

CIVL 331: **Structural Steel and Timber Design I**
Instructor: S.F. Stiemer, Ph.D., P.Eng.

Course Objectives:

- to develop basic understanding of design of engineering structures through structural steel and timber design and application
- to encourage continuous learning and improving of engineering synthesis skills

Lectures:

- background
- principles
- introduction to methods

Tutorials:

- numerical examples
- extension of background
- solution to assignments
- open problem solutions

Course Content:

Engineering Design Process

- Introduction
- Engineering Structures
- Safety Concept of Limit States Design
- Load Evaluation
- Analysis and Design Tools

Structural Steel Design

- Structural Steel Metallurgy and Properties
- Common Hot Rolled Shapes and Standard Mill Practices
- Classes of Rolled Shapes
- Design of Connections
- Tension Members
- Compression Members
- Bending Members

- Combined Bending and Compression Members
- Built-Up Members
- Weld Design and Symbols

Timber Design

- Tension Members
- Compression Members
- Bending Members

Mark distribution: 80% Exams (final and take-home midterm),
20% Assignments and quizzes

Online: http://www.sigi.ca/engineering/steel_design.html
(notes, assignments, discussions)

Handouts: to be printed or kept in electronic format by student

Required Handbook: Handbook of Steel Construction by CISC,
recommended: latest Edition (possibly discount purchase
through instructor / class speaker / tutor)

Available Software: Formatted spreadsheets

Recommended Software: MS Excel or similar i.e. OpenOffice
(from www.OpenOffice.org)

SketchUp (from <http://sketchup.google.com>)