



an eegis company

بروجاكس للتدريب والتطوير  
Projacs Training and Development

# Roads, Bridges and Underground – Design Techniques

تقنيات تصميم الطرق, الجسور و الأنفاق

01 -05 August 2021

Dubai/ United Arab Emirates



ProjacsAcademy.com



## Objectives

Teaching the civil engineer the skills and the experience needed in designing roads, bridges and tunnels as a multi-criterion problem. From his/her thorough knowledge of dynamics of constructions, of materials, finite elements and foundation technology, we will arrive at an application of this knowledge on very concrete construction works. From the point of view of Design Techniques, this program wishes to teach the behavior and design aspects of roads, bridges and tunnels along with some applications and Examples.

## Who Should Attend?

Any civil engineer with interest in learning about analysis of design of roads, bridges and tunnels:

- Design structural engineers
- Construction engineers

Each may make the best of the experience in his or her way.

Course Content

## Course Outline

### Day 1:

- Road design functions & responsibilities
- High way design standards
- Alignment & super elevation
- Cross sections
- At grade intersections
- Interchanges & grade separations
- Pavement Design
- Drainage design & erosion control

### Day 2:

- Evolutions in bridge construction
- Actions on bridges: static, dynamic, horizontal actions, deformations, fatigue,
- earthquakes
- Abutments, Piers and Walls
- Steel Structures
- Design Philosophies for Highway Bridges

- Highway Bridge Loads and Load Distribution
- Decks and Deck Systems
- Plate bridges

### Day 3:

- Steel–Concrete Composite Box-Girder Bridges
- Orthotropic Deck Bridges
- Horizontally Curved Bridges
- Highway Truss Bridges
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- Concrete Structures
- Conceptual Bridge Design
- Design Philosophies for Highway Bridges

### Day 4:

- Structural Modeling
- Reinforced Concrete Bridges
- Pre-stressed Concrete Bridges
- Segmental Concrete Bridges
- Bearings
- Surface Drainage
- Substructure Details
- Structural Steel Details
- Pre-stressed Concrete Details

### Day 5:

- Bridge Deck Details
- Expansion Joint Details
- Evolutions in tunnel construction
- requirements of tunnel
- main purposes
- procedures involved
- methods of tunneling
- method of selection

## Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation slides and handouts
- Post-assessment

## Program Support

This program is supported by interactive discussions, role-play, and case studies and highlight the techniques available to the participants.

## Schedule

**The course agenda will be as follows:**

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|---------------------|------------------|
| • Technical Session | 08.30-10.00 am   |
| • Coffee Break      | 10.00-10.15 am   |
| • Technical Session | 10.15-12.15 noon |
| • Coffee Break      | 12.15-12.45 pm   |
| • Technical Session | 12.45-02.30 pm   |
| • Course Ends       | 02.30 pm         |

## Course Fees\*

- **2,950USD**  
*\*VAT is Excluded If Applicable*