

Conceptual and Structural Design: Lightweight Structures

Overview

The course addresses the following topics:

1. Introduction: "Gesamtkunstwerk", Conceptual and Structural Design
2. Bridges: Cable-supported Bridges, Footbridges, Integral Bridges
3. Lightweight Roofs: Cable nets, looped cable roofs, Membrane Structures
4. Double Curved Structures: Felix Candela and Concrete Shells, Glass roof
5. New Materials: Infralightweight Concrete and Carbon Fibres

The objectives of the course are:

1. To appreciate the principles of Conceptual and Structural Design
2. To learn how these principles can be applied to Lightweight Bridge Structures, Roofs and Shell Structures
3. To learn about new lightweight materials: Infralightweight Concrete and Carbon Fibres

Prerequisites: Fundamentals of structural analysis and design

Register at www.gian.iitkgp.ac.in.

Course Dates	26th September to 1st October, 2016				
Host Institute	IIT Madras				
No. of Credits	1				
No. of Participants	50 (maximum)				
You Should Attend If...	<ul style="list-style-type: none">▪ You are a structural engineer/faculty/student interested in conceptual and structural design, and lightweight structures				
Course Registration Fees	<p>The participation fees for taking the course is as follows:</p> <table><tr><td>Student Participants: Rs.1000</td><td>Government Organizations: Rs.5000</td></tr><tr><td>Faculty Participants: Rs.3000</td><td>Industry Participants: Rs.10000</td></tr></table> <p>The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment usage charges.</p> <p>Mode of payment: Demand draft in favour of "Registrar, IIT Madras" payable at Chennai</p>	Student Participants: Rs.1000	Government Organizations: Rs.5000	Faculty Participants: Rs.3000	Industry Participants: Rs.10000
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Accommodation	The participants may be provided with hostel accommodation, depending on the availability, on payment basis. Request for hostel accommodation may be submitted through the link: http://hosteldine.iitm.ac.in/iitmhostel				

Course Faculty



Professor Mike Schlaich is a Professor of Structural Engineering, chairing the Department of Conceptual and Structural Design at Technische Universität Berlin since 2004. His research concentrates on active and movable lightweight structures that can adapt to changing boundary conditions, light-weight structures

made of carbon and infra-lightweight concrete as loadbearing insulation developing a prototype for energetically active and convertible climate envelopes, foil, cushion membrane cables, carbon fiber, bridges concrete truss models, bionic artificial muscles.

Course Coordinator



Professor Devdas Menon is a Professor of Structural Engineering at the Civil Engineering Department of IIT Madras. His research interests are primarily in the analysis and design of reinforced and prestressed concrete structures.

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