



S110E: ETABS v9.5 Hands-On Training

COURSE OBJECTIVES

This is a comprehensive hands-on course on using ETABS to model, analyze and design a Concrete Building Structure subjected to static gravity and lateral load. An introductory session on Seismic Analysis is also included.

COURSE OUTLINE

Introduction to ETABS

- Overview of ETABS system
- ETABS's GUI

FE Method overview

- FEM concept
- FEM objects used in ETABS
 - Line – Frame (Beam & Column)
 - Area – Shell/Plate/Membrane (Slab & Wall)
- Understanding elements forces and stresses
- Meshing of FE and special constraints
 - Manual (External) Vs Auto (Internal)
 - Auto-frame sub-divide
 - Auto-line constraint

Creating an ETABS model

- Workflow
 - Setup Units, Grids, Storeys, Reference Planes & Line
 - Define Load Case, Load Combination, Analysis Case
 - Creating Model
 - Draw Walls, Columns, Beams & Slab
 - Assign Loading
 - Analysis
 - Design
- Modeling of Frame system
 - Beam Vs Column
 - Section Designer Section
 - Non-prismatic Section
 - Frame end releases
 - End Length Offset and Rigid Zone
 - Panel Zone for shear deformation
 - Beam Stiffness Modifier
 - Torsional effects in Beams
 - Equilibrium Vs Compatibility
- Modeling floor system
 - Virtual membrane for “Yield-line” load collections
 - Plate or Shell for structural floor
 - Beam-Slab interactions
 - Cantilever beam/slab modeling
 - Twisting in Slab (M12)
 - Rigid & Semi-rigid Diaphragm

- Modeling wall system
 - Area stiffness modifier
 - Shell with limited out-of-plane stiffness
 - Coupled Walls system
 - Pier design
 - Spandrel design

Element Design

- RC Building
 - Frame Design
 - RC Design per BS8110
 - Wall Design
 - Pier Design per BS8110
 - Spandrel Design per BS8110
- Steel Building
 - Frame Design
 - Steel Frame Design per BS5950
 - Composite Beam Design per BS5950

Reporting

- Print/Display Table for tabular output
- Print Graphics for graphical output

Advanced Analysis Features

- Modal Analysis
- Stage Construction
- Effects of Elastic Shortening
- Nonlinear Static Analysis
 - Tension/Compression Only members
 - Nonlinear Links
 - Gap/Hook
 - Pile as nonlinear link
- Virtual Work Drift Lateral Optimization

Foundation Analysis

- Modeling Raft Foundation
 - Raft on grade
 - Pile Raft

RC Detailing

- Slab & Beam Design with SAFEv12
- Export to SAFE for foundation design
- Export to SAFE with Dynamic Spectral Results

Introduction to Seismic Analysis

- Equivalent Static Load
- Response Spectrum

Register by 30 Mar 2012 to enjoy
EARLY-BIRD RATE

SPEAKER PROFILE

CHOO, JUNE SHYAN P.E.

MSCE, MPW, BSCE
M.ASCE (USA), M.SEI (USA), MIES, MSSSS



Er. Choo is a Singapore Registered Professional Engineer with many years of consulting experience both in Singapore and USA. In USA, he was a consultant with Dietrich Industries, Inc. and designed many Light-gage steel frame structures scattered over USA. He also spearheaded Dietrich Industries's first IT project worth USD 4 millions which enable their engineers to model, analyze and design any steel structures in 3D with automatic shop drawing generation. In Singapore, he was a consultant at CPG Consultants Pte Ltd where he designed and supervised many building projects.

He is currently the Technical Director of Otte International Pte Ltd, which specializes in advanced and innovative IT solutions for Building, Structural and Geotechnical Engineering professionals. He has extensive experience in computer-aided analysis and design with advanced engineering software. He has conducted numerous training courses and seminars in Singapore and overseas.

Er. Choo graduated with Master of Public Works and Master of Science in Civil Engineering with a Full Academic Merit Scholarship from University of Pittsburgh, Pittsburgh, Pennsylvania, USA. He was awarded the Chi Epsilon (National Civil Engineering Honor Society, USA) scholarship in the Metropolitan District, the National Dean's List and School of Engineering Dean's List in his undergraduate studies in the same university.

COURSE INFORMATION

\$110E: ETABS v9.5 Hands on Training

Date: 12th & 13th Apr 2012 (Thu & Fri)
Time: 9:30 a.m. - 5:30 p.m.
Venue: New Horizons, Level 18 Central Plaza, 298 Tiong Bahru Road, Singapore 168730
Fee: **Early-bird registrations received by 30th Mar 2012:**

SUM Subscribers: S\$727.60 per participant (Incl. 7% GST)

Non SUM-Subscribers: S\$856.00 per participant (Incl. 7% GST)

For registrations received after 30th Mar 2012:

SUM Subscribers: S\$781.10 per participant (Incl. 7% GST)

Non SUM-Subscribers: S\$941.60 per participant (Incl. 7% GST)



Terms and Conditions

- a) Seats are limited. Registration is on a first-come-first-served basis. Training places will be confirmed upon receipt of payment.
- b) All cancellation of registration must be made in writing. If you are unable to attend,
 - i) you will receive 90% refund of the registration fee if cancellation is received in writing more than 14 days before the event.
 - ii) you will receive 75% refund of the registration fee if cancellation is received in writing within 7 - 14 days before the event.
- c) Cancellations will not be accepted within 7 days of the course start date. However, a substitute delegate is welcome at no additional charge.

REGISTRATION FORM

Organization: **Department:**
Address:
Person in charge (Dr/Mr/Ms): **Job Title:**
Email: **Tel (O):** **(HP):** **Fax:**

Participants' Names:	PE No.:	Job Title:	Email:	Tea breaks	
<i>Please write clearly as it will be printed on the Certificate of Completion</i>				Vegetarian	Halal
(Dr/Mr/Ms)	<input type="checkbox"/>	<input type="checkbox"/>
(Dr/Mr/Ms)	<input type="checkbox"/>	<input type="checkbox"/>
(Dr/Mr/Ms)	<input type="checkbox"/>	<input type="checkbox"/>
(Dr/Mr/Ms)	<input type="checkbox"/>	<input type="checkbox"/>
(Dr/Mr/Ms)	<input type="checkbox"/>	<input type="checkbox"/>

I hereby agree to abide by the terms and conditions stated above.

(Signature & Company Stamp)

Please fax the completed registration form to: **6483 3363**

An **invoice & confirmation email** will be sent to you upon receipt of your fax registration.

For enquiries, please contact us at (Tel) **6483 3323** or (Email) **info@ottegroup.com**