

INSTRUCTOR: Dr. B.N. Persaud;
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Consultation hours:

COURSE DESCRIPTION AND OBJECTIVES

The course aims to provide a basic understanding of highway design principles. The geometric design portion will focus on the safety, economic and operational repercussions of alternative design strategies and standards. Pavement design will be treated in the context of a pavement management system.

COURSE OUTLINE (LECTURE PERIOD SCHEDULE):

TOPICS/ACTIVITY	Lecture Dates
Course introduction; highway design issues	Jan. 8
Introduction to geometric design	
Design controls, classification and consistency	
Designing for safety	
Alignment	Jan. 22, 29, Feb.5
Horizontal alignment	
Vertical alignment	
Alignment co-ordination	
Cross-section elements	Feb. 12
Intersection Design	Feb. 19
Roadside design	March 5
Safety and Design - Guest lecture from practicing engineer	March 12
Supplementary Urban Design Issues, Course evaluation	March 19
Pavement Design and Management	March 26, April 2
Flexible Pavements	
Rigid Pavements	
Highway drainage	April 9

ASSIGNMENTS AND PROJECTS

Item	Description	Date assigned	Date due
Lab 1:	Design controls, safety performance	Jan. 9	Jan. 21 NOON
	Part 2: Highway 407 Safety review	Jan. 9	Jan. 22 in class
Lab 2:	Horizontal alignment Part 1	Jan. 23	Jan. 28 NOON
Lab 3:	Horizontal Alignment Part 2	Jan. 30	Feb. 4 NOON
Lab 4:	Vertical alignment, other alignment issues	Feb. 6	Feb. 11 NOON
Lab 5:	Cross-section design	Feb. 13	Feb. 18 NOON
Lab 6:	Intersection Design	Feb. 20	Feb. 22 NOON
Lab 7:	Roadside Design	March 6	March 18(4:00 p.m.)
Lab 8:	Urban Design	March 20	March 25 NOON
Lab 9:	Pavement design	March 27 April 3	April 8 (4:00 p.m.)
Lab 10:	Drainage	April 10	DO NOT SUBMIT

Note: Planned alterations in the list and approximate deadlines of Labs and in the grading scheme will be discussed in class before implementation.

GRADING:

Final Exam (2.5 hours)	= 65%
Lab assignments/participation	= 35%

REQUIRED TEXT: Geometric Design Guide for Canadian Roads 1999, Ed. To be ordered from Transportation Association of Canada at student price. Information will be handed out at first class meeting.

Main Reference: Text from Surveying Course

DUE IN CLASS ON JANUARY 22, 2002.

SYNOPSIS OF THE HIGHWAY 407 SAFETY REVIEW

As most students are aware, the original design for first section of Highway 407 to be opened was subject to considerable controversy, resulting in a delay in the highway opening, pending a review by a team appointed by Professional Engineers, Ontario (PEO). The full report of the review team can be viewed on the internet at: <http://www.peo.on.ca/publications/407report/index407.htm>

Your task for this lab is to summarize what in your mind are the top ten highlights of this report. Devote 1-3 lines for each highlight and try not to spend more than 2-3 hours on this lab.

Be prepared to discuss your findings during the lecture period of January 22, 2002.

CVL 735 Winter 2002

Ordering Information for Course Text: Geometric Design Guide for Canadian Roads 1999, Ed.

STUDENT PRICE: \$149 (non-students, non-TAC member price is \$700 +)

Shipping: Regular mail \$10; Courier \$25

GST: Regular Mail \$11.13; Courier \$12.18

Total (for one manual): \$170.13 (regular mail) or \$186.18 (courier)

The Guide is an invaluable reference for anyone working in Highway Engineering, so many students will want to take advantage of the bargain basement student pricing to acquire a resource that they can use professionally for a long time.

The Guide will also be used in the Winter 2003 offering of CVL735, so those not interested in keeping it permanently may make an arrangement with a current 3rd year student for re-selling the Guide or sharing the costs. Retain this note as evidence that the Guide will be used in Winter 2003.

The Guide will be needed for use in class on January 22 so you must place your order immediately to receive it in time if you are using regular mail. Use the attached order form.

ORDER FOR: GEOMETRIC DESIGN GUIDE FOR CANADIAN ROADS, 1999 Ed.

**For use at Ryerson Polytechnic University in Course CVL 735: Highway Design
(Course taught by Dr Bhagwant Persaud (416-979-5000, Ext. 6464))**

NAME:

STUDENT NUMBER:

TELEPHONE:

E-mail:

MAILING/SHIPPING ADDRESS:

Enclose cheque or money order made out to Transportation Association of Canada

Mail to:

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You may try phoning in your order with a credit card to save time.