

# Agenda

Presented by Robert P. Schaffer, P.E.

## Preliminary Concepts of Structural Steel Design

Design theory and design objectives  
ASD vs. LRFD  
Loads and load combinations

## Flexural Members

Forces on members  
Flexural member design

## Compression Members

Forces on members  
Compression member design

## Tension Members

Forces on members and connections  
Tension member design  
Tensile effects and failures

## Combined Forces and Combined Loads

## Connection Design

Load transfer and connection design  
Bolted connections  
Bolt design, size, spacing, and failures  
Welded connections  
Weld design and weld failures

## Structural Steel Applications and Case Studies

Commercial and industrial buildings  
Residential buildings  
Parking structures  
Bridges

### Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$269. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

## Basics of Structural Steel Design

King of Prussia, PA - Friday, November 8, 2019

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PO Box 278  
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## 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, parking structures 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.



# Basics of Structural Steel Design

King of Prussia, PA - Friday, November 8, 2019



**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

### Professional Engineers

7.0 PDHs

### Architects

7.0 HSW Continuing Ed. Hours

7.0 AIA LU|HSW

### Contractors

Non-Credit Continuing Ed.



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Continuing  
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# Faculty



## Robert P. Schaffer, P.E

Bala Consulting Engineers Inc., King of Prussia, PA

Mr. Schaffer has 17 years of experience in structural analysis and design throughout the Mid-Atlantic region and is a licensed professional engineer in Pennsylvania and New Jersey. He is a graduate of Penn State University Architectural Engineering program with an emphasis in Structural Engineering. Mr. Schaffer has project experience in commercial, higher education, pharmaceutical, hospital/life care and multi-family residential markets. In 2012, he was selected by *Consulting Specifying Engineer Magazine* as a Top 40 Under 40 for his achievements in structural engineering.

### Here's what past attendees had to say about the program and presenter Robert P. Schaffer:

"Excellent presenter; knowledgeable and explains concepts well." – *Structural Engineer*

"Great Instructor - Highly recommend!" – *Environmental Engineer*

"Well versed in subject matter related very well to engineering and construction aspect." – *Engineer*

# Seminar Information

<b>Sheraton Valley Forge Hotel</b>	Registration	Lunch (On your own)
480 North Gulph Road	8:00 - 8:30 am	12:00 - 1:00 pm
King of Prussia, PA 19406	Morning Session	Afternoon Session
(484) 238-1800	8:30 am - 12:00 pm	1:00 - 5:00 pm

### Tuition

**\$289** for individual registration

**\$269** for three or more simultaneous registrations.

### Included with your registration:

Complimentary continental breakfast and printed seminar manual.

### How to Register

- Visit us online at [www.halfmoonseminars.org](http://www.halfmoonseminars.org)
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

**Cancellations:** Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

### Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

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# Additional Learning

## Webinar Series

### Tree Preservation

• **Keys for Success in Tree Preservation**  
Tues., Sept. 17, 2019, 11:00 AM - 1:00 PM CDT

• **Tree Root Morphology and Patterns**  
Tues., Sept. 17, 2019, 1:30 - 3:30 PM CDT

• **Trees as Design Elements and Construction Strategies**  
Wed., Sept. 18, 2019, 11:00 AM - 1:00 PM CDT

• **Tree Protection and Post Construction**  
Wed., Sept. 18, 2019, 1:30 - 3:30 PM CDT

### Pedestrian and Bicycle Transport Planning

• **Introduction to Current Conditions and Trends in Biking and Walking**  
Thurs., Sept. 19, 2019, 11:00 AM - 12:30 PM CDT

• **Engineering and Infrastructure: Design for Walkability and Bikeability**  
Thurs., Sept. 19, 2019, 1:00 - 2:30 PM CDT

• **Developing a Walking and Biking Plan, Part I**  
Fri., Sept. 20, 2019, 11:00 AM - 12:30 PM CDT

• **Developing a Walking and Biking Plan, Part II**  
Fri., Sept. 20, 2019, 1:00 - 2:30 PM CDT

### Wetlands Law and Compliance

• **Understanding Wetlands Laws and Enforcement**  
Wed., Sept. 25, 2019, 11:00 AM - 1:00 PM CDT

• **Identifying Wetlands and Streams**  
Wed., Sept. 25, 2019, 1:30 - 2:30 PM CDT

• **Obtaining Wetland Permits and the Certification Process**  
Thurs., Sept. 26, 2019, 11:00 AM - 12:30 PM CDT

• **Trends and Opportunities in Wetland Preservation, Restoration, Creation and Enhancement**  
Thurs., Sept. 26, 2019, 1:00 - 3:00 PM CDT

For more information and other online learning opportunities visit: [www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)

## Continuing Education Credit Information

This seminar is open to the public and offers 7.0 PDHs to professional engineers and 7.0 HSW continuing education hours to architects in all states. Educators and courses for Pennsylvania engineers are not subject to pre-approval.

This seminar is approved by the American Institute of Architects for 7.0 LU|HSW (Sponsor No. J885). Only full attendance can be reported to the AIA/CES. Visit [www.halfmoonseminars.org](http://www.halfmoonseminars.org) for complete AIA information under this course listing.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York architects.

Providers of continuing education for New York professional engineers are considered approved, if the provider is approved by the American Institute of Architects Continuing Education System. Courses are considered approved if they contribute to the professional practice of professional engineering in approved subject areas.

This course offers a non-credit continuing education opportunity to construction contractors. It has not been approved by any contractor licensing entity for mandatory continuing education credit.

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

# Registration

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How to Register		Registrant Information	
<b>Online:</b> <a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a>		Name: _____	
<b>Phone:</b> 715-835-5900		Company/Firm: _____	
<b>Fax:</b> 715-835-6066	<b>Code:</b>	Address: _____	
<b>Mail:</b> HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		City: _____ State: _____ Zip: _____	
<b>Complete the entire form.</b> Attach duplicates if necessary.		Occupation: _____	
		Email: _____	
		Phone: _____	
		Name: _____	
		Occupation: _____	
		Email: _____	
		Phone: _____	
<p>Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.</p> <p>( )  I need special accommodations. Please contact me.</p>			

## Tuition

( ) **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.

( ) **I am not attending.** Please send me the self-study package:

Downloadable MP3 Audio/PDF Manual for **\$269.00**.

CD/Manual Package for **\$289.00**.

(S&H included. Please allow five weeks from seminar date for delivery)

**Checks:** Make payable to HalfMoon Education Inc.

**Credit Card:** *Mastercard, Visa, American Express, or Discover*

Credit Card Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_ CVV2 Code: \_\_\_\_\_

Cardholder Name: \_\_\_\_\_

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