

course leaders

Geoffrey L. Kulak, Ph.D., P.Eng.

Following several years experience as a bridge designer, Geoffrey Kulak spent 26 years at the University of Alberta, now as Professor Emeritus. He has extensive experience in building code development, research, teaching, and consulting. He has published extensively, including the CISC Design Guide on High Strength Bolting for Canadian Engineers, and the principal undergraduate steel design textbook in Canada, Limit States Design for Structural Steel. He is a recognized authority on behaviour of welded and bolted connections, fatigue of fabricated steel members, and member stability. Among other awards, in 1999 he received the AISC Special Achievement Award.

Yvon Sénéchal

Yvon Sénéchal graduated from CEGEP of Trois-Rivières in 1976 as technologist in Metallurgy specialized in Quality Control. Yvon possesses over 33 years of experience in welding environment as Welding Inspector, Quality Control Manager and Operations Manager in various industry sectors such as Nuclear, Petrochemical, Pressure Vessels & Structural Steel.

In 1989, he joined the Canadian Welding Bureau as Certification Services Representative and was promoted over ten years ago as Operations Manager for Québec Region. In this position he is directing all service lines such as Welding Certification, Management System Registration, Education & Training and CWA Membership services provided by the CWB Group.

Over the past years, he was serving as co member on CSA W178.1 & W178.2 Technical Committee related to the Certification of Welding Inspection Organizations and the Certification of Welding Inspectors. He is also certified as Quality Management System Auditor by RABQSA International Certification.

Other presenters may also participate.

registration and confirmation

- ✓ register on-line at:
www.cisc-icca.ca/courses
- ✓ number of places is limited, early registration is recommended
- ✓ registrations will be confirmed only upon receipt of payment

registration fees

	member	non-member
30 days prior to course	\$380	\$420
less than 30 days prior	\$420	\$470

withdrawal

Requests for refunds must be made in writing and will be subject to the following restrictions:

- ◆ 15 business days or more prior: full refund
- ◆ less than 15 days, refunds are subject to a deduction of \$200 including GST, to cover an administration fee and the cost of the Course handout material, which will be sent to you.
- ◆ substitute acceptable: advise CISC prior to course date

cancellation

CISC reserves the right to cancel this course and refund the course fee.

For further information please contact:

Canadian Institute of Steel Construction
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Markham, Ontario, L3R 3T7
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CANADIAN INSTITUTE
OF STEEL CONSTRUCTION

BOLTING and WELDING for DESIGN ENGINEERS



Register Early and Save!

One-day Course

SCHEDULE

Ottawa, ON	April 7, 2010
Toronto, ON	April 8, 2010
Winnipeg, MB	April 9, 2010
Regina, SK	April 27, 2010
Edmonton, AB	April 28, 2010
Vancouver, BC	April 29, 2010
St. John's, NF	May 4, 2010
Halifax, NS	May 5, 2010
Fredericton, NB	May 6, 2010
Thunderbay, ON	Oct. 5, 2010
Toronto, ON	Oct. 6, 2010
Saskatoon, SK	Oct. 7, 2010
Calgary, AB	Oct. 19, 2010
Kelowna, BC	Oct. 20, 2010
Victoria, BC	Oct. 21, 2010

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course description

The “Bolting and Welding for Design Engineers” course is the first in a series of three CISC courses on connecting steel components and a prerequisite for CISC courses “Connections for Steel Structures” and “Design of Seismic Connections in Steel Framed Buildings”. The “Bolting and Welding” course provides an introduction to the basics of bolting and welding steel structures with emphasis on practical and economical solutions. Although not a connection design course per se, participants will come away with a solid understanding of the materials, products, specifications, installation, field challenges and design methodologies for connecting structural steel components.

High Strength Bolting:

Design and specification of a bolted joint requires the structural engineer to select the type of fasteners, to understand how they are to be designed, and to set out acceptable methods of installation and inspection. The purpose of this course is to provide the engineer with the information necessary to select suitable high-strength bolts, specify the methods of their installation and inspection, and to understand the basis of the design rules in CSA S16.

Welding:

This segment of the course covers weld joints, weld types, criteria for selecting weld types, matching and under-matching filler metal strength, the procedures needed to determine welding capacity, and to understand the basis of the design rules in CSA S16 and CSA W59.. Principles of welded connection design will be reviewed, along with case studies and solutions to field problems. Following the course, the participant should be able to solve welding problems, or otherwise know when it is necessary to consult a welding expert. The Canadian Welding Bureau’s Modular Learning Systems will be introduced.

course content

High Strength Bolting

- ⇒ Installation and inspection of high strength bolts
- ⇒ Bolts in shear
- ⇒ Slip-critical and bearing-type joints
- ⇒ Tension connections
- ⇒ Tension and shear block
- ⇒ Shear lag
- ⇒ Fatigue of bolted and riveted joints
- ⇒ Re-use of high strength bolts
- ⇒ Joints with both bolts and welds
- ⇒ Design example (gusset plate)

Welding

- ⇒ Welding codes and standards
- ⇒ Weld Joints and Welding Symbols
- ⇒ Metal Arc Welding Processes
- ⇒ Welding Metallurgy
- ⇒ Residual Stress and Distortion
- ⇒ Welding Design Considerations
- ⇒ Fracture and Fatigue
- ⇒ Weld Fault Characteristics
- ⇒ Welding Inspection and Testing
- ⇒ Field Problem Solution
- ⇒ Fabricator and Erector Qualification

one-day course includes

- ✓ morning and afternoon sessions
- ✓ support documents: High Strength Bolting for Canadian Engineers, CISC, 2005, and, Welding Design for Engineers, CWB, 2005
- ✓ handout of slide presentations
- ✓ lunch and refreshment breaks

continuing education units (CEU)

CISC courses are eligible for internationally recognized Continuing Education Units (CEU). CISC will award 0.7 CEU’s and a CISC Course Certificate to all participants who successfully complete the one-day course.

who should attend?

- ◆ structural engineers and others who design steel structures
- ◆ inspectors and code officials involved in the approvals process
- ◆ detailers, erectors and other industry personnel who connect structural steel components
- ◆ professors and lecturers involved in teaching steel design courses
- ◆ designers, detailers and others intending to take the CISC Connections for Steel Structures course