

**ENGG*05-429 LAW, ETHICS AND SAFETY
WINTER, 2004**

Course Coordinator: Professor L. Otten - Room 2385

Lecturers: Part 1- Joel A. Heard, B. Com.,J.D.

Part 2 - Scott Ney, P.Eng.
Construction Health & Safety Officer
Tom Eastwood
Industrial Health & Safety Specialist

Prerequisites: Students must be in their final Winter semester.

Lectures: Thursday: 19:00 - 21:00; MacNaughton Building 113

Objectives:

Objectives of the course are to provide students with an understanding of law & ethics for professional engineers; Canadian legal system; tort liability; contract law; lien legislation; statutes governing the engineering profession; code of ethics; laws related to labour; employment standards act; workers' compensation act; occupational health and safety act; and health and safety concerns related to professional engineering.

The course provides the basic information required to write the Professional Engineers Ontario's Professional Practice Examination. This examination is mandatory to become a Licensed Professional Engineer (P.Eng.) after completing the internship.

Method of Presentation & Grading:

The course is offered in two parts:

1) *Law & Ethics for Engineers*: - January 8th to February 5th
- Examination: February 12th

2) *Health & Safety*: - February 26th to April 1st
- Examination: April 13th, 11:30 - 1:30, Location: TBD

Each examination is set and graded by the lecturers and is worth 50% of the final mark.

Please see Stephanie Wilson, rm 2363, to purchase copies of the reference materials and the bookstore for the text.

Law and Ethics for Engineers

The following topics will be discussed over five weekly 2 hour lectures, Thursday evenings 7pm to 9pm, starting January 8th in the MacNaughton Building, Room 113. The exam for this portion of the course will be held on February 12th from 7pm to 9pm at the same location.

1. Introduction
 - 1.1 preliminary matters
 - 1.2 why law is important to engineers
 - 1.3 types of law: legislation and case law
 - 1.4 application of the law - the lawyer's role: preventative vs. dispute resolution
 - enforcement and dispute resolution: courts, tribunals and other alternatives

2. Carrying on Business as an Engineer
 - 2.1 types of business organization
 - 2.2 vicarious liability
 - 2.3 regulation of engineers: *Professional Engineers Act* and regulations

3. Contract Law and the Engineer
 - 3.1 essential elements of a contract
 - 3.2 written contracts, oral contracts and letters of intent
 - 3.3 contract interpretation
 - 3.4 waiver of contractual rights and equitable estoppel
 - 3.5 misrepresentation, duress, undue influence and mistake
 - 3.6 breach of contract
 - the need to react
 - the duty to mitigate
 - remedies
 - 3.7 fundamental breach of contract
 - 3.8 quantum meruit / unjust enrichment

4. Tort Law and the Engineer
 - 4.1 definitions
 - intentional torts vs. unintentional torts
 - privity of contract
 - 4.2 purpose of tort law
 - 4.3 essential elements
 - duty of care
 - breach of duty
 - resulting damage
 - 4.4 when does a duty of care arise?
 - 4.5 when is the duty of care breached? (How do the courts measure an engineer's performance?)
 - 4.6 extent of liability for breach- measure of damages
 - contributory negligence
 - economic loss vs. physical damage

5. Limiting Liability
 - 5.1 by contract
 - 5.2 by other means
 - business organization and structure
 - insurance
 - limitation periods

TEXT: Marston, *Law for Professional Engineers*, 3rd edition

MATERIALS: *Professional Engineers Act*, (Ontario) and Regulations and By-laws made pursuant to the Act

INSTRUCTOR: **Joel Heard, B.Com., J.D.**

PART 2. Health & Safety - Mr. Ney & Mr. Eastwood

- Reference material:**
1. Occupational Health & Safety Act (1990)
 2. Regulation for Industrial Establishments (1990)
 3. Regulation for Construction Projects (1991)

Topics for Study:

1. Overview of the Occupational Health and Safety Act including who is bound by the Act; Health and Safety representatives; Joint health and safety committees; Duties of constructors, employers, supervisors, workers, owners, suppliers, engineers and directors and officers of corporations. Additional topics include work refusals; work stoppages; reprisals; notification of accidents; inspector powers; orders; appeals; obstruction; confidentiality; immunity; penalties; due diligence and limitation on prosecution
2. Requirements of the Regulation for Industrial Establishments. Definitions; equivalency; application; minimum age of workers; notice of accidents; premises; lighting; fire prevention/protection; machine guarding; material handling; confined spaces; maintenance and repairs; protective equipment; molten metal; logging; buildings; and industrial hygiene.
3. Requirements of the Regulation for Construction Projects; Notification; alternative methods/materials; appointment of supervisor; minimum age of workers; personal protective equipment; housekeeping; lighting; ventilation/respiratory equipment; drum/tank repair; temporary heat; fire safety; confined spaces; public way protection; traffic control; access/egress; guardrails; forms & falsework; scaffolds; suspended platforms; elevating work platforms; cranes; rigging; electrical hazards; roofing; and excavations.
4. Workplace Hazardous Materials Information System (WHMIS).