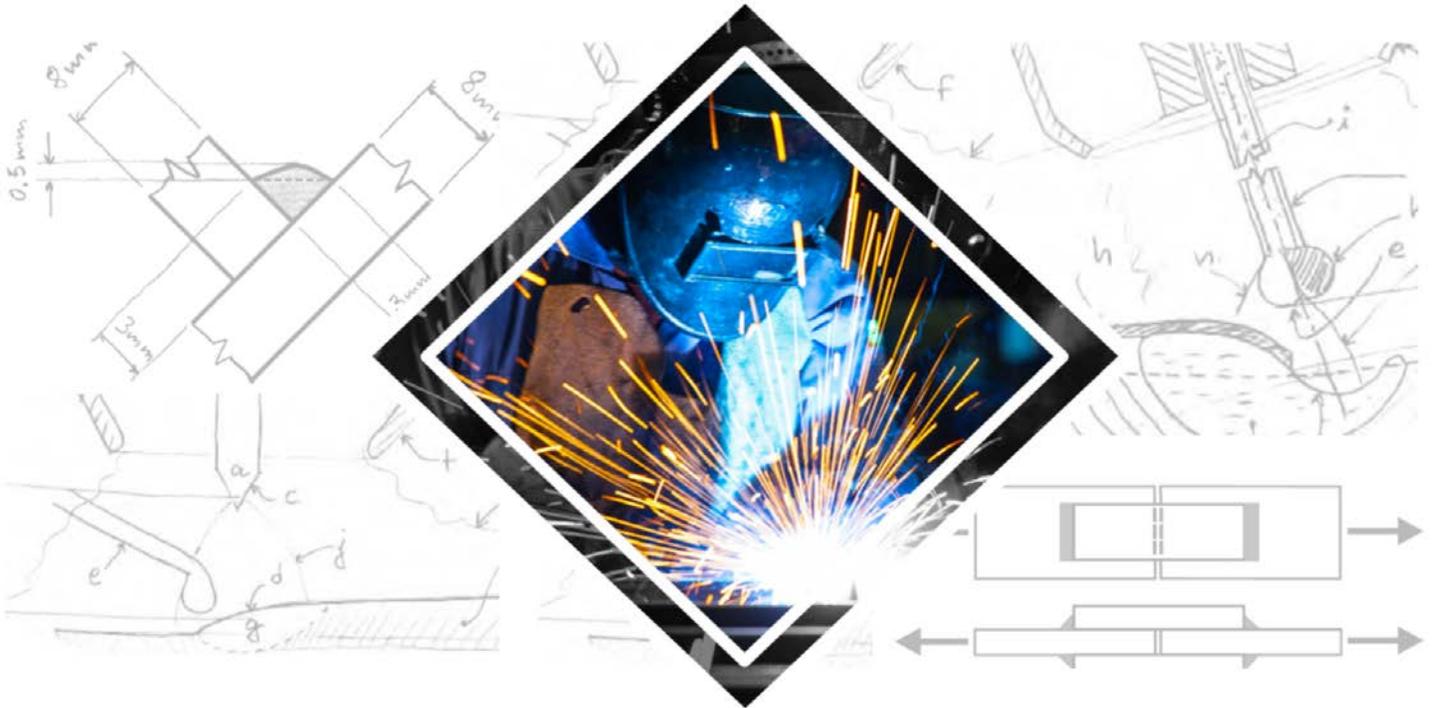


The Canadian Centre for Welding and Joining (CCWJ) is pleased to invite you to the seminar:

DESIGN OF WELDED CONNECTIONS

with Duane Miller Sc.D., P.E.



June 14 & 15, 2017 | 8:00 AM – 5:00 PM

University of Alberta – 8th floor Donadeo ICE Building

9211 116 St NW, Edmonton, AB T6G 1H9

Register at: <https://ccwj2017.eventbrite.com>

Registration Fee: \$400 for CWA, ASM, ASME, AWS, NACE and SME members. \$450 for non-members.

Student Price: \$75 (must have valid student ID).

Please note that attendees will earn 1.6 CEU credits OR 16 hours toward professional development credits.



Seminar Content:

Welded connections are used in a wide range of industries, from construction of towering steel structures, to fabrication and assembly of high-alloy corrosion resistant tanks and pipelines. Regardless of the final application, proper design and placement of welded joints requires consideration of numerous complex phenomena in order to achieved desirable mechanical and metallurgical properties, and ensure the integrity of the final structure or component. Join us, as a world renowned expert shares his knowledge and experience in optimizing reliability, safety, and economics of welded connections of all shapes and sizes. This seminar is an invaluable opportunity for anyone with an interest in the design of any structures, equipment, or components featuring welded connections. Sign-up today!

About the Presenter:

Duane K. Miller, Sc.D., P.E. is a recognized authority on the design of welded connections and is the co-presenter of Lincoln Electric's Blodgett Design Seminar Series. His enthusiastic teaching style and technical expertise have resulted in him being a much sought after speaker around the world. Dr. Miller publishes frequently, and on three occasions has been awarded the Silver Quill Award of the American Welding Society (AWS) for the excellence of his published work. In 2001, he received the American Institute of Steel Construction's T. R. Higgins Lectureship Award, which annually recognizes an outstanding lecturer and author whose technical papers are considered an outstanding contribution to the engineering literature. In 2005, he received AISC's Lifetime Achievement Award and in 2013, the George E Willis award from the AWS for his work in advancing welding internationally. He has authored and co-authored chapters of many texts, including the AISC Design Guide on Welding and the Mark's Handbook of Engineering, 11th Edition. He has appeared as a subject expert on the History Channel and Discovery Channel.

Dr. Miller earned his B.S. degree in Welding Engineering from Le Tourneau University in Longview, TX, an M.S. in Materials Engineering from the University of Wisconsin, Milwaukee, and was awarded an honorary Doctor of Science degree from Le Tourneau University in 1997. He was the first Chair of the Seismic Welding Subcommittee, a former chair of the AWS D1 Structural Welding Committee, a current member of the AISC Specification Committee, a Professional Engineer, Certified Welding Inspector and Qualified Welder.

Schedule:

Day 1 (June 14, 2017):

- ***Basics of Welded Connections:***

Welding codes and standards, the essence of welding: atomic closeness, atomic cleanliness, fusion versus penetration, five joint types, five weld types, weld terminology.

- ***Principles of Connection Design***

Transferring loads through connections, paths of load transfer, bending of welds, secondary members in welded connections, watch out for “nothin’ welds”, difficult to manufacture joints, changes in force direction, respecting material properties.

- ***Details of Welded Connections***

Details of various welded joints, details of CJP groove welds, details of PJP groove welds, details of fillet welds, matching, undermatching, overmatching strength (E70 vs E90).

- ***How to Determine Weld Size***

Sizing CJP groove welds, sizing PJP groove welds, four approaches to sizing fillet welds, effect of direction of loading on fillet welds.

Day 2 (June 15, 2017):

- ***Principles of Fatigue of Welded Connections***

Welded fatigue versus mechanical systems, stress range, stress ratio, influence of stress ratio, influence of steel strength, fatigue categories A-F, and fatigue calculations.

- ***“Listen to the Steel” (Case Studies)***

Failure to provide a load path, welds placed into bending, an overlooked “secondary” member, overloaded members, make it easy for the welder, and failure in compression.

- ***Distortion: Causes and Cures***

Types of distortion, causes of distortion, 18 distortion control principles, heat shrinking, calculations, and examples.