DESIGN OF STEEL STRUCTURES

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TYPE OF COURSE : Rerun | Core | UG
COURSE DURATION : 12 weeks (26 Jul’21 - 15 Oct’21)
EXAM DATE : 24 Oct 2021

INTENDED AUDIENCE : Civil Engineering
INDUSTRIES APPLICABLE TO : TATA Steel, SAIL, HSCL, EPIL, Jindal Steel & Power, NBCC, RITES Limited, STUP Consultancy, MN Dastur Co. Ltd., TRF Ltd., Thyssenkrupp, WBHDC Ltd, PWD, CPWD etc.

COURSE OUTLINE:
The course deals with design of steel structures using "Limit State Design Method". The design methodology is based on the latest Indian Standard Code of Practice for general construction (IS 800:2007). The subject covers all the necessary components such as material specifications, connections and elementary design of structural members for designing industrial steel structures. The course provides material specifications and design considerations. It provides relevant material properties of different types of steel. It deals with two types of connections namely welded and bolted connections.

ABOUT INSTRUCTOR:
Prof. Damodar Maity did his graduation and post-graduation from Jadavpur University, Kolkata and Ph. D. from IIT Kharagpur. He has worked in Research Engineers Pvt. Ltd. as System Analyst for two years on the development of Software STAAD.Pro which includes steel design. He has served as faculty member in IIT Guwahati for seven years. He is currently Professor in the Department of Civil Engineering, IIT Kharagpur. His research works concentrated mainly in computational mechanics which includes structural health monitoring, earthquake analysis of dams, vibration control of highrise buildings etc. He has published more than 70 technical papers in various journals of National and International repute. Many of his papers have become top downloaded articles. Prof. Maity organized several training courses for teachers of Engineering Colleges as well as engineers of Government organizations like PWD, CPWD, NF Railway, NEC etc. He is member of Technical Advisory Committee of National Disaster Management Authority, Government of India. Prof. Maity is author of a text book titled, Computer Analysis of Frame Structures, published by IK International Pvt. Ltd. He has developed a video course in Design of Steel Structures in working stress method and a web course in Finite Element Analysis under NPTEL.

COURSE PLAN:

Week 01 : Introduction: Material Overview
Week 02 : Introduction: Design Overview
Week 03 : Bolted Connections
Week 04 : Welded Connections
Week 05 : Eccentric Connections
Week 06 : Failure and Strength Calculations of Tension Members
Week 07 : Design of Tension Members
Week 08 : Design of Compression Members
Week 09 : Design of Lacing and Batten Systems
Week 10 : Design of laterally supported Beams
Week 11 : Design of laterally unsupported Beams
Week 12 : Design of Column Base