems on rectangular area    | 03-06-2021 |                                       |
| 48. | Problems on circular area       | 04-06-2021 |                                       |
| 49. | Problems on square area         | 05-06-2021 |                                       |
| 50. | <b>Tutorial</b>                 | 07-06-2021 |                                       |

#### UNIT -V Consolidation of soils

CO 5: To impart the principles of compaction and consolidation of soils and determine the magnitude and the rate of consolidation settlement.

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |   |            |                                       |
|-----|---|------------|---------------------------------------|
| 51. | Consolidation and compressibility                 | 08-06-2021 | Lecture interspersed with discussions |
| 52. | e-p and e-log p curves                            | 09-06-2021 |                                       |
| 53. | Stress history , concept                          | 10-06-2021 |                                       |
| 54. | Spring analogy                                    | 11-06-2021 |                                       |
| 55. | Terzaghi's theory                                 | 12-06-2021 |                                       |
| 56. | One-dimensional consolidation equation derivation | 14-06-2021 |                                       |
| 57. | Time rate of consolidation                        | 15-06-2021 |                                       |
| 58. | Degree of consolidation                           | 16-06-2021 |                                       |
| 59. | Determination of coefficient of consolidation     | 17-06-2021 |                                       |
| 60. | Over and normally consolidated clay               | 18-06-2021 |                                       |
| 61. | Problems on consolidation                         | 19-06-2021 |                                       |
| 62. | Problems on consolidation                         | 21-06-2021 |                                       |
| 63. | <b>Tutorial</b>                                   | 22-6-2021  |                                       |

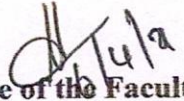
#### UNIT - VI Shear Strength of soils

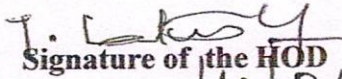
CO 6: To enable the student to understand the concept of shear strength of soils, determine the shear



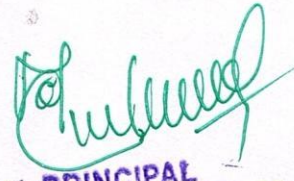
parameters of sands and clays and the areas of their application.  
TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |  |            |  |
|-----|--|------------|--|
| 64. | Introduction of shear strength                           | 23-06-2021 | Lecture interspersed<br>with discussions |
| 65. | Basic mechanism  | 24-06-2021 |  |
| 66. | Mohr coloumb's failure, critical void ratio              | 25-06-2021 |  |
| 67. | Stress- strain behavior on clay                          | 26-06-2021 |  |
| 68. | Determination of shear strength by vane shear test       | 28-06-2021 |  |
| 69. | Determination of shear strength by direct shear test     | 29-06-2021 |  |
| 70. | Determination of shear strength by unconfined shear Test | 30-06-2021 |  |
| 71. | Determination of shear strength by tri axial test        | 01-07-2021 |  |
| 72. | Problems on direct test                                  | 02-07-2021 |  |
| 73. | Drainage condition- one way and two way drainage         | 03-07-2021 |  |
| 74. | Problems   | 05-07-2021 |  |
| 75. | <b>Tutorial</b>  | 05-07-2021 |  |

  
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## TENTATIVE LESSON PLAN: CIVIL R1632012

|   |                                    |                           |
|---|------------------------------------|---------------------------|
| <b>Course Title: GEO-TECHNICAL ENGINEERING-I(CIVIL)</b> |                                    |                           |
| <b>Section : Sec B</b>                                  | <b>Date : 06-04-2021</b>           | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                 | <b>Prepared By :A.KRISHNAPRIYA</b> | <b>Approved By : HOD</b>  |

**Tools: Black board, PPTs**

| No. of Periods   | TOPIC  | Date       | Mode of Delivery                      |
|--|--|------------|---------------------------------------|
| <b>UNIT –I Introduction</b>  |  |            |                                       |
| CO1: The student must know the definition of the various parameters related to soil Mechanics and establish their inter-relationships. |  |            |                                       |
| TB: Soil mechanics and foundation engineering, Dr. K. R. ARORA   |  |            |                                       |
| 1.   | Soil structure and formation                       | 06-04-2021 | Lecture interspersed with discussions |
| 2.   | Weathering action of rocks                         | 07-04-2021 |                                       |
| 3.   | Mechanical and chemical weathering                 | 08-04-2021 |                                       |
| 4.   | Single honey comb structure                        | 09-04-2021 |                                       |
| 5.   | Clay mineral, adsorbed water                       | 10-04-2021 |                                       |
| 6.   | 2 and 3 phase systems and definitions              | 12-04-2021 |                                       |
| 7.   | Relation between e, S,G                            | 15-04-2021 |                                       |
| 8.   | Derivations  | 16-04-2021 |                                       |
| 9.   | Relation between dry mass and percentage air voids | 17-04-2021 |                                       |
| 10.  | Relative density                                   | 19-04-2021 |                                       |
| 11.  | Derivations  | 20-04-2021 |                                       |
| 12.  | Factors effecting compaction                       | 22-04-2021 |                                       |
| 13.  | Compaction effect on soil                          | 23-04-2021 |                                       |
| 14.  | Problems   | 24-04-2021 |                                       |
| 15.  | <b>Tutorial</b>                                    | 26-04-2021 |                                       |
| <b>UNIT –II Index properties of soils</b>  |  |            |                                       |
| CO 2: To enable the student to determine the index properties of the soil and classify it.   |  |            |                                       |
| TB: soil mechanics and foundation engineering, Dr. K.R.ARORA   |  |            |                                       |
| 16.  | Index property of soil                             | 27-04-2021 | Lecture interspersed with discussions |
| 17.  | Grain size analysis and sieve analysis             | 28-04-2021 |                                       |
| 18.  | Hydrometer analysis                                | 29-04-2021 |                                       |
| 19.  | Consistency limits                                 | 30-04-2021 |                                       |
| 20.  | Determination of liquid limit                      | 01-05-2021 |                                       |
| 21.  | Determination of plastic and shrinkage limit       | 03-05-2021 |                                       |
| 22.  | Definition of plasticity index, etc                | 04-05-2021 |                                       |
| 23.  | Classification of soil                             | 05-05-2021 |                                       |
| 24.  | Unified soil classification                        | 06-05-2021 |                                       |
| 25.  | Unified soil classification                        | 07-05-2021 |                                       |
| 26.  | IS classification                                  | 08-05-2021 |                                       |
| 27.  | IS classification                                  | 10-05-2021 |                                       |
| 28.  | Problems on LL, PL                                 | 11-05-2021 |                                       |
| 29.  | Problems on sieve analysis                         | 12-05-2021 |                                       |
| 30.  | <b>Tutorial</b>                                    | 13-05-2021 |                                       |
| <b>UNIT –III Permeability of soils</b>   |  |            |                                       |
| CO 3: To impart the concept of seepage of water through soils and determine the discharge of water through soils.                      |  |            |                                       |

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |                                       |            |                                       |
|-----|---------------------------------------|------------|---------------------------------------|
| 31. | Introduction to permeability          | 15-05-2021 | Lecture interspersed with discussions |
| 32. | Soil water, one dimensional flow      | 17-05-2021 |                                       |
| 33. | Darcy's law, factors                  | 18-05-2021 |                                       |
| 34. | Determination of k permeability       | 19-05-2021 |                                       |
| 35. | Layered systems of permeability       | 20-05-2021 |                                       |
| 36. | Total, neutral and effective stresses | 21-05-2021 |                                       |
| 37. | Quick sand condition                  | 22-05-2021 |                                       |
| 38. | Laplace's equations                   | 24-05-2021 |                                       |
| 39. | Seepage through soils                 | 25-05-2021 |                                       |
| 40. | Flow net and uses                     | 26-05-2021 |                                       |
| 41. | Problems                              | 27-05-2021 |                                       |
| 42. | <b>Tutorial</b>                       | 28-05-2021 |                                       |

#### UNIT –IV Stress distribution of soils

CO4: The student should be able to know the importance Of soil

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |                                 |            |                                       |
|-----|---------------------------------|------------|---------------------------------------|
| 43. | Stress induced by applied loads | 29-05-2021 | Lecture interspersed with discussions |
| 44. | Boussinesqu's equation          | 31-05-2021 |                                       |
| 45. | Westergaard's equation          | 01-06-2021 |                                       |
| 46. | Newmark's influence chart       | 02-06-2021 |                                       |
| 47. | Problems on rectangular area    | 03-06-2021 |                                       |
| 48. | Problems on circular area       | 04-06-2021 |                                       |
| 49. | Problems on square area         | 05-06-2021 |                                       |
| 50. | <b>Tutorial</b>                 | 07-06-2021 |                                       |

#### UNIT –V Consolidation of soils

CO 5: To impart the principles of compaction and consolidation of soils and determine the magnitude and the rate of consolidation settlement.

TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |   |            |                                       |
|-----|---|------------|---------------------------------------|
| 51. | Consolidation and compressibility                 | 08-06-2021 | Lecture interspersed with discussions |
| 52. | e-p and e-log p curves                            | 09-06-2021 |                                       |
| 53. | Stress history , concept                          | 10-06-2021 |                                       |
| 54. | Spring analogy                                    | 11-06-2021 |                                       |
| 55. | Terzaghi's theory                                 | 12-06-2021 |                                       |
| 56. | One-dimensional consolidation equation derivation | 14-06-2021 |                                       |
| 57. | Time rate of consolidation                        | 15-06-2021 |                                       |
| 58. | Degree of consolidation                           | 16-06-2021 |                                       |
| 59. | Determination of coefficient of consolidation     | 17-06-2021 |                                       |
| 60. | Over and normally consolidated clay               | 18-06-2021 |                                       |
| 61. | Problems on consolidation                         | 19-06-2021 |                                       |
| 62. | Problems on consolidation                         | 21-06-2021 |                                       |
| 63. | <b>Tutorial</b>                                   | 22-6-2021  |                                       |

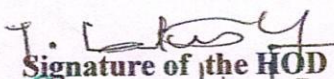
#### UNIT - VI Shear Strength of soils

CO 6: To enable the student to understand the concept of shear strength of soils, determine the shear

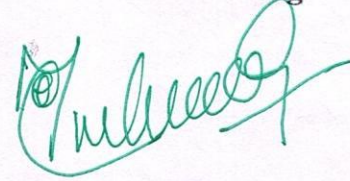
parameters of sands and clays and the areas of their application.  
TB: soil mechanics and foundation engineering, Dr. K.R.ARORA

|     |  |            |  |
|-----|--|------------|--|
| 64. | Introduction of shear strength                           | 23-06-2021 | Lecture interspersed<br>with discussions |
| 65. | Basic mechanism  | 24-06-2021 |  |
| 66. | Mohr coloumb's failure, critical void ratio              | 25-06-2021 |  |
| 67. | Stress- strain behavior on clay                          | 26-06-2021 |  |
| 68. | Determination of shear strength by vane shear test       | 28-06-2021 |  |
| 69. | Determination of shear strength by direct shear test     | 29-06-2021 |  |
| 70. | Determination of shear strength by unconfined shear Test | 30-06-2021 |  |
| 71. | Determination of shear strength by tri axial test        | 01-07-2021 |  |
| 72. | Problems on direct test                                  | 02-07-2021 |  |
| 73. | Drainage condition- one way and two way drainage         | 03-07-2021 |  |
| 74. | Problems   | 05-07-2021 |  |
| 75. | <b>Tutorial</b>  | 05-07-2021 |  |

  
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6/4/21

  
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# TENTATIVE LESSON PLAN: CIVIL R1632013

## ENVIRONMENTAL ENGINEERING-I

|  |   |                          |
|--|---|--------------------------|
| <b>Course Title: ENVIRONMENTAL ENGINEERING-I (CIVIL)</b> |   |                          |
| <b>Section: Sec A</b>                                    | <b>Date: 06-04-2021</b>                 | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b>                                   | <b>Prepared By: J PURNA CHANDRA RAO</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods  | TOPIC  | Tentative date | Mode of Delivery                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT 1: WATER QUANTITY ESTIMATION &amp; POPULATION FORECASTING</b><br><b>CO1: PLAN AND ESTIMATE WATER QUANTITY REQUIREMENT FOR DOMESTIC USAGE</b><br><b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |                |                                       |
| 1   | Introduction to Environmental Engg                       | 06-04-2021     | Lecture interspersed with discussions |
| 2   | Introduction, Importance of WSS - public health & safety | 07-04-2021     |                                       |
| 3   | Necessity of WSS and features                            | 08-04-2021     |                                       |
| 4   | Water borne diseases                                     | 09-04-2021     |                                       |
| 5   | Flow chart of WSS and objectives                         | 10-04-2021     |                                       |
| 6   | Role of environmental engineer and agency activities     | 12-04-2021     |                                       |
| 7   | Estimation of WD for city, Water demand- design period   | 15-04-2021     |                                       |
| 8   | Types of water demand                                    | 16-04-2021     |                                       |
| 9   | Factors affecting the WD, Variation of WD                | 20-04-2021     |                                       |
| 10  | Population forecasting methods                           | 22-04-2021     |                                       |
| 11  | PFC, Master plan & Numerical Problems                    | 23-04-2021     |                                       |
| 12  | Numerical Problems- Tutorial-I                           | 24-04-2021     |                                       |
| <b>UNIT 2: SOURCES &amp; CONVEYANCE OF WATER</b><br><b>CO2: IDENTIFY THE WATER SOURCE AND SELECT PROPER INTAKE STRUCTURE</b><br><b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b>                         |  |                |                                       |
| 13  | Sources of water, Collection- criteria, suitability      | 26-04-2021     | Lecture interspersed with discussions |
| 14  | Comparison of sources- surface and Ground water sources  | 27-04-2021     |                                       |
| 15  | Capacity of storage reservoir, Pollution                 | 28-04-2021     |                                       |
| 16  | Mass curve analysis, Intakes- selection                  | 29-04-2021     |                                       |
| 17  | Intakes- types   | 30-04-2021     |                                       |
| 18  | Water Conveyance through wells                           | 01-05-2021     |                                       |
| 19  | Water Conveyance through pipes                           | 03-05-2021     |                                       |
| 20  | pipes – types- materials                                 | 04-05-2021     |                                       |
| 21  | pipes corrosion and control- Laying of pipelines         | 05-05-2021     |                                       |
| 22  | Pipes joints - types                                     | 06-05-2021     |                                       |
| 23  | Design considerations- Tutorial                          | 07-05-2021     |                                       |

**UNIT 3: WATER QUALITY ASSESMENT**  
**CO3: CHARACTERISATION OF WATER**  
**TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE**

|    |   |            |  |
|----|---|------------|--|
| 24 | Characteristics of water- sources and pollution     | 08-05-2021 | Lecture interspersed<br>with discussions |
| 25 | Analysis of water- common impurities                | 10-05-2021 |  |
| 26 | Comparisons of sources and tests on water- physical | 11-05-2021 |  |
| 27 | Tests on water- physical                            | 12-05-2021 |  |
| 28 | Tests on water- chemical                            | 13-05-2021 |  |
| 29 | Tests on water- chemical                            | 15-05-2021 |  |
| 30 | Tests on water- bacteriological                     | 17-05-2021 |  |
| 31 | Tests on water- bacteriological                     | 18-05-2021 |  |
| 32 | Standards of drinking water- IS & WHO               | 19-05-2021 |  |
| 33 | Tutorial  | 20-05-2021 |  |

**UNIT 4: PRIMARY WATER TREATMENT**  
**CO4: SELECTION OF SUITABLE TREATMENT FLOW FOR RAW WATER TREATMENTS**  
**TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE**

|    |  |            |  |
|----|--|------------|--|
| 34 | Objectives – flow chart & function of a WTP                | 21-05-2021 | Lecture interspersed<br>with discussions |
| 35 | Theory, purpose & design of a Sedimentation tank           | 22-05-2021 |  |
| 36 | Types of Sedimentation tank                                | 24-05-2021 |  |
| 37 | Theory, purpose & design of Coagulation tank- flocculation | 25-05-2021 |  |
| 38 | Feeding & mixing devices,                                  | 26-05-2021 |  |
| 39 | Types of coagulants- jar test                              | 28-05-2021 |  |
| 40 | Numerical Problems   | 29-05-2021 |  |
| 41 | Theory, types of Filtration tank                           | 31-05-2021 |  |
| 42 | Slow sand filters, Rapid sand filters                      | 01-06-2021 |  |
| 43 | Pressure filters, Comparison btw filters                   | 02-06-2021 |  |
| 44 | Design problems  | 03-06-2021 |  |
| 45 | Merits & Demerits- Tutorial                                | 04-06-2021 |  |

**UNIT 5: DISINFECTION & OTHER TREATMENT METHODS**  
**CO5: SELECTION OF SUITABLE TREATMENT FLOW FOR RAW WATER TREATMENTS**  
**TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE**

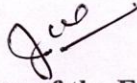
|    |  |            |  |
|----|--|------------|--|
| 46 | Disinfection of water                                  | 05-06-2021 | Lecture interspersed<br>with discussions |
| 47 | Need , methods & Chlorination                          | 07-06-2021 |  |
| 48 | Action & application of chlorine                       | 08-06-2021 |  |
| 49 | Forms of Chlorination                                  | 09-06-2021 |  |
| 50 | Break Point Chlorination & Tests for residual chlorine | 10-06-2021 |  |
| 51 | Water softening- types of hardness                     | 11-06-2021 |  |
| 52 | Need of Water Softening & removal of TH                | 12-06-2021 |  |
| 53 | removal of TH, Iron- manganese removal                 | 16-06-2021 |  |
| 54 | removal of colour, odour and taste                     | 17-06-2021 |  |
| 55 | (Aeration, Adsorption etc) miscellaneous methods       | 18-06-2021 |  |
| 56 | Fluorides & Salts removal methods                      | 19-06-2021 |  |
| 57 | Demineralization, Electra dialysis, Ultrafiltration    | 21-06-2021 |  |
| 58 | Tutorial   | 22-06-2021 |  |

**UNIT 6: WATER DISTRIBUTION SYSTEM**

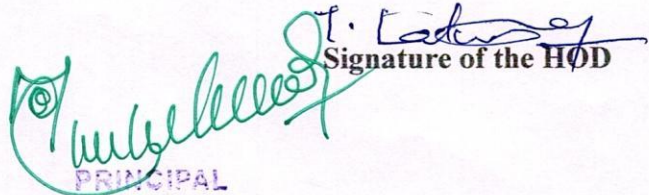
**CO6: SELECT THE APPROPRIATE APPURTENANCES, PLAN AND DESIGN THE WATER DISTRIBUTION NETWORKS**

**TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE**

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 59 | Water Distribution System- Introduction-Need           | 26-06-2021 | Lecture interspersed with discussions |
| 60 | Design Considerations and requirements of distribution | 28-06-2021 |                                       |
| 61 | WSS- methods and Layouts                               | 29-06-2021 |                                       |
| 62 | Systems of supply, types of reservoirs                 | 30-06-2021 |                                       |
| 63 | Water Wastage- Leakage tests and control               | 01-07-2021 |                                       |
| 64 | Types and pressure in WDS and its maintenance          | 02-07-2021 |                                       |
| 65 | Pipes-types  | 03-07-2021 |                                       |
| 66 | Pipes joints, laying (Revision)                        | 05-07-2021 |                                       |
| 67 | Valves and Pipe fittings types                         | 06-07-2021 |                                       |
| 68 | Design & analysis of Pipe Networks                     | 07-07-2021 |                                       |
| 69 | Equivalent method- parallel & series                   | 08-07-2021 |                                       |
| 70 | Hardy Cross method-Numerical problems- Tutorial        | 09-07-2021 |                                       |



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# TENTATIVE LESSON PLAN: CIVIL R1632013

## ENVIRONMENTAL ENGINEERING-I

|  |   |                          |
|--|---|--------------------------|
| <b>Course Title: ENVIRONMENTAL ENGINEERING-I (CIVIL)</b> |   |                          |
| <b>Section: Sec B</b>                                    | <b>Date: 06-04-2021</b>                 | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b>                                   | <b>Prepared By: J PURNA CHANDRA RAO</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods  | TOPIC  | Tentative date | Mode of Delivery                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT 1: WATER QUANTITY ESTIMATION &amp; POPULATION FORECASTING</b><br><b>CO1: PLAN AND ESTIMATE WATER QUANTITY REQUIREMENT FOR DOMESTIC USAGE</b><br><b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |                |                                       |
| 1   | Introduction to Environmental Engg                       | 06-04-2021     | Lecture interspersed with discussions |
| 2   | Introduction, Importance of WSS - public health & safety | 07-04-2021     |                                       |
| 3   | Necessity of WSS and features                            | 08-04-2021     |                                       |
| 4   | Water borne diseases                                     | 09-04-2021     |                                       |
| 5   | Flow chart of WSS and objectives                         | 10-04-2021     |                                       |
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| 8   | Types of water demand                                    | 16-04-2021     |                                       |
| 9   | Factors affecting the WD, Variation of WD                | 20-04-2021     |                                       |
| 10  | Population forecasting methods                           | 22-04-2021     |                                       |
| 11  | PFC, Master plan & Numerical Problems                    | 23-04-2021     |                                       |
| 12  | Numerical Problems- Tutorial-I                           | 24-04-2021     |                                       |
| <b>UNIT 2: SOURCES &amp; CONVEYANCE OF WATER</b><br><b>CO2: IDENTIFY THE WATER SOURCE AND SELECT PROPER INTAKE STRUCTURE</b><br><b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b>                         |  |                |                                       |
| 13  | Sources of water, Collection- criteria, suitability      | 26-04-2021     | Lecture interspersed with discussions |
| 14  | Comparison of sources- surface and Ground water sources  | 27-04-2021     |                                       |
| 15  | Capacity of storage reservoir, Pollution                 | 28-04-2021     |                                       |
| 16  | Mass curve analysis, Intakes- selection                  | 29-04-2021     |                                       |
| 17  | Intakes- types   | 30-04-2021     |                                       |
| 18  | Water Conveyance through wells                           | 01-05-2021     |                                       |
| 19  | Water Conveyance through pipes                           | 03-05-2021     |                                       |
| 20  | pipes – types- materials                                 | 04-05-2021     |                                       |
| 21  | pipes corrosion and control- Laying of pipelines         | 05-05-2021     |                                       |
| 22  | Pipes joints - types                                     | 06-05-2021     |                                       |
| 23  | Design considerations- Tutorial                          | 07-05-2021     |                                       |




| <b>UNIT 3: WATER QUALITY ASSESMENT</b>  |  |            |                                       |
|---|--|------------|---------------------------------------|
| <b>CO3: CHARACTERISATION OF WATER</b>   |  |            |                                       |
| <b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |            |                                       |
| 24  | Characteristics of water- sources and pollution            | 08-05-2021 | Lecture interspersed with discussions |
| 25  | Analysis of water- common impurities                       | 10-05-2021 |                                       |
| 26  | Comparisons of sources and tests on water- physical        | 11-05-2021 |                                       |
| 27  | Tests on water- physical                                   | 12-05-2021 |                                       |
| 28  | Tests on water- chemical                                   | 13-05-2021 |                                       |
| 29  | Tests on water- chemical                                   | 15-05-2021 |                                       |
| 30  | Tests on water- bacteriological                            | 17-05-2021 |                                       |
| 31  | Tests on water- bacteriological                            | 18-05-2021 |                                       |
| 32  | Standards of drinking water- IS & WHO                      | 19-05-2021 |                                       |
| 33  | Tutorial   | 20-05-2021 |                                       |
| <b>UNIT 4: PRIMARY WATER TREATMENT</b>  |  |            |                                       |
| <b>CO4: SELECTION OF SUITABLE TREATMENT FLOW FOR RAW WATER TREATMENTS</b>           |  |            |                                       |
| <b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |            |                                       |
| 34  | Objectives – flow chart & function of a WTP                | 21-05-2021 | Lecture interspersed with discussions |
| 35  | Theory, purpose & design of a Sedimentation tank           | 22-05-2021 |                                       |
| 36  | Types of Sedimentation tank                                | 24-05-2021 |                                       |
| 37  | Theory, purpose & design of Coagulation tank- flocculation | 25-05-2021 |                                       |
| 38  | Feeding & mixing devices,                                  | 26-05-2021 |                                       |
| 39  | Types of coagulants- jar test                              | 28-05-2021 |                                       |
| 40  | Numerical Problems   | 29-05-2021 |                                       |
| 41  | Theory, types of Filtration tank                           | 31-05-2021 |                                       |
| 42  | Slow sand filters, Rapid sand filters                      | 01-06-2021 |                                       |
| 43  | Pressure filters, Comparison btw filters                   | 02-06-2021 |                                       |
| 44  | Design problems  | 03-06-2021 |                                       |
| 45  | Merits & Demerits- Tutorial                                | 04-06-2021 |                                       |
| <b>UNIT 5: DISINFECTION &amp; OTHER TREATMENT METHODS</b>                           |  |            |                                       |
| <b>CO5: SELECTION OF SUITABLE TREATMENT FLOW FOR RAW WATER TREATMENTS</b>           |  |            |                                       |
| <b>TB: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE</b> |  |            |                                       |
| 46  | Disinfection of water                                      | 05-06-2021 | Lecture interspersed with discussions |
| 47  | Need , methods & Chlorination                              | 07-06-2021 |                                       |
| 48  | Action & application of chlorine                           | 08-06-2021 |                                       |
| 49  | Forms of Chlorination                                      | 09-06-2021 |                                       |
| 50  | Break Point Chlorination & Tests for residual chlorine     | 10-06-2021 |                                       |
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| 52  | Need of Water Softening & removal of TH                    | 12-06-2021 |                                       |
| 53  | removal of TH, Iron- manganese removal                     | 16-06-2021 |                                       |
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| 55  | (Aeration, Adsorption etc) miscellaneous methods           | 18-06-2021 |                                       |
| 56  | Fluorides & Salts removal methods                          | 19-06-2021 |                                       |
| 57  | Demineralization, Electra dialysis, Ultrafiltration        | 21-06-2021 |                                       |
| 58  | Tutorial   | 22-06-2021 |                                       |

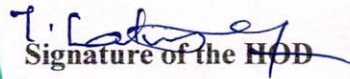
**UNIT 6: WATER DISTRIBUTION SYSTEM**

**CO6: SELECT THE APPROPRIATE APPURTENANCES, PLAN AND DESIGN THE WATER DISTRIBUTION NETWORKS**

**TB: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE**

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 59 | Water Distribution System- Introduction-Need           | 26-06-2021 | Lecture interspersed with discussions |
| 60 | Design Considerations and requirements of distribution | 28-06-2021 |                                       |
| 61 | WSS- methods and Layouts                               | 29-06-2021 |                                       |
| 62 | Systems of supply, types of reservoirs                 | 30-06-2021 |                                       |
| 63 | Water Wastage- Leakage tests and control               | 01-07-2021 |                                       |
| 64 | Types and pressure in WDS and its maintenance          | 02-07-2021 |                                       |
| 65 | Pipes-types  | 03-07-2021 |                                       |
| 66 | Pipes joints, laying (Revision)                        | 05-07-2021 |                                       |
| 67 | Valves and Pipe fittings types                         | 06-07-2021 |                                       |
| 68 | Design & analysis of Pipe Networks                     | 07-07-2021 |                                       |
| 69 | Equivalent method- parallel & series                   | 08-07-2021 |                                       |
| 70 | Hardy Cross method-Numerical problems- Tutorial        | 09-07-2021 |                                       |

  
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## TENTATIVE LESSON PLAN: CIVIL R1632014

**Course Title: WATER RESOURCES ENGINEERING-I (CIVIL)**

|                        |  |                          |
|------------------------|--|--------------------------|
| <b>Section: Sec A</b>  | <b>Date: 06-04-2021</b>                | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b> | <b>Prepared By: K CHANDRA PADMAKAR</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods   | TOPIC   | Actual Date | Mode of Delivery                      |
|--|---|-------------|---------------------------------------|
| <b>UNIT 1: INTRODUCTION AND PRECIPITATION:</b>   |   |             |                                       |
| TB: ENGINEERING HYDROLOGY BY Dr. P. JAYARAMI REDDY   |   |             |                                       |
| CO1: To develop IDF and DAD curves for designing hydraulic structures.   |   |             |                                       |
| 1  | Unit – I: Introduction: engineering hydrology                   | 06-04-2021  | Lecture interspersed with discussions |
| 2  | Applications of hydrology                                       | 07-04-2021  |                                       |
| 3  | Hydrologic cycle  | 08-04-2021  |                                       |
| 4  | Hydrological data   | 09-04-2021  |                                       |
| 5  | Meteorological data   | 10-04-2021  |                                       |
| 6  | Precipitation: Introduction, forms of precipitation             | 12-04-2021  |                                       |
| 7  | Types of precipitation  | 15-04-2021  |                                       |
| 8  | Measurement of precipitation                                    | 16-04-2021  |                                       |
| 9  | Rain gauge network  | 17-04-2021  |                                       |
| 10   | Presentation of rainfall data                                   | 19-04-2021  |                                       |
| 11   | Computation of average rainfall                                 | 20-04-2021  |                                       |
| 12   | Estimation of missing rainfall data                             | 22-04-2021  |                                       |
| 13   | Continuity and consistency of rainfall data                     | 23-04-2021  |                                       |
| 14   | Depth - area – duration curves, probable maximum precipitation  | 24-04-2021  |                                       |
| 15   | Frequency of rainfall, intensity – duration – frequency curves  | 26-04-2021  |                                       |
| <b>UNIT 2: ABSTRACTIONS FROM PRECIPITATION:</b>  |   |             |                                       |
| EVAPORATION, EVAPOTRANSPIRATION, INFILTRATION: TB: HYDROLOGY BY RAGHUNATH. H. M.   |   |             |                                       |
| CO2: To make the student to be able to quantify hydrologic components and apply key concepts to several practical areas of engineering hydrology and related design aspects. |   |             |                                       |
| 16   | Unit – II: Abstraction from precipitation: Initial abstractions | 27-04-2021  | Lecture interspersed with discussions |
| 17   | Evaporation: Factors affecting evaporation                      | 28-04-2021  |                                       |
| 18   | Measurement of evaporation                                      | 29-04-2021  |                                       |
| 19   | Reduction   | 30-04-2021  |                                       |
| 20   | Evapotranspiration: Factors affecting                           | 01-05-2021  |                                       |
| 21   | Measurement, control  | 03-05-2021  |                                       |
| 22   | Infiltration: Factors affecting                                 | 04-05-2021  |                                       |
| 23   | Measurement and infiltration indices                            | 05-05-2021  |                                       |
| 24   | Infiltration capacity curves                                    | 06-05-2021  |                                       |

**UNIT 3: RUNOFF AND HYDROGRAPH ANALYSIS**

TB: ENGINEERING HYDROLOGY BY Dr. JAYARAMI REDDY

**CO 3:** The student should be able to develop unit hydrographs and synthetic unit hydrograph.

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 25 | Unit – III: Runoff: Catchment characteristics              | 07-05-2021 | Lecture interspersed with discussions |
| 26 | Factors affecting runoff                                   | 08-05-2021 |                                       |
| 27 | Computation of runoff                                      | 10-05-2021 |                                       |
| 28 | Stream gauging, rating curve                               | 11-05-2021 |                                       |
| 29 | Flow mass curve and flow duration curve                    | 12-05-2021 |                                       |
| 30 | Hydrograph analysis: Components of hydrograph              | 13-05-2021 |                                       |
| 31 | Separation of base flow                                    | 15-05-2021 |                                       |
| 32 | Effective rainfall hyetograph and direct runoff hydrograph | 17-05-2021 |                                       |
| 33 | Unit hydrograph, assumptions                               | 07-05-2021 |                                       |
| 34 | Derivation of unit hydrograph                              | 18-05-2021 |                                       |
| 35 | Unit hydrographs of different durations                    | 19-05-2021 |                                       |
| 36 | Principle of superposition and S – hydrograph methods      | 20-05-2021 |                                       |
| 37 | Limitations and applications of unit hydrograph            | 21-05-2021 |                                       |
| 38 | Synthetic unit hydrograph                                  | 22-05-2021 |                                       |

**UNIT 4: FLOODS AND FLOOD ROUTING:**

TB: ENGINEERING HYDROLOGY BY: Dr. P. JAYARAMI REDDY

**CO4:** The student will be able to estimate flood magnitude and carry out flood routing.

|    |   |            |                                       |
|----|---|------------|---------------------------------------|
| 39 | Unit – IV: Floods: Causes and effects                 | 24-05-2021 | Lecture interspersed with discussions |
| 40 | Frequency analysis                                    | 25-05-2021 |                                       |
| 41 | Gumbels and log-pearson type III distribution methods | 26-05-2021 |                                       |
| 42 | Standard project flood                                | 27-05-2021 |                                       |
| 43 | Probable maximum flood                                | 28-05-2021 |                                       |
| 44 | Flood control methods and management                  | 29-05-2021 |                                       |
| 45 | Flood routing: Hydrologic routing                     | 31-05-2021 |                                       |
| 46 | Channel and reservoir routing                         | 01-06-2021 |                                       |
| 47 | Muskingum method of routing                           | 02-06-2021 |                                       |
| 48 | Puls method of routing                                | 03-06-2021 |                                       |

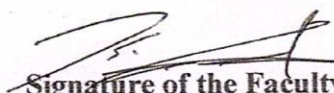
**UNIT 5: GROUND WATER**

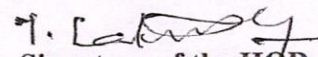
TB: HYDROLOGY BY RAGHUNATH H.M.

**CO 5:** To make the student to determine the aquifer parameters and yield from wells.

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 49 | Unit – V: Ground water: Occurrence of ground water | 04-06-2021 | Lecture interspersed with discussions |
| 50 | Types of aquifers                                  | 05-06-2021 |                                       |
| 51 | Aquifer parameters, porosity                       | 07-06-2021 |                                       |
| 52 | Specific yield, permeability                       | 08-06-2021 |                                       |

|  |   |            |                                       |
|--|---|------------|---------------------------------------|
| 53   | Transmissivity and storage coefficient                              | 09-06-2021 |                                       |
| 54   | Types of wells, Darcy's law   | 10-06-2021 |                                       |
| 55   | Dupit's equation – steady radial flow to wells in confined aquifers | 11-06-2021 |                                       |
| 56   | Steady radial flow to wells in unconfined aquifers                  | 12-06-2021 |                                       |
| 57   | Yield of an open well   | 14-06-2021 |                                       |
| 58   | Recuperation test   | 15-06-2021 |                                       |
| <b>UNIT 6: ADVANCED TOPICS IN HYDROLOGY:</b><br><b>TB: ENGINEERING HYDROLOGY BY Dr. P. JAYARAMI REDDY</b><br><b>CO6: The student will be able to model hydrologic processes.</b> |   |            |                                       |
| 59   | Unit – VI: Advanced topics in hydrology:<br>Introduction            | 16-06-2021 | Lecture interspersed with discussions |
| 60   | Rainfall – runoff modeling  | 17-06-2021 |                                       |
| 61   | Instantaneous unit hydrograph                                       | 18-06-2021 |                                       |
| 62   | Conceptual models   | 19-06-2021 |                                       |
| 63   | Clark and Nash models   | 21-06-2021 |                                       |
| 64   | General hydrological models   | 22-6-2021  |                                       |
| 65   | Chow's model  | 23-06-2021 |                                       |
| 66   | Kulandaiswamy's model   | 24-06-2021 |                                       |
| 67   | Revision  | 25-06-2021 |                                       |
| 68   | Revision  | 26-06-2021 |                                       |
| 69   | Revision  | 29-06-2021 |                                       |

  
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6/4/21



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## TENTATIVE LESSON PLAN: CIVIL R1632014

**Course Title: WATER RESOURCES ENGINEERING-I(CIVIL)**

|                        |  |                          |
|------------------------|--|--------------------------|
| <b>Section: Sec B</b>  | <b>Date: 06-04-2021</b>                | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b> | <b>Prepared By: K CHANDRA PADMAKAR</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods   | TOPIC   | Actual Date | Mode of Delivery                      |
|--|---|-------------|---------------------------------------|
| <b>UNIT 1: INTRODUCTION AND PRECIPITATION:</b>   |   |             |                                       |
| TB: ENGINEERING HYDROLOGY BY Dr. P. JAYARAMI REDDY   |   |             |                                       |
| CO1: To develop IDF and DAD curves for designing hydraulic structures.   |   |             |                                       |
| 1  | Unit – I: Introduction: engineering hydrology                   | 06-04-2021  | Lecture interspersed with discussions |
| 2  | Applications of hydrology                                       | 07-04-2021  |                                       |
| 3  | Hydrologic cycle  | 08-04-2021  |                                       |
| 4  | Hydrological data   | 09-04-2021  |                                       |
| 5  | Meteorological data   | 10-04-2021  |                                       |
| 6  | Precipitation: Introduction, forms of precipitation             | 12-04-2021  |                                       |
| 7  | Types of precipitation  | 15-04-2021  |                                       |
| 8  | Measurement of precipitation                                    | 16-04-2021  |                                       |
| 9  | Rain gauge network  | 17-04-2021  |                                       |
| 10   | Presentation of rainfall data                                   | 19-04-2021  |                                       |
| 11   | Computation of average rainfall                                 | 20-04-2021  |                                       |
| 12   | Estimation of missing rainfall data                             | 22-04-2021  |                                       |
| 13   | Continuity and consistency of rainfall data                     | 23-04-2021  |                                       |
| 14   | Depth - area – duration curves, probable maximum precipitation  | 24-04-2021  |                                       |
| 15   | Frequency of rainfall, intensity – duration – frequency curves  | 26-04-2021  |                                       |
| <b>UNIT 2: ABSTRACTIONS FROM PRECIPITATION:</b>  |   |             |                                       |
| EVAPORATION, EVAPOTRANSPIRATION, INFILTRATION: TB: HYDROLOGY BY RAGHUNATH. H. M.   |   |             |                                       |
| CO2: To make the student to be able to quantify hydrologic components and apply key concepts to several practical areas of engineering hydrology and related design aspects. |   |             |                                       |
| 16   | Unit – II: Abstraction from precipitation: Initial abstractions | 27-04-2021  | Lecture interspersed with discussions |
| 17   | Evaporation: Factors affecting evaporation                      | 28-04-2021  |                                       |
| 18   | Measurement of evaporation                                      | 29-04-2021  |                                       |
| 19   | Reduction   | 30-04-2021  |                                       |
| 20   | Evapotranspiration: Factors affecting                           | 01-05-2021  |                                       |
| 21   | Measurement, control  | 03-05-2021  |                                       |
| 22   | Infiltration: Factors affecting                                 | 04-05-2021  |                                       |
| 23   | Measurement and infiltration indices                            | 05-05-2021  |                                       |
| 24   | Infiltration capacity curves                                    | 06-05-2021  |                                       |

**UNIT 3: RUNOFF AND HYDROGRAPH ANALYSIS**

TB: ENGINEERING HYDROLOGY BY Dr. JAYARAMI REDDY

**CO 3:** The student should be able to develop unit hydrographs and synthetic unit hydrograph.

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 25 | Unit – III: Runoff: Catchment characteristics              | 07-05-2021 | Lecture interspersed with discussions |
| 26 | Factors affecting runoff                                   | 08-05-2021 |                                       |
| 27 | Computation of runoff                                      | 10-05-2021 |                                       |
| 28 | Stream gauging, rating curve                               | 11-05-2021 |                                       |
| 29 | Flow mass curve and flow duration curve                    | 12-05-2021 |                                       |
| 30 | Hydrograph analysis: Components of hydrograph              | 13-05-2021 |                                       |
| 31 | Separation of base flow                                    | 15-05-2021 |                                       |
| 32 | Effective rainfall hyetograph and direct runoff hydrograph | 17-05-2021 |                                       |
| 33 | Unit hydrograph, assumptions                               | 07-05-2021 |                                       |
| 34 | Derivation of unit hydrograph                              | 18-05-2021 |                                       |
| 35 | Unit hydrographs of different durations                    | 19-05-2021 |                                       |
| 36 | Principle of superposition and S – hydrograph methods      | 20-05-2021 |                                       |
| 37 | Limitations and applications of unit hydrograph            | 21-05-2021 |                                       |
| 38 | Synthetic unit hydrograph                                  | 22-05-2021 |                                       |

**UNIT 4: FLOODS AND FLOOD ROUTING:**

TB: ENGINEERING HYDROLOGY BY: Dr. P. JAYARAMI REDDY

**CO 4:** The student will be able to estimate flood magnitude and carry out flood routing.

|    |   |            |                                       |
|----|---|------------|---------------------------------------|
| 39 | Unit – IV: Floods: Causes and effects                 | 24-05-2021 | Lecture interspersed with discussions |
| 40 | Frequency analysis                                    | 25-05-2021 |                                       |
| 41 | Gumbels and log-pearson type III distribution methods | 26-05-2021 |                                       |
| 42 | Standard project flood                                | 27-05-2021 |                                       |
| 43 | Probable maximum flood                                | 28-05-2021 |                                       |
| 44 | Flood control methods and management                  | 29-05-2021 |                                       |
| 45 | Flood routing: Hydrologic routing                     | 31-05-2021 |                                       |
| 46 | Channel and reservoir routing                         | 01-06-2021 |                                       |
| 47 | Muskingum method of routing                           | 02-06-2021 |                                       |
| 48 | Puls method of routing                                | 03-06-2021 |                                       |

**UNIT 5: GROUND WATER**

TB: HYDROLOGY BY RAGHUNATH H.M.

**CO 5:** To make the student to determine the aquifer parameters and yield from wells.

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 49 | Unit – V: Ground water: Occurrence of ground water | 04-06-2021 | Lecture interspersed with discussions |
| 50 | Types of aquifers                                  | 05-06-2021 |                                       |
| 51 | Aquifer parameters, porosity                       | 07-06-2021 |                                       |
| 52 | Specific yield, permeability                       | 08-06-2021 |                                       |

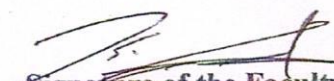
|    |   |            |  |
|----|---|------------|--|
| 53 | Transmissivity and storage coefficient                              | 09-06-2021 |  |
| 54 | Types of wells, Darcy's law   | 10-06-2021 |  |
| 55 | Dupit's equation – steady radial flow to wells in confined aquifers | 11-06-2021 |  |
| 56 | Steady radial flow to wells in unconfined aquifers                  | 12-06-2021 |  |
| 57 | Yield of an open well   | 14-06-2021 |  |
| 58 | Recuperation test   | 15-06-2021 |  |

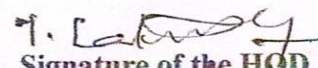
**UNIT 6: ADVANCED TOPICS IN HYDROLOGY:**

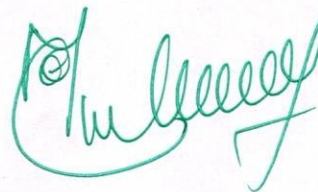
TB: ENGINEERING HYDROLOGY BY Dr. P. JAYARAMI REDDY

CO6: The student will be able to model hydrologic processes.

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 59 | Unit – VI: Advanced topics in hydrology:<br>Introduction | 16-06-2021 | Lecture interspersed with discussions |
| 60 | Rainfall – runoff modeling                               | 17-06-2021 |                                       |
| 61 | Instantaneous unit hydrograph                            | 18-06-2021 |                                       |
| 62 | Conceptual models  | 19-06-2021 |                                       |
| 63 | Clark and Nash models                                    | 21-06-2021 |                                       |
| 64 | General hydrological models                              | 22-6-2021  |                                       |
| 65 | Chow's model   | 23-06-2021 |                                       |
| 66 | Kulandaiswamy's model                                    | 24-06-2021 |                                       |
| 67 | Revision   | 25-06-2021 |                                       |
| 68 | Revision   | 26-06-2021 |                                       |
| 69 | Revision   | 29-06-2021 |                                       |

  
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## TENTATIVE LESSON PLAN

|   |                                     |                           |
|---|-------------------------------------|---------------------------|
| <b>Course Title: WASTE WATER MANAGEMENT ( R163201D)</b> |                                     |                           |
| <b>Section : Sec A</b>                                  | <b>Date : 06-04-2021</b>            | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                 | <b>Prepared By: N.KRANTHI REKHA</b> | <b>Approved By : HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods   | TOPIC                                       | Date       | Mode of Delivery                      |
|--|---|------------|---------------------------------------|
| <b>UNIT-III</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 1: To know about collection and conveyance of industrial waste water.</b> |   |            |                                       |
| 1  | BASIC THERIES OF IWWM                       | 06-04-2021 | Lecture interspersed with discussions |
| 2  | IWS   | 07-04-2021 |                                       |
| 3  | MEASUREMENT OF IWW                          | 08-04-2021 |                                       |
| 4  | IWW GENERATION RATES                        | 09-04-2021 |                                       |
| 5  | IWW SAMPLING                                | 10-04-2021 |                                       |
| 6  | IWW PRESERVATION                            | 12-04-2021 |                                       |
| 7  | WW CHARECTERISATION                         | 15-04-2021 |                                       |
| 8  | TOXICITY OF IWW                             | 16-04-2021 |                                       |
| 9  | TREATMENT OF WW                             | 20-04-2021 |                                       |
| 10   | UNIT OPERATIONS                             | 22-04-2021 |                                       |
| 11   | UNIT PROCESSES                              | 23-04-2021 |                                       |
| 12   | VOLUME REDUCTION                            | 24-04-2021 |                                       |
| 13   | STRENGTH REDUCTION                          | 26-04-2021 |                                       |
| 14   | NEUTRALIZATION                              | 27-04-2021 |                                       |
| 15   | EQUALIZATION                                | 28-04-2021 |                                       |
| 16   | PROPORTIONING                               | 29-04-2021 |                                       |
| 17   | <b>TUTORIAL</b>                             | 30-04-2021 |                                       |
| 18   | RECYCLE, REUSE, RESOURCES RECOVERY          | 01-05-2021 |                                       |
| <b>UNIT IV</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 2: To know about collection and conveyance of industrial waste water</b>   |   |            |                                       |
| 19   | IWW DISPOSAL MANAGEMENT                     | 03-05-2021 | Lecture interspersed with discussions |
| 20   | DISCHARGES INTO WATER BODIES- STREAMS, SEAS | 04-05-2021 |                                       |
| 21   | DISCHARGES INTO WATER BODIES-LAKES          | 05-05-2021 |                                       |
| 22   | DISCHARGES INTO WATER BODIES-RIVERS         | 06-05-2021 |                                       |
| 23   | LAND TREATMENT                              | 07-05-2021 |                                       |
| 24   | CETP- PROCESS                               | 08-05-2021 |                                       |
| 25   | CETP-TREATMENT UNITS                        | 10-05-2021 |                                       |
| 26   | CETP-ADVANTAGES, DISADVANTAGES              | 11-05-2021 |                                       |
| 27   | CETP-LIMITATIONS, CHALLENGES                | 12-05-2021 |                                       |
| 28   | <b>TUTORIAL</b>                             | 13-05-2021 |                                       |
| 29   | RECIRCULATION OF IW                         | 15-05-2021 |                                       |

|  |                                       |            |                                       |
|--|---------------------------------------|------------|---------------------------------------|
| 30   | EFFLUENT DISPOSAL METHODS             | 17-05-2021 |                                       |
| <b>UNIT II</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 3: To know about preliminary and primary treatment of industrial waste water.</b>  |                                       |            |                                       |
| 31   | MISCELLANOUS TREATMENTS               | 18-05-2021 | Lecture interspersed with discussions |
| 32   | USE OF MWW IN INDUSTRIES              | 19-05-2021 |                                       |
| 33   | ADVANCED WWT PROCESSES                | 20-05-2021 |                                       |
| 34   | R.O                                   | 21-05-2021 |                                       |
| 35   | U.F                                   | 22-05-2021 |                                       |
| 36   | FREEZING                              | 24-05-2021 |                                       |
| 37   | ION EXCHANGE                          | 25-05-2021 |                                       |
| 38   | ELUTRIATION                           | 26-05-2021 |                                       |
| 39   | REMOVAL OF COLOUR,ODOUR               | 28-05-2021 |                                       |
| 40   | REMOVAL OF IRON AND MANGANESE         | 29-05-2021 |                                       |
| 41   | <b>TUTORIAL</b>                       | 31-05-2021 |                                       |
| 42   | ADSORPTION                            | 01-06-2021 |                                       |
| <b>UNIT I</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 4: To know about biological treatment of waste water of industrial waste water.</b> |                                       |            |                                       |
| 43   | IWW QUALITY AND QUANTITY REQUIREMENTS | 02-06-2021 | Lecture interspersed with discussions |
| 44   | BOILER AND COOLING WATERS             | 03-06-2021 |                                       |
| 45   | TEXTILE INDUSTRY- PROCESS             | 04-06-2021 |                                       |
| 46   | FOOD PROCESSING INDUSTRY- PROCESS     | 05-06-2021 |                                       |
| 47   | BREWERY INDUSTRY- PROCESS             | 07-06-2021 |                                       |
| 48   | POWERPLANTS INDUSTRY- PROCESS         | 08-06-2021 |                                       |
| 49   | FERTILIZERS INDUSTRY- PROCESS         | 09-06-2021 |                                       |
| 50   | SUGAR MILLS INDUSTRY- PROCESS         | 10-06-2021 |                                       |
| 51   | IWW QUALITY AND QUANTITY REQUIREMENTS | 11-06-2021 |                                       |
| 52   | BOILER AND COOLING WATERS             | 12-06-2021 |                                       |
| <b>UNIT V</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 5: To know about advanced treatments of industrial waste water.</b>                 |                                       |            |                                       |
| 53   | STEEL PLANTS                          | 16-06-2021 | Lecture interspersed with discussions |
| 54   | FERTILIZERS INDUSTRY                  | 17-06-2021 |                                       |
| 55   | TEXTILE INDUSTRY                      | 18-06-2021 |                                       |
| 56   | PAPER AND PULP                        | 19-06-2021 |                                       |
| 57   | OIL REFINERIES                        | 21-06-2021 |                                       |
| 58   | COAL AND GAS BASED POWER PLANTS       | 22-6-2021  |                                       |

**NIT VI**

**T1: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE.**  
**T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.**

**CO 6: To know about industrial waste water disposal and sludge disposal.**

|    |  |            |  |
|----|--|------------|--|
| 59 | TANNERIES INDUSTRY WW -TREATMENT             | 26-06-2021 | Lecture interspersed with discussions. |
| 60 | SUGAR MILLS INDUSTRY WW – TREATMENT          | 28-06-2021 |  |
| 61 | DISTILLERS INDUSTRY WW –TREATMENT            | 29-06-2021 |  |
| 62 | DAIRY INDUSTRY WW –TREATMENT                 | 30-06-2021 |  |
| 63 | FOOD PROCESSING INDUSTRY WW – TREATMENT      | 01-07-2021 |  |
| 64 | PHARMACEUTICAL PLANTS INDUSTRY WW -TREATMENT | 02-07-2021 |  |
| 65 | <b>TUTORIAL</b>                              | 03-07-2021 |  |
| 66 | REVISION                                     | 05-07-2021 |  |

*N/S 06/4/21*  
Signature of the Faculty

*J. Lakshmi*  
Signature of the HOD  
6/4/21

*Chandrasekhar*

PRINCIPAL  
SRK Institute of Technology  
ENIKEPADU, VIJAYAWADA-521 108

## TENTATIVE LESSON PLAN

|   |                                     |                           |
|---|-------------------------------------|---------------------------|
| <b>Course Title: WASTE WATER MANAGEMENT ( R163201D)</b> |                                     |                           |
| <b>Section : Sec B</b>                                  | <b>Date : 06-04-2021</b>            | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>                                 | <b>Prepared By: N.KRANTHI REKHA</b> | <b>Approved By : HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods   | TOPIC                                     | Date       | Mode of Delivery                      |
|--|---|------------|---------------------------------------|
| <b>UNIT-III</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 1: To know about collection and conveyance of industrial waste water.</b> |   |            |                                       |
| 1  | BASIC THERIES OF IWWM                     | 06-04-2021 | Lecture interspersed with discussions |
| 2  | IWS                                       | 07-04-2021 |                                       |
| 3  | MEASUREMENT OF IWW                        | 08-04-2021 |                                       |
| 4  | IWW GENERATION RATES                      | 09-04-2021 |                                       |
| 5  | IWW SAMPLING                              | 10-04-2021 |                                       |
| 6  | IWW PRESERVATION                          | 12-04-2021 |                                       |
| 7  | WW CHARECTERISATION                       | 15-04-2021 |                                       |
| 8  | TOXICITY OF IWW                           | 16-04-2021 |                                       |
| 9  | TREATMENT OF WW                           | 20-04-2021 |                                       |
| 10   | UNIT OPERATIONS                           | 22-04-2021 |                                       |
| 11   | UNIT PROCESSES                            | 23-04-2021 |                                       |
| 12   | VOLUME REDUCTION                          | 24-04-2021 |                                       |
| 13   | STRENGTH REDUCTION                        | 26-04-2021 |                                       |
| 14   | NEUTRALIZATION                            | 27-04-2021 |                                       |
| 15   | EQUALIZATION                              | 28-04-2021 |                                       |
| 16   | PROPORTIONING                             | 29-04-2021 |                                       |
| 17   | <b>TUTORIAL</b>                           | 30-04-2021 |                                       |
| 18   | RECYCLE,REUSE,RESOURCES RECOVERY          | 01-05-2021 |                                       |
| <b>UNIT IV</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 2: To know about collection and conveyance of industrial waste water</b>   |   |            |                                       |
| 19   | IWW DISPOSAL MANAGEMENT                   | 03-05-2021 | Lecture interspersed with discussions |
| 20   | DISCHARGES INTO WATER BODIES-STREAMS,SEAS | 04-05-2021 |                                       |
| 21   | DISCHARGES INTO WATER BODIES-LAKES        | 05-05-2021 |                                       |
| 22   | DISCHARGES INTO WATER BODIES-RIVERS       | 06-05-2021 |                                       |
| 23   | LAND TREATMENT                            | 07-05-2021 |                                       |
| 24   | CETP- PROCESS                             | 08-05-2021 |                                       |
| 25   | CETP-TREATMENT UNITS                      | 10-05-2021 |                                       |
| 26   | CETP-ADVANTAGES,DISADVANTAGES             | 11-05-2021 |                                       |
| 27   | CETP-LIMITATIONS, CHALLENGES              | 12-05-2021 |                                       |
| 28   | <b>TUTORIAL</b>                           | 13-05-2021 |                                       |
| 29   | RECIRCULATION OF IW                       | 15-05-2021 |                                       |

|  |                                       |            |                                       |
|--|---------------------------------------|------------|---------------------------------------|
| 30   | EFFLUENT DISPOSAL METHODS             | 17-05-2021 |                                       |
| <b>UNIT II</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 3: To know about preliminary and primary treatment of industrial waste water.</b>  |                                       |            |                                       |
| 31   | MISCELLANOUS TREATMENTS               | 18-05-2021 | Lecture interspersed with discussions |
| 32   | USE OF MWW IN INDUSTRIES              | 19-05-2021 |                                       |
| 33   | ADVANCED WWT PROCESSES                | 20-05-2021 |                                       |
| 34   | R.O                                   | 21-05-2021 |                                       |
| 35   | U.F                                   | 22-05-2021 |                                       |
| 36   | FREEZING                              | 24-05-2021 |                                       |
| 37   | ION EXCHANGE                          | 25-05-2021 |                                       |
| 38   | ELUTRIATION                           | 26-05-2021 |                                       |
| 39   | REMOVAL OF COLOUR,ODOUR               | 28-05-2021 |                                       |
| 40   | REMOVAL OF IRON AND MANGANESE         | 29-05-2021 |                                       |
| 41   | <b>TUTORIAL</b>                       | 31-05-2021 |                                       |
| 42   | ADSORPTION                            | 01-06-2021 |                                       |
| <b>UNIT I</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 4: To know about biological treatment of waste water of industrial waste water.</b> |                                       |            |                                       |
| 43   | IWW QUALITY AND QUANTITY REQUIREMENTS | 02-06-2021 | Lecture interspersed with discussions |
| 44   | BOILER AND COOLING WATERS             | 03-06-2021 |                                       |
| 45   | TEXTILE INDUSTRY- PROCESS             | 04-06-2021 |                                       |
| 46   | FOOD PROCESSING INDUSTRY- PROCESS     | 05-06-2021 |                                       |
| 47   | BREWERY INDUSTRY- PROCESS             | 07-06-2021 |                                       |
| 48   | POWERPLANTS INDUSTRY- PROCESS         | 08-06-2021 |                                       |
| 49   | FERTILIZERS INDUSTRY- PROCESS         | 09-06-2021 |                                       |
| 50   | SUGAR MILLS INDUSTRY- PROCESS         | 10-06-2021 |                                       |
| 51   | IWW QUALITY AND QUANTITY REQUIREMENTS | 11-06-2021 |                                       |
| 52   | BOILER AND COOLING WATERS             | 12-06-2021 |                                       |
| <b>UNIT V</b><br><b>T1: WATER SUPPLY &amp; SANITATION ENGINEERING BY J.S.BIRDIE &amp; B.S.BIRDIE.</b><br><b>T2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.</b><br><b>CO 5: To know about advanced treatments of industrial waste water.</b>                 |                                       |            |                                       |
| 53   | STEEL PLANTS                          | 16-06-2021 | Lecture interspersed with discussions |
| 54   | FERTILIZERS INDUSTRY                  | 17-06-2021 |                                       |
| 55   | TEXTILE INDUSTRY                      | 18-06-2021 |                                       |
| 56   | PAPER AND PULP                        | 19-06-2021 |                                       |
| 57   | OIL REFINERIES                        | 21-06-2021 |                                       |
| 58   | COAL AND GAS BASED POWER PLANTS       | 22-6-2021  |                                       |

**NIT VI**

**U1: WATER SUPPLY & SANITATION ENGINEERING BY J.S.BIRDIE & B.S.BIRDIE.**

**U2: ENVIRONMENTAL ENGINEERING BY N.N.BASAK.**

**CO 6: To know about industrial waste water disposal and sludge disposal.**

|    |  |            |  |
|----|--|------------|--|
| 59 | TANNERIES INDUSTRY WW -TREATMENT             | 26-06-2021 | Lecture interspersed with discussions. |
| 60 | SUGAR MILLS INDUSTRY WW – TREATMENT          | 28-06-2021 |  |
| 61 | DISTILLERS INDUSTRY WW –TREATMENT            | 29-06-2021 |  |
| 62 | DAIRY INDUSTRY WW –TREATMENT                 | 30-06-2021 |  |
| 63 | FOOD PROCESSING INDUSTRY WW – TREATMENT      | 01-07-2021 |  |
| 64 | PHARMACEUTICAL PLANTS INDUSTRY WW -TREATMENT | 02-07-2021 |  |
| 65 | <b>TUTORIAL</b>                              | 03-07-2021 |  |
| 66 | REVISION                                     | 05-07-2021 |  |

*N/S 06/4/21*  
Signature of the Faculty

*J. Lakshmi*  
Signature of the HOD  
6/4/21

*[Signature]*  
PRINCIPAL  
SRK Institute of Technology  
ENIKEPADU, VIJAYAWADA-521 108

**TENTATIVE LESSON PLAN: R1642011**

|   |                               |                           |
|---|-------------------------------|---------------------------|
| <b>Course Title: ESTIMATING,SPECIFICATIONS AND CONTRACTS( R1642011)</b> |                               |                           |
| <b>Section : Sec A</b>  | <b>Date : 3-4-2021</b>        | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>   | <b>Prepared By :G.Sahithi</b> | <b>Approved By : HOD</b>  |

**Tools: Black board**

|  | TOPIC   | DATE       | MODE OF DELIVERY                       |
|--|---|------------|--|
| <b>UNIT – I INTRODUCTION:GENERAL ITEMS OF WORK IN BUILDINGS</b>  |   |            |  |
| <b>CO1:</b> The student will be able to calculate quantity of different components of the buildings and know about types of estimates. |   |            |  |
| <b>TB::</b> ‘Estimating and Costing’ by B.N. Dutta, UBS publishers, 2000.  |   |            |  |
| <b>TB::</b> Estimating and Costing’ by G.S. Birdie.  |   |            |  |
| 1.   | <b>UNIT-I:Introduction:</b> about estimation , specifications                   | 06-04-2021 | Lectures interspersed with discussions |
| 2.   | Purpose of estimation   | 07-04-2021 |  |
| 3.   | General items of work excavation, filling, concrete in foundation               | 08-04-2021 |  |
| 4.   | General items of work soling ,dam proof course,masonry,arch masonry,lintels .   | 09-04-2021 |  |
| 5.   | General items of work RCC,RB works,flooring,roofing,plastering,pointing,cornice | 10-04-2021 |  |
| 6.   | General items of works doors, windows,wood work,iron work                       | 12-04-2021 |  |
| 7.   | White washing,painting,lumpsum items  | 15-04-2021 |  |
| 8.   | Standard units , principles of working out quantities                           | 16-04-2021 |  |
| 9.   | Types of estimates  | 17-04-2021 |  |
| 10.  | Description of detailed estimates   | 19-04-2021 |  |
| 11.  | Description ob abstract estimates   | 20-04-2021 |  |
| 12.  | Methods of approximate estimates  | 22-04-2021 |  |
| <b>UNIT – II RATE ANALYSIS</b>   |   |            |  |
| <b>CO2:</b> The student will be able to find the cost of various building components.  |   |            |  |
| <b>TB::</b> ‘Estimating and Costing’ by B.N. Dutta, UBS publishers, 2000.  |   |            |  |
| <b>TB::</b> Estimating and Costing’ by G.S. Birdie.  |   |            |  |
| 13   | Introduction to rate analysis   | 23-04-2021 | Lectures interspersed with discussions |
| 14   | Calculation of mazdoor required   | 24-04-2021 |  |
| 15   | Rate analysis problems on excavation for foundation                             | 26-04-2021 |  |
| 16   | Sand filling in plinth problems   | 27-04-2021 |  |
| 17   | Rate analysis for cement concrete   | 28-04-2021 |  |
| 18   | Rate analysis for lime concrete in foundation                                   | 29-04-2021 |  |
| 19   | Rate analysis for brick work with standard bricks                               | 30-04-2021 | Lectures                               |
| 20   | Rate analysis for plastering and pointing                                       | 01-05-2021 |  |

|    |   |            |                               |
|----|---|------------|-------------------------------|
| 21 | Rate analysis for cement concrete floor     | 03-05-2021 | interspersed with discussions |
| 22 | Rate analysis for painting , varnishing     | 04-05-2021 |                               |
| 23 | Rate analysis for mosaic floor finish       | 05-05-2021 |                               |
| 24 | Rate analysis for reinforcement , RCC works | 06-05-2021 |                               |
| 25 | Rate analysis for other works               | 07-05-2021 |                               |
| 26 | Tutorial                                    | 08-05-2021 |                               |

### UNIT-III: EARTHWORK FOR ROADS AND CANALS

**CO2:** The student will have knowledge of calculation of earthwork for roads and canals and bar bending schedules

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

**TB::** Estimating and Costing' by G.S. Birdie.

|    |  |            |  |
|----|--|------------|--|
| 27 | Introduction to earth work                         | 10-05-2021 | Lectures interspersed with discussions |
| 28 | Embankment, cutting definitions                    | 11-05-2021 |  |
| 29 | Reinforcement , bar bending concept                | 12-05-2021 |  |
| 30 | Bar requirement schedules                          | 13-05-2021 |  |
| 31 | Methods for earthwork for roads                    | 15-05-2021 |  |
| 32 | Problems on mid sectional area method              | 17-05-2021 |  |
| 33 | Problems on mean sectional area method             | 18-05-2021 |  |
| 34 | Problems on Prismoidal formula method              | 19-05-2021 |  |
| 35 | Problems on trapezoidal formula method             | 20-05-2021 |  |
| 36 | Problems on area of side slopes                    | 21-05-2021 |  |
| 37 | Problems on earthwork for canals                   | 22-05-2021 |  |
| 38 | Earthwork for canals based on Prismoidal formula   | 24-05-2021 |  |
| 39 | Problems on combinations of embankment and cutting | 25-05-2021 |  |
| 40 | Tutorial   | 26-05-2021 |  |

### UNIT – IV CONTRACTS

**CO4:** The student will know various specifications and components of buildings and types of contracts.

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

|    |   |            |  |
|----|---|------------|--|
| 41 | Introduction to contracts   | 27-05-2021 | Lectures interspersed with discussions |
| 42 | Types of contracts  | 28-05-2021 |  |
| 43 | Contract documents  | 29-05-2021 |  |
| 44 | Conditions of contracts   | 31-05-2021 |  |
| 45 | Valuation of building   | 01-06-2021 |  |
| 46 | General specifications of first class building                          | 02-06-2021 |  |
| 47 | General specifications of second class building                         | 03-06-2021 |  |
| 48 | General specification of third class building                           | 04-06-2021 |  |
| 49 | General specification of fourth class building                          | 05-06-2021 |  |
| 50 | Standard specifications of various items of works                       | 07-06-2021 |  |
| 51 | Specification for earthwork in foundation , lime concrete in foundation | 08-06-2021 |  |
| 52 | Specifications for standard bricks                                      | 09-06-2021 |  |
| 53 | Specifications for plastering , pointing                                | 10-06-2021 |  |
| 54 | Tutorial  | 11-06-2021 |  |



**UNIT – V DETAILED ESTIMATION OF BUILDINGS USING INDIVIDUAL WALL METHOD**

**CO5** The student will be able to do the Detailed Estimation of Buildings using individual wall method.

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

**TB::** Estimating and Costing' by G.S. Birdie.

|    |  |            |  |
|----|--|------------|--|
| 55 | Introduction to detailed estimation    | 12-06-2021 | Lectures interspersed with discussions |
| 56 | Detailed estimation of building        | 14-06-2021 |  |
| 57 | Methods of detailed estimation         | 15-06-2021 |  |
| 58 | Individual wall method                 | 16-06-2021 |  |
| 59 | Applications of individual wall method | 17-06-2021 |  |
| 60 | Problems on individual wall method     | 18-06-2021 |  |
| 61 | Problems on individual wall method     | 19-06-2021 |  |
| 62 | Problems on individual wall method     | 21-06-2021 |  |
| 63 | Problems on individual wall method     | 22-6-2021  |  |
| 64 | Problems on individual wall method     | 23-06-2021 |  |

**UNIT – VI DETAILED ESTIMATION OF BUILDINGS USING CENTERLINE METHOD**

**CO6:** The student will be able to do the Detailed Estimation of Buildings using centerline method.

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

**TB::** Estimating and Costing' by G.S. Birdie.

|    |                                 |            |  |
|----|---------------------------------|------------|--|
| 65 | Detailed estimation of building | 24-06-2021 | Lectures interspersed with discussions |
| 66 | Centre line method              | 25-06-2021 |  |
| 67 | Problems on centre line method  | 26-06-2021 |  |
| 68 | Problems on centre line method  | 28-06-2021 |  |
| 69 | Problems on centre line method  | 29-06-2021 |  |
| 70 | Problems on centre line method  | 30-06-2021 |  |
| 71 | Problems on centre line method  | 01-07-2021 |  |
| 72 | Tutorial on centre line method  | 02-07-2021 |  |
| 73 | Tutorial on centre line method  | 03-07-2021 |  |

G. S. Birdie  
3/4/2021

SIGNATURE OF FACULTY

T. Lakshmi  
3/4/21

SIGNATURE OF HOD

*(Handwritten signature in green ink)*  
PRINCIPAL

2020-21

**TENTATIVE LESSON PLAN: R1642011**

|  |                                |                           |
|--|--------------------------------|---------------------------|
| <b>Course Title: ESTIMATING, SPECIFICATIONS AND CONTRACTS (R1642011)</b> |                                |                           |
| <b>Section : Sec B</b>   | <b>Date : 3-4-2021</b>         | <b>Page No : 01 of 03</b> |
| <b>Revision No : 00</b>  | <b>Prepared By : G.Sahithi</b> | <b>Approved By : HOD</b>  |

**Tools: Black board**

|   | TOPIC   | DATE       | MODE OF DELIVERY                       |
|---|---|------------|--|
| <b>UNIT – I INTRODUCTION: GENERAL ITEMS OF WORK IN BUILDINGS</b>  |   |            |  |
| CO1: The student will be able to calculate quantity of different components of the buildings and know about types of estimates. |   |            |  |
| TB:: ‘Estimating and Costing’ by B.N. Dutta, UBS publishers, 2000.  |   |            |  |
| TB:: Estimating and Costing’ by G.S. Birdie.  |   |            |  |
| 1.  | <b>UNIT-I:Introduction:</b> about estimation , specifications                   | 06-04-2021 | Lectures interspersed with discussions |
| 2.  | Purpose of estimation   | 07-04-2021 |  |
| 3.  | General items of work excavation, filling, concrete in foundation               | 08-04-2021 |  |
| 4.  | General items of work soling ,dam proof course,masonry,arch masonry,lintels     | 09-04-2021 |  |
| 5.  | General items of work RCC,RB works,flooring,roofing,plastering,pointing,cornice | 10-04-2021 |  |
| 6.  | General items of works doors,windows,wood work,iron work                        | 12-04-2021 |  |
| 7.  | White washing,painting,lumpsum items  | 15-04-2021 |  |
| 8.  | Standard units , principles of working out quantities                           | 16-04-2021 |  |
| 9.  | Types of estimates  | 17-04-2021 |  |
| 10.   | Description of detailed estimates   | 19-04-2021 |  |
| 11.   | Description ob abstract estimates   | 20-04-2021 |  |
| 12.   | Methods of approximate estimates  | 22-04-2021 |  |
| <b>UNIT – II RATE ANALYSIS</b>  |   |            |  |
| CO2: The student will be able to find the cost of various building components.  |   |            |  |
| TB:: ‘Estimating and Costing’ by B.N. Dutta, UBS publishers, 2000.  |   |            |  |
| TB:: Estimating and Costing’ by G.S. Birdie.  |   |            |  |
| 13  | Introduction to rate analysis   | 23-04-2021 | Lectures interspersed with discussions |
| 14  | Calculation of mazdoor required   | 24-04-2021 |  |
| 15  | Rate analysis problems on excavation for foundation                             | 26-04-2021 |  |
| 16  | Sand filling in plinth problems   | 27-04-2021 |  |
| 17  | Rate analysis for cement concrete   | 28-04-2021 |  |
| 18  | Rate analysis for lime concrete in foundation                                   | 29-04-2021 |  |
| 19  | Rate analysis for brick work with standard bricks                               | 30-04-2021 |  |
| 20  | Rate analysis for plastering and pointing                                       | 01-05-2021 | Lectures                               |

|    |   |            |                               |
|----|---|------------|-------------------------------|
| 21 | Rate analysis for cement concrete floor     | 03-05-2021 | interspersed with discussions |
| 22 | Rate analysis for painting , varnishing     | 04-05-2021 |                               |
| 23 | Rate analysis for mosaic floor finish       | 05-05-2021 |                               |
| 24 | Rate analysis for reinforcement , RCC works | 06-05-2021 |                               |
| 25 | Rate analysis for other works               | 07-05-2021 |                               |
| 26 | Tutorial                                    | 08-05-2021 |                               |

### UNIT-III: EARTHWORK FOR ROADS AND CANALS

**CO2:** The student will have knowledge of calculation of earthwork for roads and canals and bar bending schedules

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

**TB::** 'Estimating and Costing' by G.S. Birdie.

|    |  |            |  |
|----|--|------------|--|
| 27 | Introduction to earth work                         | 10-05-2021 | Lectures interspersed with discussions |
| 28 | Embankment, cutting definitions                    | 11-05-2021 |  |
| 29 | Reinforcement , bar bending concept                | 12-05-2021 |  |
| 30 | Bar requirement schedules                          | 13-05-2021 |  |
| 31 | Methods for earthwork for roads                    | 15-05-2021 |  |
| 32 | Problems on mid sectional area method              | 17-05-2021 |  |
| 33 | Problems on mean sectional area method             | 18-05-2021 |  |
| 34 | Problems on Prismoidal formula method              | 19-05-2021 |  |
| 35 | Problems on trapezoidal formula method             | 20-05-2021 |  |
| 36 | Problems on area of side slopes                    | 21-05-2021 |  |
| 37 | Problems on earthwork for canals                   | 22-05-2021 |  |
| 38 | Earthwork for canals based on Prismoidal formula   | 24-05-2021 |  |
| 39 | Problems on combinations of embankment and cutting | 25-05-2021 |  |
| 40 | Tutorial   | 26-05-2021 |  |

### UNIT – IV CONTRACTS

**CO4:** The student will know various specifications and components of buildings and types of contracts.

**TB::** 'Estimating and Costing' by B.N. Dutta, UBS publishers, 2000.

|    |   |            |  |
|----|---|------------|--|
| 41 | <b>Introduction to contracts</b>  | 27-05-2021 | Lectures interspersed with discussions |
| 42 | Types of contracts  | 28-05-2021 |  |
| 43 | Contract documents  | 29-05-2021 |  |
| 44 | Conditions of contracts   | 31-05-2021 |  |
| 45 | Valuation of building   | 01-06-2021 |  |
| 46 | General specifications of first class building                          | 02-06-2021 |  |
| 47 | General specifications of second class building                         | 03-06-2021 |  |
| 48 | General specification of third class building                           | 04-06-2021 |  |
| 49 | General specification of fourth class building                          | 05-06-2021 |  |
| 50 | Standard specifications of various items of works                       | 07-06-2021 |  |
| 51 | Specification for earthwork in foundation , lime concrete in foundation | 08-06-2021 |  |
| 52 | Specifications for standard bricks                                      | 09-06-2021 |  |
| 53 | Specifications for plastering , pointing                                | 10-06-2021 |  |
| 54 | Tutorial  | 11-06-2021 |  |

|    |                         |            |
|----|-------------------------|------------|
| 55 | Empirical formulae      | 12-06-2021 |
| 56 | Straight line formula – | 14-06-2021 |
| 57 | Prof. Perry's formula   | 15-06-2021 |
| 58 | Tutorial                | 16-06-2021 |

#### UNIT – IV DEFLECTION OF BEAMS

CO4 The student will be able to calculate the deflections in beams under various loading and support conditions.

**T1 Strength of Materials by S.S Bhavikatti,**

**T2 Strength of Materials by R.K Bansal, Lakshmi Publication**

|    |  |            |                                       |
|----|--|------------|---------------------------------------|
| 59 | Stresses under the combined action of direct loading     | 17-06-2021 | Lecture interspersed with discussions |
| 60 | B.M. Core of a section                                   | 18-06-2021 |                                       |
| 61 | determination of stresses in the case of chimneys        | 19-06-2021 |                                       |
| 62 | retaining walls  | 21-06-2021 |                                       |
| 63 | dams   | 22-6-2021  |                                       |
| 64 | conditions for stability                                 | 23-06-2021 |                                       |
| 65 | stresses due to direct loading                           | 24-06-2021 |                                       |
| 66 | B.M. about both axis                                     | 25-06-2021 |                                       |
| 67 | stresses due to direct loading and B.M. about both axis. | 26-06-2021 |                                       |
| 68 | Tutorial   | 28-06-2021 |                                       |

#### UNIT –V THIN AND THICK CYLINDERS

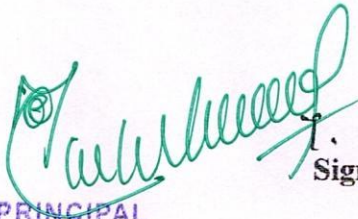
CO5 The student will be able to classify cylinders based on their thickness and to derive equations for measurement of stresses across the cross section when subjected to external pressure.

**T1 Strength of Materials by S.S Bhavikatti,**

**T2 Strength of Materials by R.K Bansal, Lakshmi Publication**

|    |   |            |                                       |
|----|---|------------|---------------------------------------|
| 69 | Introduction  | 29-06-2021 | Lecture interspersed with discussions |
| 70 | Centroidal principal axes of section  | 30-06-2021 |                                       |
| 71 | Graphical method for locating principal axes                                | 01-07-2021 |                                       |
| 72 | Moments of inertia referred to any set of rectangular axes                  | 02-07-2021 |                                       |
| 73 | Stresses in beams subjected to unsymmetrical bending                        | 03-07-2021 |                                       |
| 74 | Principal axes  | 05-07-2021 |                                       |
| 75 | Resolution of bending moment into two rectangular axes through the centroid | 06-07-2021 |                                       |
| 76 | Location of neutral axis  | 07-07-2021 |                                       |
| 77 | Deflection of beams under unsymmetrical bending.                            | 08-07-2021 |                                       |
| 78 | Shear Centre: Introduction  | 09-07-2021 |                                       |
| 79 | Shear center for symmetrical and unsymmetrical sections                     | 09-07-2021 |                                       |

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8/4/21

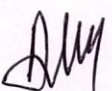
## TENTATIVE LESSON PLAN: R1621015

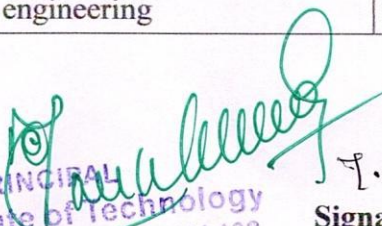
|   |                                    |                           |
|---|------------------------------------|---------------------------|
| <b>Course Title: CONSTRUCTION TECHNOLOGY AND MANAGEMENT</b> |                                    |                           |
| <b>Section : Sec A</b>                                      | <b>Date : 06-04-2021</b>           | <b>Page No : 01 of 02</b> |
| <b>Revision No : 00</b>                                     | <b>Prepared By : A.ANOOP KUMAR</b> | <b>Approved By : HOD</b>  |

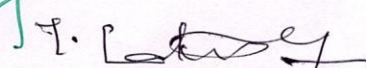
**Tools: Black board, PPTs**

| No. of Periods   | TOPIC   | Date                          | Mode of Delivery                      |
|--|---|-------------------------------|---------------------------------------|
| <b>UNIT –I</b>   |   |                               |                                       |
| TB: Project planning and control with PERT AND CPM   |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| CO1: To introduce students about construction project management including network drawing and monitoring. |   |                               |                                       |
| 1.   | Construction project management and its relevance | 06-04-2021                    | Lecture interspersed with discussions |
| 2.   | Qualities of a project manager                    | 07-04-2021                    |                                       |
| 3.   | Project planning                                  | 08-04-2021                    |                                       |
| 4.   | Coordination                                      | 09-04-2021                    |                                       |
| 5.   | scheduling  | 10-04-2021                    |                                       |
| 6.   | Monitoring  | 12-04-2021                    |                                       |
| 7.   | Bar charts  | 15-04-2021                    |                                       |
| 8.   | Milestone charts                                  | 16-04-2021                    |                                       |
| 9.   | Critical path method-applications                 | 17-04-2021<br>to 24-04-2021   |                                       |
| <b>UNIT –II</b>  |   |                               |                                       |
| TB : Project planning and control with PERT AND CPM  |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| CO2: To introduce students about project evaluation, project structure.                                    |   |                               |                                       |
| 10.  | Project evaluation and review technique           | 24-04-2021                    | Lecture interspersed with discussions |
| 11.  | Cost analysis                                     | 26-04-2021                    |                                       |
| 12.  | Updating  | 27-04-2021                    |                                       |
| 13.  | Crashing for optimum cost                         | 28-04-2021                    |                                       |
| 14.  | Crashing for optimum resources                    | 29-04-2021                    |                                       |
| 15.  | Allocation of resources                           | 30-04-2021<br>to<br>6-05-2021 |                                       |
| <b>UNIT –III</b>   |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| TB: Construction planning, equipment, and methods.   |   |                               |                                       |
| CO3: To introduce students about various construction equipment, their capacity calculation.               |   |                               |                                       |
| 16.  | Construction equipment                            | 08-05-2021                    | Lecture interspersed with discussions |
| 17.  | Economical conditions                             | 10-05-2021                    |                                       |
| 18.  | Earthquake equipment                              | 11-05-2021                    |                                       |
| 19.  | Trucks and handling equipment                     | 12-05-2021                    |                                       |
| 20.  | Rear dump trucks                                  | 15-05-2021                    |                                       |
| 21.  | Capacities of trucks and handling equipment       | 17-05-2021                    |                                       |
| 22.  | Calculation of truck production                   | 18-05-2021<br>to              |                                       |

|   |                                      |               |                                       |
|---|--------------------------------------|---------------|---------------------------------------|
|   |                                      | 23-05-2021    |                                       |
| 23.   | Compaction equipment                 | 24-05-2021    |                                       |
| 24.   | Types of compaction rollers          | 25-05-2021    |                                       |
| <b>UNIT – IV</b>  |                                      |               |                                       |
| TB: Construction engineering and management.  |                                      |               |                                       |
| TB: Construction planning, equipment, and methods   |                                      |               |                                       |
| CO4: To introduce students about various earthwork equipment.   |                                      |               |                                       |
| 25.   | Hoisting and Earthwork Equipment     | 29-05-2021    | Lecture interspersed with discussions |
| 26.   | Hoists                               | 31-05-2021    |                                       |
| 27.   | Cranes                               | 01-06-2021    |                                       |
| 28.   | Tractors                             | 02-06-2021    |                                       |
| 29.   | Bulldozers                           | 03-06-2021    |                                       |
| 30.   | Graders                              | 04-06-2021    |                                       |
| 31.   | Scrapers                             | 05-06-2021    |                                       |
| 32.   | Draglines                            | 07-06-2021    |                                       |
| 33.   | Clamshell Buckets.                   | 08-06-2021    |                                       |
| <b>UNIT – V</b>   |                                      |               |                                       |
| TB: Construction planning, equipment, and methods.  |                                      |               |                                       |
| CO5: To introduce students about concreting equipment, crushing of aggregates, mixing and placing of concrete, consolidating and finishing. |                                      |               |                                       |
| 34.   | Concreting Equipment                 | 10-06-2021    | Lecture interspersed with discussions |
| 35.   | Crushers                             | 11-06-2021    |                                       |
| 36.   | Jaw Crushers                         | 12-06-2021    |                                       |
| 37.   | Gyratory Crushers                    | 14-06-2021    |                                       |
| 38.   | Impact Crushers                      | 15-06-2021    |                                       |
| 39.   | Selection Of Crushing Equipment      | 16-06-2021    |                                       |
| 40.   | Screening Of Aggregate               | 17-06-2021    |                                       |
| 41.   | Concrete Mixers                      | 18,19-06-2021 |                                       |
| 42.   | Mixing And Placing Of Concrete       | 21-06-2021    |                                       |
| 43.   | Consolidating And Finishing          | 22-06-2021    |                                       |
| <b>UNIT – VI</b>  |                                      |               |                                       |
| TB: Construction planning, equipment, and methods , IS:9000   |                                      |               |                                       |
| CO6: To introduce students about how to do earthwork, piling work and importance of safety measures.  |                                      |               |                                       |
| 44.   | Construction Methods                 | 23-06-2021    | Lecture interspersed with discussions |
| 45.   | Earthwork                            | 24-06-2021    |                                       |
| 46.   | Piling                               | 25-06-2021    |                                       |
| 47.   | Placing Of Concrete                  | 26-06-2021    |                                       |
| 48.   | Form Work                            | 28-06-2021    |                                       |
| 49.   | Fabrication And Erection             | 29-06-2021    |                                       |
| 50.   | Quality control & Safety engineering | 03-07-2021    |                                       |

  
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6/4/21

## TENTATIVE LESSON PLAN: R1621015

|   |                                    |                           |
|---|------------------------------------|---------------------------|
| <b>Course Title: CONSTRUCTION TECHNOLOGY AND MANAGEMENT</b> |                                    |                           |
| <b>Section : Sec B</b>                                      | <b>Date : 06-04-2021</b>           | <b>Page No : 01 of 02</b> |
| <b>Revision No : 00</b>                                     | <b>Prepared By : A.ANOOP KUMAR</b> | <b>Approved By : HOD</b>  |

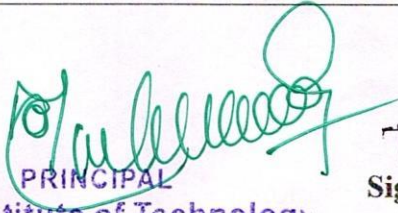
**Tools: Black board, PPTs**

| No. of Periods   | TOPIC   | Date                          | Mode of Delivery                      |
|--|---|-------------------------------|---------------------------------------|
| <b>UNIT –I</b>   |   |                               |                                       |
| TB: Project planning and control with PERT AND CPM   |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| CO1: To introduce students about construction project management including network drawing and monitoring. |   |                               |                                       |
| 1.   | Construction project management and its relevance | 06-04-2021                    | Lecture interspersed with discussions |
| 2.   | Qualities of a project manager                    | 07-04-2021                    |                                       |
| 3.   | Project planning                                  | 08-04-2021                    |                                       |
| 4.   | Coordination                                      | 09-04-2021                    |                                       |
| 5.   | scheduling  | 10-04-2021                    |                                       |
| 6.   | Monitoring  | 12-04-2021                    |                                       |
| 7.   | Bar charts  | 15-04-2021                    |                                       |
| 8.   | Milestone charts                                  | 16-04-2021                    |                                       |
| 9.   | Critical path method-applications                 | 17-04-2021<br>to 24-04-2021   |                                       |
| <b>UNIT –II</b>  |   |                               |                                       |
| TB : Project planning and control with PERT AND CPM  |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| CO2: To introduce students about project evaluation, project structure.                                    |   |                               |                                       |
| 10.  | Project evaluation and review technique           | 24-04-2021                    | Lecture interspersed with discussions |
| 11.  | Cost analysis                                     | 26-04-2021                    |                                       |
| 12.  | Updating  | 27-04-2021                    |                                       |
| 13.  | Crashing for optimum cost                         | 28-04-2021                    |                                       |
| 14.  | Crashing for optimum resources                    | 29-04-2021                    |                                       |
| 15.  | Allocation of resources                           | 30-04-2021<br>to<br>6-05-2021 |                                       |
| <b>UNIT –III</b>   |   |                               |                                       |
| TB: Construction engineering and management.   |   |                               |                                       |
| TB: Construction planning, equipment, and methods.   |   |                               |                                       |
| CO3: To introduce students about various construction equipment, their capacity calculation.               |   |                               |                                       |
| 16.  | Construction equipment                            | 08-05-2021                    | Lecture interspersed with discussions |
| 17.  | Economical conditions                             | 10-05-2021                    |                                       |
| 18.  | Earthquake equipment                              | 11-05-2021                    |                                       |
| 19.  | Trucks and handling equipment                     | 12-05-2021                    |                                       |
| 20.  | Rear dump trucks                                  | 15-05-2021                    |                                       |
| 21.  | Capacities of trucks and handling equipment       | 17-05-2021                    |                                       |
| 22.  | Calculation of truck production                   | 18-05-2021<br>to              |                                       |

|   |                                      |               |                                       |
|---|--------------------------------------|---------------|---------------------------------------|
|   |                                      | 23-05-2021    |                                       |
| 23.   | Compaction equipment                 | 24-05-2021    |                                       |
| 24.   | Types of compaction rollers          | 25-05-2021    |                                       |
| <b>UNIT – IV</b>  |                                      |               |                                       |
| TB: Construction engineering and management.  |                                      |               |                                       |
| TB: Construction planning, equipment, and methods   |                                      |               |                                       |
| CO4: To introduce students about various earthwork equipment.   |                                      |               |                                       |
| 25.   | Hoisting and Earthwork Equipment     | 29-05-2021    | Lecture interspersed with discussions |
| 26.   | Hoists                               | 31-05-2021    |                                       |
| 27.   | Cranes                               | 01-06-2021    |                                       |
| 28.   | Tractors                             | 02-06-2021    |                                       |
| 29.   | Bulldozers                           | 03-06-2021    |                                       |
| 30.   | Graders                              | 04-06-2021    |                                       |
| 31.   | Scrapers                             | 05-06-2021    |                                       |
| 32.   | Draglines                            | 07-06-2021    |                                       |
| 33.   | Clamshell Buckets.                   | 08-06-2021    |                                       |
| <b>UNIT – V</b>   |                                      |               |                                       |
| TB: Construction planning, equipment, and methods.  |                                      |               |                                       |
| CO5: To introduce students about concreting equipment, crushing of aggregates, mixing and placing of concrete, consolidating and finishing. |                                      |               |                                       |
| 34.   | Concreting Equipment                 | 10-06-2021    | Lecture interspersed with discussions |
| 35.   | Crushers                             | 11-06-2021    |                                       |
| 36.   | Jaw Crushers                         | 12-06-2021    |                                       |
| 37.   | Gyratory Crushers                    | 14-06-2021    |                                       |
| 38.   | Impact Crushers                      | 15-06-2021    |                                       |
| 39.   | Selection Of Crushing Equipment      | 16-06-2021    |                                       |
| 40.   | Screening Of Aggregate               | 17-06-2021    |                                       |
| 41.   | Concrete Mixers                      | 18,19-06-2021 |                                       |
| 42.   | Mixing And Placing Of Concrete       | 21-06-2021    |                                       |
| 43.   | Consolidating And Finishing          | 22-06-2021    |                                       |
| <b>UNIT – VI</b>  |                                      |               |                                       |
| TB: Construction planning, equipment, and methods , IS:9000   |                                      |               |                                       |
| CO6: To introduce students about how to do earthwork, piling work and importance of safety measures.  |                                      |               |                                       |
| 44.   | Construction Methods                 | 23-06-2021    | Lecture interspersed with discussions |
| 45.   | Earthwork                            | 24-06-2021    |                                       |
| 46.   | Piling                               | 25-06-2021    |                                       |
| 47.   | Placing Of Concrete                  | 26-06-2021    |                                       |
| 48.   | Form Work                            | 28-06-2021    |                                       |
| 49.   | Fabrication And Erection             | 29-06-2021    |                                       |
| 50.   | Quality control & Safety engineering | 03-07-2021    |                                       |

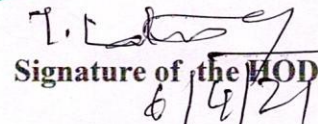


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6/9/21



### TENTATIVE LESSON PLAN: CE

|  |                              |                           |
|--|------------------------------|---------------------------|
| <b>Course Title: PRESTRESSED CONCRETE (R1642013)</b> |                              |                           |
| <b>Section : Sec A</b>                               | <b>Date : 6/4/2021</b>       | <b>Page No : 01 of 02</b> |
| <b>Revision No : 00</b>                              | <b>Prepared By : K.KIRAN</b> | <b>Approved By : HOD</b>  |

Tools : Black board, PPTs, Model

| No. of Periods  | TOPIC  | Tentative Date | Implemented Date                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT-I Basic concepts of Prestressing</b><br><b>CO1: Understand the concepts of prestressing</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b>                          |  |                |                                       |
| 1   | Advantages and Applications of Prestressed Concretes                                 | 06-04-2021     | Lecture interspersed with discussions |
| 2   | High Strength Concrete   | 07-04-2021     |                                       |
| 3   | Permissible Stresses   | 08-04-2021     |                                       |
| 4   | Shrinkage  | 09-04-2021     |                                       |
| 5   | Creep  | 10-04-2021     |                                       |
| 6   | Deformation Characteristics  | 12-04-2021     |                                       |
| 7   | High strength Steel- Types   | 15-04-2021     |                                       |
| 8   | Strength   | 20-04-2021     |                                       |
| 9   | Permissible Stresses   | 22-04-2021     |                                       |
| 10  | Relaxation of Stress   | 23-04-2021     |                                       |
| 11  | Cover Requirements   | 27-04-2021     |                                       |
| <b>UNIT-II Prestressing Systems</b><br><b>CO2: Understand the different methods of prestressing</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b>                          |  |                |                                       |
| 12  | Introduction   | 28-04-2021     | Lecture interspersed with discussions |
| 13  | Tensioning devices   | 29-04-2021     |                                       |
| 14  | Pre-tensioning Systems   | 03-05-2021     |                                       |
| 15  | Post tensioning Systems  | 04-05-2021     |                                       |
| 16  | Basic Assumptions in Analysis of prestress and design                                | 06-05-2021     |                                       |
| 17  | Analysis of prestress  | 08-05-2021     |                                       |
| 18  | Resultant Stresses at a section  | 10-05-2021     |                                       |
| 19  | pressure line  | 11-05-2021     |                                       |
| 20  | Concepts of load balancing   | 12-05-2021     |                                       |
| 21  | Stresses in Tendons  | 13-05-2021     |                                       |
| 22  | Cracking moment  | 15-05-2021     |                                       |
| <b>UNIT-III Losses of Pre-stressing</b><br><b>CO3: Estimate effective prestress including the short and long term losses</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b> |  |                |                                       |
| 23  | Loss of Pre-stress in pre-tensioned and post tensioned members due to various causes | 18-05-2021     | Lecture interspersed with discussions |
| 24  | Elastic shortening of concrete   | 19-05-2021     |                                       |
| 25  | shrinkage of concrete  | 21-05-2021     |                                       |
| 26  | creep of concrete  | 22-05-2021     |                                       |
| 27  | Relaxation stress in steel   | 24-05-2021     |                                       |
| 28  | slip in anchorage  | 25-05-2021     |                                       |

|  |   |            |                                       |
|--|---|------------|---------------------------------------|
| 29   | Differential shrinkage                              | 28-05-2021 |                                       |
| 30   | bending of members and frictional losses            | 29-05-2021 |                                       |
| 31   | Total losses allowed for design                     | 31-05-2021 |                                       |
| <b>UNIT-IV Design for Flexural resistance</b>                                    |   |            |                                       |
| <b>CO4: Analyze and design prestressed concrete beams under flexure</b>          |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham</b>                                 |   |            |                                       |
| 32   | Types of flexural failure                           | 02-06-2021 | Lecture interspersed with discussions |
| 33   | Code procedures                                     | 04-06-2021 |                                       |
| 34   | Design of sections for flexure                      | 07-06-2021 |                                       |
| 35   | Control of deflections                              | 09-06-2021 |                                       |
| 36   | Factors influencing Deflection                      | 11-06-2021 |                                       |
| 37   | Prediction of short term and long term deflections. | 12-06-2021 |                                       |
| <b>UNIT – V UNIT-V Design for Shear and Torsion</b>                              |   |            |                                       |
| <b>CO5: Analyze and design prestressed concrete beams under shear</b>            |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham .</b>                               |   |            |                                       |
| 38   | Shear and Principal Stresses                        | 16-06-2021 | Lecture interspersed with discussions |
| 39   | Design of Shear reinforcements                      | 17-06-2021 |                                       |
| 40   | Codal Provisions                                    | 18-06-2021 |                                       |
| 41   | Design for Torsion                                  | 19-06-2021 |                                       |
| 42   | Design for Combined bending, shear and torsion      | 21-06-2021 |                                       |
| <b>UNIT-VI Transfer of Prestress in pre tensioned members</b>                    |   |            |                                       |
| <b>CO6: Understand the relevant IS Codal provisions for prestressed concrete</b> |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham</b>                                 |   |            |                                       |
| 43   | Transmission length                                 | 26-06-2021 | Lecture interspersed with discussions |
| 44   | Bond Stresses                                       | 28-06-2021 |                                       |
| 45   | end zone reinforcement                              | 29-06-2021 |                                       |
| 46   | Codal provisions                                    | 30-06-2021 |                                       |
| 47   | Anchorage zone Stresses in Post Tensioned members   | 01-07-2021 |                                       |
| 48   | Stress distribution in end block                    | 02-07-2021 |                                       |
| 49   | Anchorage Zone reinforcement                        | 03-07-2021 |                                       |

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6/4/21

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## TENTATIVE LESSON PLAN: CE

|  |                              |                           |
|--|------------------------------|---------------------------|
| <b>Course Title: PRESTRESSED CONCRETE (R1642013)</b> |                              |                           |
| <b>Section : Sec B</b>                               | <b>Date : 6/4/2021</b>       | <b>Page No : 01 of 02</b> |
| <b>Revision No : 00</b>                              | <b>Prepared By : K.KIRAN</b> | <b>Approved By : HOD</b>  |

Tools : Black board, PPTs, Model

| No. of Periods  | TOPIC  | Tentative Date | Implemented Date                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT-I Basic concepts of Prestressing</b><br><b>CO1: Understand the concepts of prestressing</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b>                          |  |                |                                       |
| 1   | Advantages and Applications of Prestressed Concretes                                 | 06-04-2021     | Lecture interspersed with discussions |
| 2   | High Strength Concrete   | 07-04-2021     |                                       |
| 3   | Permissible Stresses   | 08-04-2021     |                                       |
| 4   | Shrinkage  | 09-04-2021     |                                       |
| 5   | Creep  | 10-04-2021     |                                       |
| 6   | Deformation Characteristics  | 12-04-2021     |                                       |
| 7   | High strength Steel- Types   | 15-04-2021     |                                       |
| 8   | Strength   | 20-04-2021     |                                       |
| 9   | Permissible Stresses   | 22-04-2021     |                                       |
| 10  | Relaxation of Stress   | 23-04-2021     |                                       |
| 11  | Cover Requirements   | 27-04-2021     |                                       |
| <b>UNIT-II Prestressing Systems</b><br><b>CO2: Understand the different methods of prestressing</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b>                          |  |                |                                       |
| 12  | Introduction   | 28-04-2021     | Lecture interspersed with discussions |
| 13  | Tensioning devices   | 29-04-2021     |                                       |
| 14  | Pre-tensioning Systems   | 03-05-2021     |                                       |
| 15  | Post tensioning Systems  | 04-05-2021     |                                       |
| 16  | Basic Assumptions in Analysis of prestress and design                                | 06-05-2021     |                                       |
| 17  | Analysis of prestress  | 08-05-2021     |                                       |
| 18  | Resultant Stresses at a section  | 10-05-2021     |                                       |
| 19  | pressure line  | 11-05-2021     |                                       |
| 20  | Concepts of load balancing   | 12-05-2021     |                                       |
| 21  | Stresses in Tendons  | 13-05-2021     |                                       |
| 22  | Cracking moment  | 15-05-2021     |                                       |
| <b>UNIT-III Losses of Pre-stressing</b><br><b>CO3: Estimate effective prestress including the short and long term losses</b><br><b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b><br><b>TB2::Prestressed Concrete, S. Ramamrutham</b> |  |                |                                       |
| 23  | Loss of Pre-stress in pre-tensioned and post tensioned members due to various causes | 18-05-2021     | Lecture interspersed with discussions |
| 24  | Elastic shortening of concrete   | 19-05-2021     |                                       |
| 25  | shrinkage of concrete  | 21-05-2021     |                                       |
| 26  | creep of concrete  | 22-05-2021     |                                       |
| 27  | Relaxation stress in steel   | 24-05-2021     |                                       |
| 28  | slip in anchorage  | 25-05-2021     |                                       |

|  |   |            |                                       |
|--|---|------------|---------------------------------------|
| 29   | Differential shrinkage                              | 28-05-2021 |                                       |
| 30   | bending of members and frictional losses            | 29-05-2021 |                                       |
| 31   | Total losses allowed for design                     | 31-05-2021 |                                       |
| <b>UNIT-IV Design for Flexural resistance</b>                                    |   |            |                                       |
| <b>CO4: Analyze and design prestressed concrete beams under flexure</b>          |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham</b>                                 |   |            |                                       |
| 32   | Types of flexural failure                           | 02-06-2021 | Lecture interspersed with discussions |
| 33   | Code procedures                                     | 04-06-2021 |                                       |
| 34   | Design of sections for flexure                      | 07-06-2021 |                                       |
| 35   | Control of deflections                              | 09-06-2021 |                                       |
| 36   | Factors influencing Deflection                      | 11-06-2021 |                                       |
| 37   | Prediction of short term and long term deflections. | 12-06-2021 |                                       |
| <b>UNIT – V UNIT-V Design for Shear and Torsion</b>                              |   |            |                                       |
| <b>CO5: Analyze and design prestressed concrete beams under shear</b>            |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham .</b>                               |   |            |                                       |
| 38   | Shear and Principal Stresses                        | 16-06-2021 | Lecture interspersed with discussions |
| 39   | Design of Shear reinforcements                      | 17-06-2021 |                                       |
| 40   | Codal Provisions                                    | 18-06-2021 |                                       |
| 41   | Design for Torsion                                  | 19-06-2021 |                                       |
| 42   | Design for Combined bending, shear and torsion      | 21-06-2021 |                                       |
| <b>UNIT-VI Transfer of Prestress in pre tensioned members</b>                    |   |            |                                       |
| <b>CO6: Understand the relevant IS Codal provisions for prestressed concrete</b> |   |            |                                       |
| <b>TB1::Prestressed Concrete, N. Krishna Raju, Tata McGraw hill</b>              |   |            |                                       |
| <b>TB2::Prestressed Concrete, S. Ramamrutham</b>                                 |   |            |                                       |
| 43   | Transmission length                                 | 26-06-2021 | Lecture interspersed with discussions |
| 44   | Bond Stresses                                       | 28-06-2021 |                                       |
| 45   | end zone reinforcement                              | 29-06-2021 |                                       |
| 46   | Codal provisions                                    | 30-06-2021 |                                       |
| 47   | Anchorage zone Stresses in Post Tensioned members   | 01-07-2021 |                                       |
| 48   | Stress distribution in end block                    | 02-07-2021 |                                       |
| 49   | Anchorage Zone reinforcement                        | 03-07-2021 |                                       |

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*T. Lakshmi*  
Signature of the HOD  
6/4/21

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## TENTATIVE LESSON PLAN: CIVIL R164201C

### SOLID & HAZARDOUS WASTE MANAGEMENT

|   |   |                          |
|---|---|--------------------------|
| <b>Course Title: SOLID &amp; HAZARDOUS WASTE MANAGEMENT (CIVIL)</b> |   |                          |
| <b>Section: Sec A</b>   | <b>Date: 06-04-2021</b>                 | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b>  | <b>Prepared By: J PURNA CHANDRA RAO</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

| No. of Periods  | TOPIC  | Tentative date | Mode of Delivery                      |
|---|--|----------------|---------------------------------------|
| <b>UNIT 1: INTRODUCTION TO SWM</b>  |  |                |                                       |
| <b>CO1: UNDERSTAND THE IMPACT OF SOLID WASTE ON THE HEALTH OF THE LIVING BEINGS</b> |  |                |                                       |
| <b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>                      |  |                |                                       |
| 1   | <b>Introduction to SWM</b>                             | 06-04-2021     | Lecture interspersed with discussions |
| 2   | Goals and Objectives of Solid Waste Management         | 07-04-2021     |                                       |
| 3   | Classification of Solid Waste                          | 08-04-2021     |                                       |
| 4   | Factors influencing generation of SW                   | 09-04-2021     |                                       |
| 5   | Sampling and Characterization of Wastes                | 12-04-2021     |                                       |
| 6   | Characterization of Waste                              | 15-04-2021     |                                       |
| 7   | Future changes in waste composition of SW              | 16-04-2021     |                                       |
| 8   | Major legislation and monitoring responsibilities      | 20-04-2021     |                                       |
| 9   | ISWM terms—WTE, ULB                                    | 22-04-2021     |                                       |
| 10  | TLV, Measurement of NPK and calorific value            | 23-04-2021     |                                       |
| 11  | Tutorial-I   | 26-04-2021     |                                       |
| <b>UNIT 2: BASIC ELEMENTS IN SWM</b>  |  |                |                                       |
| <b>CO2: DESIGN THE COLLECTION SYSTEMS OF SOLID WASTE OF A TOWN</b>                  |  |                |                                       |
| <b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>                      |  |                |                                       |
| 12  | <b>Basic elements in SWM</b>                           | 27-04-2021     | Lecture interspersed with discussions |
| 13  | Functional elements and their interrelationship in SWM | 28-04-2021     |                                       |
| 14  | Principles of SWM                                      | 29-04-2021     |                                       |
| 15  | Onsite handling of wastes                              | 30-04-2021     |                                       |
| 16  | Storage and Processing of wastes at site               | 03-05-2021     |                                       |
| 17  | Types of containers and Collection of solid wastes     | 04-05-2021     |                                       |
| 18  | Types of waste Collection systems                      | 05-05-2021     |                                       |
| 19  | Methods of waste collection-Hauling container system   | 06-05-2021     |                                       |
| 20  | Stationary container system                            | 07-05-2021     |                                       |
| 21  | Frequency of collection                                | 10-05-2021     |                                       |
| 22  | Analysis of collection system                          | 11-05-2021     |                                       |
| 23  | Optimization of collection routes                      | 12-05-2021     |                                       |
| 24  | Alternative techniques for collection system           | 13-05-2021     |                                       |

|  |   |            |  |
|--|---|------------|--|
| 25   | Tutorial-II   | 17-05-2021 |  |
| <b>UNIT 3: TRANSFER, TRANSPORT AND TRANSFORMATION OF WASTES</b><br><b>CO3: ACQUIRE THE PRINCIPLES OF TRANSFORMATION OF MUNICIPAL SOLID WASTE TO ENERGY</b><br><b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b> |   |            |  |
| 26   | <b>Transfer, Transport and Transformation of wastes</b> | 18-05-2021 | Lecture interspersed<br>with discussions |
| 27   | Need for Transfer Operations                            | 19-05-2021 |  |
| 28   | Compaction of solid waste                               | 20-05-2021 |  |
| 29   | Means and methods of transporting wastes                | 21-05-2021 |  |
| 30   | Transfer station and types                              | 24-05-2021 |  |
| 31   | Design requirements of TS                               | 25-05-2021 |  |
| 32   | Separation of wastes- Unit operations                   | 26-05-2021 |  |
| 33   | Transformation of wastes                                | 27-05-2021 |  |
| 34   | Shredding of waste materials and sorting                | 28-05-2021 |  |
| 35   | Recovery of materials from wastes- RRP- Tutorial        | 31-05-2021 |  |
| <b>UNIT 4: PROCESSING AND TREATMENT OF WASTES</b><br><b>CO4: CHARACTERISE THE SOLID WASTE AND DESIGN A COMPOSTING FACILITY</b><br><b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>                             |   |            |  |
| 36   | <b>Processing and Treatment of Wastes</b>               | 01-06-2021 | Lecture interspersed<br>with discussions |
| 37   | Processing of Solid Wastes                              | 02-06-2021 |  |
| 38   | Waste Transformation through combustion and composting  | 03-06-2021 |  |
| 39   | Types of composting- yard wastes                        | 04-06-2021 |  |
| 40   | Windrows, warming composting and vermi-composting       | 05-06-2021 |  |
| 41   | Anaerobic methods of material recovery                  | 07-06-2021 |  |
| 42   | Treatment of wastes                                     | 08-06-2021 |  |
| 43   | Energy recovery   | 09-06-2021 |  |
| 44   | Biogas generation                                       | 10-06-2021 |  |
| 45   | Incineration & Cleaning                                 | 11-06-2021 |  |
| 46   | Gasification & pyrolysis- Tutorial-IV                   | 12-06-2021 |  |
| <b>UNIT 5: DISPOSAL OF SOLID WASTES</b><br><b>CO5: KNOW THE CRITERIA FOR SELECTION OF LANDFILL AND DESIGNING</b><br><b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>   |   |            |  |
| 47   | <b>Disposal of Solid Wastes</b>                         | 14-06-2021 | Lecture interspersed<br>with discussions |
| 48   | Methods of Disposal                                     | 15-06-2021 |  |
| 49   | Site selection for Landfill                             | 16-06-2021 |  |
| 50   | Types of landfill                                       | 17-06-2021 |  |
| 51   | Design of Landfill                                      | 18-06-2021 |  |
| 52   | Operations involved at landfill site                    | 19-06-2021 |  |
| 53   | Drainage and Leachate collection systems                | 21-06-2021 |  |
| 54   | Designated waste Landfill remediation                   | 22-06-2021 |  |
| 55   | Case Studies  | 23-06-2021 |  |
| 56   | Case Studies-Tutorial-V                                 | 24-06-2021 |  |

**UNIT 6: HAZARDOUS WASTE MANAGEMENT**

**CO6: KNOW THE METHOD OF TREATMENT AND DISPOSAL OF HAZARDOUS WASTES.**

**TB: SOLID & HAZARDOUS WASTE MANAGEMENT BY PM CHERRY**

|    |  |            |  |
|----|--|------------|--|
| 57 | Sources of HW- characteristics, Collection of HW | 25-06-2021 | Lecture interspersed<br>with discussions |
| 58 | Transport and Treatment of HW                    | 28-06-2021 |  |
| 59 | Disposal methods of HW                           | 29-06-2021 |  |
| 60 | Biomedical Waste Management                      | 30-06-2021 |  |
| 61 | Nuclear & E-Waste Management                     | 01-07-2021 |  |
| 62 | Env. Laws related to HW                          | 02-07-2021 |  |
| 63 | Case Studies - Tutorial-VI                       | 03-07-2021 |  |

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# TENTATIVE LESSON PLAN: CIVIL R164201C

## SOLID & HAZARDOUS WASTE MANAGEMENT

|   |   |                          |
|---|---|--------------------------|
| <b>Course Title: SOLID &amp; HAZARDOUS WASTE MANAGEMENT (CIVIL)</b> |   |                          |
| <b>Section: Sec B</b>   | <b>Date: 06-04-2021</b>                 | <b>Page No: 01 of 03</b> |
| <b>Revision No: 00</b>  | <b>Prepared By: J PURNA CHANDRA RAO</b> | <b>Approved By: HOD</b>  |

**Tools: Black board, power point presentations**

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| 3   | Classification of Solid Waste                          | 08-04-2021     |                                       |
| 4   | Factors influencing generation of SW                   | 09-04-2021     |                                       |
| 5   | Sampling and Characterization of Wastes                | 12-04-2021     |                                       |
| 6   | Characterization of Waste                              | 15-04-2021     |                                       |
| 7   | Future changes in waste composition of SW              | 16-04-2021     |                                       |
| 8   | Major legislation and monitoring responsibilities      | 20-04-2021     |                                       |
| 9   | ISWM terms—WTE, ULB                                    | 22-04-2021     |                                       |
| 10  | TLV, Measurement of NPK and calorific value            | 23-04-2021     |                                       |
| 11  | Tutorial-I   | 26-04-2021     |                                       |
| <b>UNIT 2: BASIC ELEMENTS IN SWM</b>  |  |                |                                       |
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| <b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>                      |  |                |                                       |
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|  |   |            |  |
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| 25   | Tutorial-II   | 17-05-2021 |  |
| <b>UNIT 3: TRANSFER, TRANSPORT AND TRANSFORMATION OF WASTES</b><br><b>CO3: ACQUIRE THE PRINCIPLES OF TRANSFORMATION OF MUNICIPAL SOLID WASTE TO ENERGY</b><br><b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b> |   |            |  |
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| 39   | Types of composting- yard wastes                        | 04-06-2021 |  |
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| 41   | Anaerobic methods of material recovery                  | 07-06-2021 |  |
| 42   | Treatment of wastes                                     | 08-06-2021 |  |
| 43   | Energy recovery   | 09-06-2021 |  |
| 44   | Biogas generation                                       | 10-06-2021 |  |
| 45   | Incineration & Cleaning                                 | 11-06-2021 |  |
| 46   | Gasification & pyrolysis- Tutorial-IV                   | 12-06-2021 |  |
| <b>UNIT 5: DISPOSAL OF SOLID WASTES</b><br><b>CO5: KNOW THE CRITERIA FOR SELECTION OF LANDFILL AND DESIGNING</b><br><b>TB: SOLID &amp; HAZARDOUS WASTE MANAGEMENT BY PM CHERRY</b>   |   |            |  |
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| 49   | Site selection for Landfill                             | 16-06-2021 |  |
| 50   | Types of landfill                                       | 17-06-2021 |  |
| 51   | Design of Landfill                                      | 18-06-2021 |  |
| 52   | Operations involved at landfill site                    | 19-06-2021 |  |
| 53   | Drainage and Leachate collection systems                | 21-06-2021 |  |
| 54   | Designated waste Landfill remediation                   | 22-06-2021 |  |
| 55   | Case Studies  | 23-06-2021 |  |
| 56   | Case Studies-Tutorial-V                                 | 24-06-2021 |  |

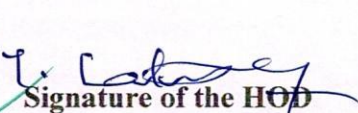
**UNIT 6: HAZARDOUS WASTE MANAGEMENT**

**CO6: KNOW THE METHOD OF TREATMENT AND DISPOSAL OF HAZARDOUS WASTES.**

**TB: SOLID & HAZARDOUS WASTE MANAGEMENT BY PM CHERRY**

|    |  |            |  |
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| 60 | Biomedical Waste Management                      | 30-06-2021 |  |
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