



## Department of Civil Engineering Indian Institute of Technology Kanpur

Announcing Workshop on  
*Structural Analysis using ETABS*  
To be conducted at IIT Kanpur during March 16-17, 2015

### WORKSHOP OBJECTIVES

The aim of the workshop is to provide the participants an overview on Structural Analysis using ETABS.

### PARTICIPANTS

The workshop is designed for

- Civil Engineers engaged in planning, design, or construction of buildings.
- Senior professionals responsible for directing these activities

### WORKSHOP CONTENTS

1. Modelling of a building structure : an overview, Objectives and strategies
2. Analysis Flavours: Linear, Non-linear
3. Introduction to ETABS: Its history and current capabilities.
4. ETABS GUI, Modelling overview from start to finish by a simple example
5. Object based modelling: Major differences from element based modelling. Good work methods
6. Modelling Objects of ETABS viz, point, line, area and link objects. Polymorphism of objects,
7. Point Object: The most basic object, its usefulness and modelling options. When to use multiple points at same location
8. Line objects: Utility of line objects, modelling scope viz, truss, 3D beam, columns, Assignment options for changing the character of line object
9. Area objects: Utility of Area Objects, modelling scope viz. membrane, plate, shells, Uniform shell, layered shell, load application, Other Assignment options of area objects
10. Link Objects: Utility of Link Objects, modelling scope, detailed treatment of linear and non-linear link objects
11. All type of objects may be present in the same model. Care to be taken in such cases.
12. Setting up load cases for analysis. Overview of analysis available in ETABS viz. Linear/Nonlinear cases and types such as static, Spectrum, buckling, modal, time history, staged analysis etc.
13. Simple examples of each type of analysis. Non-linear analysis to account for contact problems and geometric non-linearity like P-Delta analysis,

Staged analysis etc.

14. Non-linear Pushover analysis. An overview, objectives and strategies. Detailed example of pushover analysis, interpretation of results and drawing the inferences.
15. Discrete non-linear elements. The usefulness of such non-linear elements. Concept of energy dissipation. Analysis with dampers and base isolators.
16. Base Isolation basics.
17. Design of concrete frames in ETABS
18. Design of Steel frame elements in ETABS
19. Modelling and design of shear walls in ETABS
20. Foundation modelling importance, cases when we need to account for that.
21. Practical hints on modelling to satisfy the building codes.
22. Certain non-linear analyses related with P-Delta effects which we cannot ignore even in day to day work
23. Design of shell elements like base mats and flat slabs

### WORKSHOP FACULTY

The workshop will be conducted by

- Prof. Durgesh C. Rai, IIT Kanpur ,
- Mr. Rajiv Sharma, CSI New Delhi and
- Mr. Hemant Kumar, CSI New Delhi.

### VENUE

The workshop will be conducted at IIT Kanpur.

### REGISTRATION

The workshop fee is Rs. 15,000/- (Rupees Fifteen Thousand Only) per participant. It includes workshop material, lunch, and tea breaks. The fee is payable in advance by a crossed draft in favour of *Workshop on ETABS, IIT Kanpur* or through credit card by December 31, 2014. Limited twin-sharing accommodation is available on first-come first-served basis at IITK Guest House on payment.

Interested persons should send the enclosed Registration Form to:  
Cdr (Retd.) Suresh Ailawadi  
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Kanpur - 208 016

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