Advanced In Steel Work Design and Inspection Course

Venue Information

Venue: London UK

Place:

Start Date: 2025-12-08

End Date: 2025-12-12

Course Details

Net Fee: £4750.00

Duration: 1 Week

Category ID: CACETC

Course Code: CACETC-62

Syllabus

Course Syllabus

Course Description

Steel is perhaps the most used construction material in the USA for high-rise towers, industrial buildings, bridges and other structures. It competes with reinforced concrete in the US and rest of the world because of its many favorable characteristics including high strength, high stiffness, ductility and toughness, speed of erection, competitive cost, etc. Its use in the Middle East region has been mostly confined to industrial plants and warehouses. The rise in labor cost and the need for higher buildings will inevitably improve the competitive edge of steel in many instances in the near future.

Design of steel structures has widely been based on the Allowable Stress Design whether the AISC standards of the British BS449 standards are used. This situation has changed since the mid eighties, but old habits expire hard. Many designers and fabricators still use the old allowable stress techniques. The more recent LRFD code of the AISC and the limit state BS5950 offer more rational and economical procedures for the design of steel structures.

This short course is intended to overview modern procedures for the design and erection of structural steel buildings. The course may be attended by civil engineers involved in design, fabrication and supervision. Each participant may draw on the elements of the course that most complement his area of interest and practice. For those engineers with limited practical experience the course will provide ample illustration of real design and construction issues that may assist the designer to conceive of a structural steel system that is safe, economical and constructible.

For the veterans the advent of LRFD and plastic design as well as computer-assisted design shall be the elements of the course that they may be looking to benefit from the most.

The wide range of issues to be discussed, revolve around the use of structural steel in buildings. The examples to be used would vary from the typical one-story warehouse to the multistory frame to special systems such as space frames. Throughout the course, the instructor shall start from the basics to allow ensuring the full participation and comprehension of all attendants, bearing in mind variations in background from education to practice.

Who Should attend?

Any civil engineer with interest in learning about steel design may attend the course and benefit from it. As backgrounds may vary the instructor shall start from the basics and work his way towards more details and to practical applications. It is foreseen that individuals from the following backgrounds may attend:

- Design structural engineers
- Supervision engineer
- Planners
- Steel fabricator
- Construction engineers

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

Course Outline

Day One :

- Introduction
- The case for steel use in construction.
- Available steel grades and sections.
- Codes of practice for design, evolution from allowable stress to LRFD and limit state design.
- Design of tension members.

Day Two :

- Design of compression members.
- Design of Beams
- Design of Beam-Columns

Day Three:

Day Four:

- Selection of structural systems for one story and multistory buildings.
- Rigidly connected frames
- Plane trusses
- Space trusses
- Bracing strategies and design
- Analysis of steel structures using computer packages
- Design of steel structures using computer packages
- Pre-engineered sections design (Visiting Speaker)

Day Five:

- Case study
- Design of composite beams.
- Design of built-up beams.
- Preparation of fabrication and erection shop-drawings
- Specifying structural steel