GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2

Civil Engineering (Computer Aided Structural Analysis & Design)

Subject Name Analysis And Design of Bridges (Major Elective – II)

Sr. No	Course content
1.	Classification, investigations and planning, choice of type of bridges
2.	I.R.C. and other international live load specifications for road bridges, Various forces acting on bridges
3.	Load distribution theories: Courbon's Method, Hendry Jaeger Method, Grillage analogy, Pigeaud's curves
4.	Superstructure: General design considerations, analysis and design of reinforced concrete slab culverts, tee beam and slab bridges, Design principles of prestressed bridges, continuous bridges, box girder bridges, balanced cantilever bridges.
5.	Substructure : Various parts of substructures, Various types of substructures, Loads acting on substructures, Design of pier and pier cap, Design of piles, Design of wells and sinking of wells

Reference Books :

1. Raina V.K. "Concrete Bridge Practice" , Tata McGraw Hill Publishing Company, New Delhi, 1991.
2. Krishnaraju, N., "Design of Bridges" Oxford and IBH Publishing Co., Bombay, Calcutta, New Delhi, 1988
3. Bakht, B. and Jaegar, L.G., "Bridge Analysis simplified", McGraw Hill, 1985.
4. Ponnuswamy, S., "Bridge Engineering", Tata McGraw Hill, 1989
5. Derrick Beckett, "An introduction to Structural Design of Concrete Bridges", Surrey University Press,
   Henley Thomes, Oxford Shire, 1973.
6. Taylor, F.W., Thomson, S.E., and Smulski E., "Reinforced Concrete Bridges", John Wiley and Sons,
   New York, 1955.
7. Edwin H.Gaylord Jr., Charles N.Gaylord, James, E.,Stallmeyer "Design of Steel Structures" McGrew Hill International Editions, 1992.