Agenda

Presented by Scott Hamel, P.E., Ph.D.

Preliminary Concepts of Structural Steel Design
- Design theory and design objectives
- ASD vs. LRFD
- Loads and load combinations
- Steel materials
- Steel construction manual

Tension Members
- Tension member design
- Shear lag

Connection Design
- Connection types
- Connection mechanics
- Bolted connections

Welded connections

Compression Members
- Buckling
- Compression member design

Flexural Members
- Forces on members
- Flexural member design

Steel-Concrete Composite Beam Design
- Components of composite systems
- Design of composite flexural members

Structural Steel Applications and Case Studies
- Commercial and industrial buildings
- Residential buildings
- Bridges

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Basics of Structural Steel
Live, Interactive Webinar - Wed., January 27, 2021

HalfMoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

Learning Objectives

You'll be able to:

Distinguish between and allowable stress design (ASD) and load and resistance factor design (LRFD) for the design of steel buildings.

Identify appropriate applications for structural steel construction, including commercial and industrial buildings, and bridges.

Describe forces on structural steel members, including flexural forces, tension forces and compression forces.

Discuss strategies for designing connections between structural members, including bolted and welded connections.

Learn about steel-concrete composite beam design.

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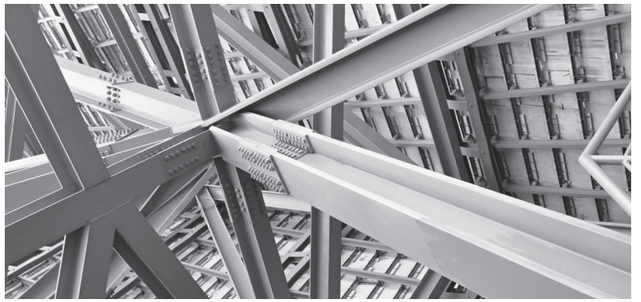

Examine design theory and compare ASD and LRFD methods of steel design

Learn about flexural, tension, and compression member design

Explore combined forces and combined loads

Discuss the design of welded and bolted connections

Review structural steel applications and case studies

Continuing Education Credits

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7.0 PDHs

AIA
7.0 LU|HSW

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7.0 HSW CE Hours

International Code Council
.7 CEUs (Building)

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Faculty

Scott Hamel, P.E., Ph.D. *University of Alaska Anchorage*

Originally from New Hampshire, Mr. Hamel completed a B.S. degree in Civil Engineering at Worcester Polytechnic Institute in Massachusetts and a master's degree in Civil Engineering with an emphasis in structures at the University of Colorado at Boulder. Between degrees he worked as a bridge inspector, roadway designer, and bridge engineer in Boston and as a structural engineer in Denver designing hospitals, museums, and courthouses. After earning his license as a professional engineer in Colorado, he returned to school and completed his doctorate in Structural Engineering at the University of Wisconsin-Madison. Mr. Hamel's research was located at the USDA Forest Products Laboratory in Madison and included a three-year long creep test of wood-plastic composites (WPCs). His dissertation subject was finite-element modeling of the time-dependent mechanical behavior of WPCs. Mr. Hamel joined the faculty at the University of Alaska Anchorage in 2011, where his current research includes the mechanical behavior of reinforced WPC materials, and the performance of plywood/polyurethane structural insulated panels (SIPs). At UAA, he teaches undergraduate courses in structural analysis and steel design and graduate-level courses that cover loads on structures, structural reliability, advanced structural analysis, finite-element analysis, and advanced steel design.

Additional Learning

Passive House: Planning and Design
- Mon., Jan. 11, 2021|11:00 am - 2:15 pm CST
- Tues., Jan. 12, 2021|11:00 am - 2:45 pm CST

Structural Forensic Engineering
- Wed., Jan. 13, 2021|10:00 am - 1:45 pm CST
- Thurs., Jan. 14, 2021|10:00 am - 1:45 pm CST

Practical Site Engineering: Science & Techniques
- Thurs., Jan. 14, 2021|11:00 am - 3:15 pm CST
- Fri., Jan. 15, 2021|11:00 am - 2:15 pm CST

Commercial Provisions of the IECC
- Thurs., Jan. 14, 2021|11:00 am - 3:30 pm CST
- Fri., Jan. 15, 2021|11:00 am - 2:00 pm CST

Slab-on-Grade Concrete and Pavement for Private Facilities
- Tues., Jan. 19, 2021|11:00 am - 2:45 pm CST
- Wed., Jan. 20, 2021|11:00 am - 2:45 pm CST

Engineered Lumber Design and Construction
- Fri., Jan. 22, 2021| 8:30 am - 5:00 pm CST

Structural Design Loads under the ASCE 7 Standard
- Fri., Jan. 22, 2021|8:30 am - 5:00 pm CST

Soil Mechanics, Bearing Capacity, and Slope Stabilization
- Mon., Jan. 25, 2021|8:30 am - 4:30 pm CST

Project Management Fundamentals for Engineers
- Tues., Jan. 26, 2021|8:30 am - 4:00 pm CST

International Building Code 2021
- Tues., Jan. 26, 2021|10:00 am - 2:30 pm CST
- Wed., Jan. 27, 2021|10:00 am - 1:30 pm CST

Designing Interiors for Human Wellness
- Thurs., Jan. 28, 2021|11:00 am - 3:05 pm CST
- Fri., Jan. 29, 2021|11:00 am - 1:25 pm CST

Site Design
- Fri., Jan. 29, 2021|8:00 am - 4:00 pm CST

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Webinar Information

Log into Webinar
8:30 - 9:00 am CST

Break
12:30 - 1:00 pm CST

Morning Session
9:00 am - 12:30 pm CST

Afternoon Session
1:00 - 5:00 pm CST

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The American Institute of Architects Continuing Education System has approved this course for 7.0 LU|HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .7 CEUs in the specialty area of Building (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

Registration

Basics of Structural Steel

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