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| CE129  Design of Steel Structure / Design of Concrete str | **L-T-P**  **3-0-0**  **3 credit** | |
| Basic Material Properties & Design Concept: Material property of steel, Ductility, Behaviour of steel in cyclic loading, Different structural steel section used in India and their use. Different types of steel structural systems. Steel cable structural system, Structural configuration of tall steel structures Innovative use of structural steel, Hollow Tubular steel sections, Corrosion and fire resistance property of steel.  **4 Lectures**  Rivet & Weld: Rivet and Welded connections. Property and the merits and demerits of Rivet and Weld. Different types of joints, Failure of Rivet and Weld. Rivet value. Bracket connection with eccentricity with Rivet and Weld. Numerical Problems  **4 Lectures**  Design of Beam: Design Fundamental of Beam, Laterally supported and laterally unsupported beam, IS code provisions, Built-up-beams. Numerical Problems  **4 Lectures**  Design of Truss: Design fundamental of compression and tension member with angles. Design of simple trusses.Numerical Problems.  **4 Lectures**  Design of Column: Design Fundamental of Axially and eccentrically loaded column, IS code provisions, Built-up-Columns, Lacing and battened column. Column Splice, Numerical Problems  4 Lectures  Design of Connection: Framed connection; unstiffened and stiffened seated connections for the connection for beam-beam and beam-column-beam, Numerical Problems  **4 Lectures**  Design of Foundation: Slab base and gusseted base, column base subjected to axial load and moment; design of isolated grillage foundation, Numerical Problems  **4 Lectures** | | | |
| **IS Codes:**  1. IS 800  2. Steel Section Handbook  **NB:** *Students are allowed to bring IS 800 in the examination hall for referring the design solutions****.***  Recommended books:  1. S.K.Duggal; *Design of Steel Structures*, *Tata McGraw Hill, New Delhi*.  2. Ramchandra; *Design of Steel Structures* (Vol. I).  3. Negi; *Design of Steel Structures*.  4. SarwerAlamRaz; *Structural Design in Steel*, *New Age International Publication*  5. Thomas Burns; *Structural Steel Design*, *Delmar Publication*.  6. Reinforced Concrete Design/N. KrishnaRaju  Design of steel structures/L.S.Negi | |