

AMERICAN INSTITUTE OF STEEL CONSTRUCTION

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2018 CE Courses

See following pages for course descriptions by topic

Multi-story Residential: Structural Steel Framing Solutions

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1 LU/HSW

AESS: Categorized by Design

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1 LU

Sustainability 101 – Structural Steel & Sustainability

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Innovations in Steel

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Framing Solutions for Steel-Framed Office Buildings

AIA Course A481
1 LU/HSW

Combating Thermal Issues in Building Construction Utilizing Structural Steel

AIA Course A671
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Building Tall with Steel

AIA Course A751
1 LU/HSW



Multi-story Residential: Structural Steel Framing Solutions

Course Description:

Structural steel framing systems maximize space for occupant comfort, create versatile buildings for ease of design, and enhance the quality of construction to provide safe and healthy buildings. This program provides an overview of structural steel framing systems in mid-rise and high-rise projects and includes case studies which support efficient and economical methods of construction.

Credit: 1 LU/HSW

AIA Course: A741

Learning Objectives:

1. Explore structural concepts that maximize space and promote occupant comfort with structural steel systems
2. Discuss the versatile nature of structural steel and its ability to adapt to multiple functions
3. Understand how to achieve higher quality buildings which provide healthy environments for end users
4. Analyze the impact of fast, economical, and environmentally-conscious methods of construction
5. Learn the advantages which make structural steel framing an economical and structurally sound solution for multi-story residential buildings
6. Discover best practices for multi-story residential buildings when using the selected structural steel system to deliver a sound, safe and efficient building.



AESS: Categorized by Design

Course Description:

Architects want architecturally exposed structural steel on projects to meet their expectations for appearance, budget, quality and structural integrity. The category system implemented in the AISC Code of Standard Practice effectively communicates expectations and should be utilized on any AESS project. Participants in this program will learn how and when to implement the AESS Category Method to effectively communicate the desired appearance for architecturally exposed structural steel in a format that contractors can understand.

Credit: 1 LU

AIA Course: A801

Learning Objectives:

1. Explain the factors which impact the implementation of AESS.
2. Describe how to identify and specify AESS in the contract documents using the category method.
3. Discuss the expectations of fabrication and erection of AESS under the 2016 AISC Code of Standard Practice.
4. Define methods for efficiently achieving AESS quality with relation to budget and schedule.
5. Identify available resources for additional information when applying AESS on upcoming projects.



Sustainability 101 – Structural Steel & Sustainability

Course Description:

The course presents a comprehensive view of the cradle-to-cradle structural steel supply chain from a sustainability perspective. Topics include scrap collection, mill production, fabrication, erection, operating energy and deconstruction.

Credit: 1 LU/HSW

AIA Course: A711

Learning Objectives:

1. Understand each step of the cradle-to-cradle life cycle of the structural steel supply chain and how during that phase of the life cycle structural steel contributes to a sustainable environment, ultimately resulting in healthier and safer building structures.
2. Identify the environmental impact of each step of the cradle-to-cradle life cycle of the structural steel supply and the improvements that have been experienced over the past years.
3. Develop a preliminary approach to optimize the use of structural steel from a resource and sustainability perspective at the project level.
4. Learn the concept of life cycle assessments and the process comparing two similar structures framed with different materials.



Innovations in Steel

Course Description:

This program will demonstrate how recent structural steel industry innovations allow architects to easily express their design, concepts, overcome client serviceability and safety concerns, enhance their use of architecturally exposed structural steel, and help ensure a comfortable, safe and sustainable building environment for occupants.

Credit: 1 LU/HSW

AIA Course: A411

Learning Objectives:

1. Learn how recent structural steel innovations allow architects to easily express their design concepts to alleviate client serviceability concerns and demonstrate how the design of the steel structure will enhance occupant comfort and well-being.
2. Understand framing systems that achieve low floor-to-floor heights and long spans for economies of construction cost and schedule, and reduced use of materials for a sustainable and safe building structure.
3. Learn how steel Wide Flange (WF) shapes and Hollow Structural Sections (HSS) are manufactured and what makes steel fully recyclable and environmentally friendly in addition to being a strong, durable, adaptable and safe building material.
4. Learn how, as a partner in the procurement and delivery process, steel fabricators can provide strategic ideas for cost-effective and time-saving project performance. Examples of the benefits to specific project cost and schedule due to off-site fabrication of the steel will be shown. And attendees will understand the qualities of and fabrication techniques for structural steel, structural engineering concepts, as well as architectural detailing, fire protection and coating systems for structural steel that promote the structural integrity, safety and long-term maintenance of the material and the building.



Framing Solutions for Steel-Framed Office Buildings

Course Description:

Course illustrates how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants.

Credit: 1 LU/HSW

AIA Course: A481

Learning Objectives:

1. Understand how structural steel framing system design techniques can help an office project be completed faster, cost effectively and with benefit to prospective tenants.
2. Learn how the flexibility and adaptability of a steel-frame system can increase an office owner's competitive advantage in the marketplace through easier, cost-effective tenant improvements and changes.
3. Discover the design benefits steel brings to office projects by allowing column-free spaces, which provides more freedom for office layout.
4. Gain knowledge as to how an integrated, collaborative steel team can employ interoperable design software to reduce project schedule, realize significant cost savings, improve quality control, and increase productivity.



Combating Thermal Issues in Building Construction Utilizing Structural Steel

Course Description:

Steel elements that bridge across the insulation in a building enclosure can cause significant heating and cooling energy loss in a building, adversely affecting a building's energy performance and the comfort and wellbeing of inhabitants - but they don't have to. A number of effective mitigation techniques can be used to combat this issue and other systems are being developed. As buildings become tighter and more insulated, it becomes increasingly important to address thermal steel bridging. This presentation will explain the issues and present practical solution strategies. Topics to be addressed include the use of manufactured structural thermal break assemblies, proprietary support systems, thermal 'shims', isolation techniques, and others. The issue of the thermal capacity of buildings will also be explored from the perspective of system mass, exposed thermal area and the heat propagating properties of materials.

Credit: 1 LU/HSW/SD

AIA Course: A671

Learning Objectives:

1. Understand the background of heating and cooling in building structures and the impact of energy use in structures for greater building sustainability and occupant health and comfort.
2. Gain background knowledge on thermal bridging: why it's important in building construction from the perspective of economics, occupant comfort and health, and lifetime structure longevity and sustainability.
3. Explore possible solutions to improved details in building construction that address typical challenge areas of structures, which can help mitigate thermal bridging, considering both cost and energy savings.
4. The issue of the thermal capacity of buildings will also be explored from the perspective of system mass, exposed thermal area and the heat propagating properties of materials – all areas which impact building sustainability and occupant comfort.



Building Tall with Steel

Course Description:

Structural steel framing has historically impacted the ability to build taller structures with stronger, more durable, and safer framing systems. The improvements within the steel industry enhance the quality of construction and the speed of the framing process. Advancements in material science and technology of fabricating steel improve the strength of steel and ability to build tall structures. This program provides methods for designing efficient steel structures, safe construction techniques, and controlling the lateral response while maintaining human comfort in tall and supertall buildings.

Credit: 1 LU/HSW

AIA Course: A751

Learning Objectives:

1. Explore tall building structural concepts that maximize space, daylight, and program flexibility with multiple case study examples.
2. Discuss the process of making steel and improvements in technology which benefit design and construction of tall buildings.
3. Understand the fundamentals of structural design and the inherent properties of structural steel which make it suitable for building tall.
4. Discover best practices for structural steel design for tall buildings to create sound, safe, and efficient buildings in both low seismic and high seismic locations.