

CE/BOS/CE 435/0513

K L UNIVERSITY

BRIDGE ENGINEERING (11 – CE 435)

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Pre – requisite: 11-CE204, 11-CE301, 11-CE305

SYLLABUS:

Concrete Bridge: Various types of bridges; I.R.C. specifications for road bridges. **Culverts:** Design of R.C. slab culvert. **T-Beam Bridge:** Pigeaud's method for computation of slab moments; courbon's method for computation of moments in girders; Design of simply supported T-beam bridge. **Sub Structure for Bridges:** Pier and abutment caps; Materials for piers and abutments' Design of pier; Design of abutment; Backfill behind abutment; approach slab. **Bearings for Bridges:** Importance of bearings; bearings for slab bridge; bearings for girder bridges; Expansion bearings; Fixed bearings; Design of elastomeric pad bearing. **Foundations For Bridges:** scour at abutments and piers; Grip length; Types of foundations; Design of well foundation. **Cable Supported Bridge:** Different types of cable supported bridge, difference between suspension bridge and cable stayed bridge. Different components and factors considered for design of a) suspension bridge, b) cable stayed bridge.

TEXT BOOKS:

1. Essentials of Bridge Engineering by Dr. Johnson Victor; Oxford & IBH publishing Co. Pvt. Ltd.
2. Cable supported bridges, concepts and design by N J Gimsing. John Willey and Sons
3. R. Rajagopalan, "Bridge Superstructure", Tata McGraw- Hills Publishing Company Limited.

REFERENCE BOOKS:

1. Design of Bridge Structures by T. R Jagadeesh, M.A Jayaram, Prentice Hall of India Pvt. Ltd.