

## Structural and Building Skills

Date

2<sup>nd</sup> – 6<sup>th</sup> June , 2024

Venue

Cairo - EGYPT

### Objectives :

- Learn the principles of strength of materials and structural analysis .
- Be introduced to the codes that govern structural design .
- Be familiarized with the available design aids .
- Understand the fundamentals of structural analysis .
- Learn how to apply loads, select materials, and calculate footings, foundations, columns, beams, floor systems, shear walls and diaphragms .
- Achieve an understanding of Shear and Moment diagrams and how these are used by designers in concrete, steel and wood
- Learn the behavior of structures and ways to save construction costs .

### Delegates :

- Construction Engineers, Senior Construction Engineers, Construction Supervisors, Construction General Supervisors, Construction Project Managers, Engineering Technologists, Supervision Engineer, Inspection Engineers, Civil Inspectors, Foremen, Design Structural Engineers, Planners, Structural Engineers, Material Specialists, Quality Control and Quality Assurance Experts, Architects, Supervision Engineers, Team Leaders, Site Officers and Managers, Mechanical Engineers, Technical Professionals, Field Production Supervisor, Operation Engineers, Clients Representatives .

### Contents :

- ✓ **Structural Requirements :**
  - Type and Direction of Loads .
  - International Building Codes.
  - Limit States Design .
  - Strength and Stability.
  - Loads and Effects.
  - Load Combinations.
  - Importance Factors and Categories.
  - Factored Resistance.
  - Dead & Live Loads.
  - Load Variation with Tributary Area.
  - Climate Data.
  - Structural Evaluation and Upgrading of Existing Buildings.
  - Structure Characteristics.
  - Components of Structures.
  - Loading Properties.
  - Support Properties.
  - Material Properties.
  - Geometric Properties.
  - Member Design.
  - Stress, General Equations for Member Design.
  - Force Diagrams.
  - The Effects of Continuity.
  - Special Considerations for Frames.
  - Load Transfer Systems.
- ✓ **Structural Member Properties :**
  - Cross-sectional Area.
  - Section Modulus.
  - Radius of Gyration.
  - Composite Construction.
  - Structural Behaviour.
  - Beams , Columns , Frames , Trusses , Arches ,Plates.
  - Space Trusses and Grids.
- ✓ **Structural Steel Design :**
  - General Information.
  - Steel Types.
  - Steel Products.
  - Residual Stresses.
  - Evaluation of Existing Structure.

### To register

- **Please send an e-mail to :**  
info@atecu.org
- **Or by Fax :**  
002 02 358 32 305
- **Or by Mobile:**  
002 012 109 777 18
- **Or through Web-site :**  
www.atecu.org
- **Or send a mail to :**  
P.O. Box: 25 Haram  
2023 – Giza –  
EGYPT.



- Design of New Structures.
- Tension Members.
- Compressive Members.
- Base Plates.
- Beams.
- Bolted Connections.
- Welded Connections.
- Beam Columns, Composite Design, Gerber Girders.
- ✓ **Design of Reinforced Concrete Structures :**
  - History of Concrete.
  - Fundamentals of Concrete.
  - Properties of Concrete.
  - High Performance Concrete.
  - Concrete Reinforcing.
  - Methods of Concrete Construction.
  - Concrete Design – Basic Structural Design Checks.
  - Design of Un-reinforced Elements.
  - Reinforced Concrete.
  - Design of Beams.
  - Bearing.
  - Design of One-Way Slabs.
  - Design of Columns.
  - Two-Way Slabs.
  - Specifying Concrete.
  - Concrete Reinforcing.
  - Placing and Finishing Concrete.
  - Design of Various Concrete Structures.
  - Remediation Using FRP.
  - Concrete Specification.
- ✓ **Structural Design Using Wood and Wood Products :**
  - Wood as a Material.
  - Resources.
  - Properties.
  - Bending & Shear.
  - Notches.
  - Factors.
  - Compression Members.
  - Tension Members.
  - Combined Load.
  - Bearing.
  - Diaphragms & Shear Walls.
  - Manufactured Products.
  - Fastenings .

<b>Fees</b>	<ul style="list-style-type: none"> <li>• USD : 3800 \$</li> </ul>
<b>Offers</b>	<ul style="list-style-type: none"> <li>• 1 nomination = 0 %</li> <li>• 2 nominations = 10 %</li> <li>• 3 nominations = 15 %</li> <li>• 4 nominations = 20 %</li> <li>• 5 nominations or More = 25 %</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• 09:00 Am – 10:30 Am (Section One)</li> <li>• 10:30 Am – 10:45 Am (Break)</li> <li>• 10:45 Am – 12:00 Pm (Section Two)</li> <li>• 12:00 Pm – 12:30 Pm (Break &amp; Pray)</li> <li>• 12:30 Pm – 02:00 Pm (Section Three)</li> <li>• 02:00 Pm – 03:00 Pm (Lunch Break)</li> </ul>
<b>Language</b>	<ul style="list-style-type: none"> <li>• English &amp; Arabic .</li> </ul>