



September 2009 Course Outline

E4 Structural Steel Design for Buildings

Offered via the classroom and internet

Purpose: This course is intended to provide students with the skills and knowledge required for effective design of steel buildings using Canadian Limit States Steel Standard CSA S16-01(R05). The course is intended to promote better understanding of the design considerations of steel buildings. The course is appropriate as a code refresher or for recently graduated engineers as it will cover items that are not traditionally part of a steel design course including steel decking, open web steel joists and HSS trusses. Approximately 25% of the course will be directly related to seismic design using NBCC 2005 / BCBC 2006 requirements. Where possible, current design practice will be demonstrated using worked problems including weekly home assignments. The course is fast paced and students should have taken a previous steel course. Possession of the CISC *Handbook of Steel Construction* 9th edition is required.

Selected Topics: Advantages and disadvantages of structural steel, material grades and section availability, basic beam design, steel deck design for vertical loading, roof deck, composite floor deck, design of roof beams for wind uplift, ponding, snow drifting, conceptual design of steel framing systems, framing for openings in floors and roofs, framing for plan irregularities, beam holes, stability issues, cantilever beam stability, Gerber framing system, open web steel joists, hollow structural section trusses and frames, HSS connections, composite beams, vibration analysis, columns, column base-plates, beam-columns, connection design for the design engineer, shop drawing review, seismic design for steel buildings, computation of seismic forces from NBCC 2005 / BCBC 2006, diaphragm design and detailing, brace bay design and moment frames. Upcoming changes in S16-09 will be discussed.

Course Coordinator, Instructor and Contact: **Andrew Metten**, P.Eng., Struct.Eng, Partner, Bush, Bohlman & Partners; Email: ametten@bushbohlman.com

Communications: Notices to students and questions outside of class will be handled only through e-mail.

Schedule: 12 Thursdays, 6:30—8:30 P.M., September 17 to December 10, (**Mid-term break:** October 29)

Venue: Alma Van Dusen Room, Vancouver Public Library, 350 West Georgia Street, Vancouver

Internet

This course is being offered **via the internet** as well as in the classroom. As it is a live transmission, the dates and times of the classes are the same as in the classroom. Should you wish to take this course via the internet, please complete the application form provided for internet courses.

System requirements for CSE Program LIVE e-learning Training:

- ✓ Any DSL or Cable Connection better than 56K. (Boosted 56K also works. Please test to be sure)
- ✓ A microphone and speakers or headset plugged into your PC.
- ✓ PC with Windows 2000 or XP running a processor greater than 750 MHz. with Ram of 256 or greater.