



COLLEGE OF TECHNOLOGY AND ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING
4 YEAR BE I SEMESTER SESSION 2015-16

1. Course Code : **CE 411**
2. Course Title : **BRIDGE ENGINEERING**
3. Credit : 4(3+1)
4. Theory Lecture Outlines :

1.	Introduction: Type of bridges & classification of road & railways bridges
2.	Type of bridges & classification of road & railways bridges
3.	Economical span. IRC loadings for bridges
4.	Economical span. IRC loadings for bridges
5.	wind load & Earthquake forces
6.	Various load distribution theories
7.	Investigation for Bridges: Site selection and preliminary data.
8.	Site selection and preliminary data
9.	Maintenance: Maintenance of bridges
10.	Maintenance: Maintenance of bridges
11.	Reinforced Concrete Culverts & Bridges
12.	Reinforced Concrete Culverts & Bridges
13.	Reinforced Concrete Culverts & Bridges
14.	Design of reinforced concrete slab culvert
15.	Design of reinforced concrete slab culvert
16.	T-beam bridges (Courbons & Hendry-Jaegar methods) for IRC Loading
17.	T-beam bridges (Courbons & Hendry-Jaegar methods) for IRC Loading
18.	T-beam bridges (Courbons & Hendry-Jaegar methods) for IRC Loading
19.	Use of Pigeaud's coefficients
20.	Use of Pigeaud's coefficients
21.	Use of Pigeaud's coefficients
22.	Substructure: Principle of design of substructure elements
23.	Substructure: Principle of design of substructure elements
24.	Substructure: Principle of design of substructure elements
25.	Design of pier, abutment and wing wall.

26.	Design of pier, abutment and wing wall.
27.	Design of pier, abutment and wing wall.
28.	Design of pier, abutment and wing wall.
29.	Design of Foundation: Introduction of Well foundation
30.	Design of Foundation: Introduction of Well foundation
31.	Design of Foundation: Introduction of Well foundation
32.	Design of Foundation: Introduction of Well foundation
33.	Design of Foundation: Introduction of Well foundation
34.	Bearing: Bearings for slab bridges and girder bridges
35.	Bearing: Bearings for slab bridges and girder bridges
36.	Bearing: Bearings for slab bridges and girder bridges
37.	Elastomeric bearings, design concepts as per IRC 83 (Part II).
38.	Elastomeric bearings, design concepts as per IRC 83 (Part II).
39.	Joints: Expansion joints.
40.	Joints: Expansion joints.
41.	Joints: Expansion joints.
42.	Numericals
43.	Numericals
44.	Revision
45.	Revision

Suggested Books & References

1. Victor Johnson, 'Bridge Engineering'.
2. Relevant IRC codes

(Dr. B.S. Singvi)
Prof.& Head (Civil Engg)