ELEC 573 Engineering Design by Optimization: II

Term – SPRING 2016 (201601)

Instructor
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Office Hours
Days: Wednesdays
Time: 14:40 – 16:40
Location: EOW 427

Course Objectives
To learn fundamental theory, mainstream contemporary methods and algorithms of constrained optimization. Applications of these algorithms to real-world problems in engineering and science will be an integral part of the course.

Learning Outcomes
Thorough understanding of the basic concepts and theory of constrained optimization; working knowledge of the methods and algorithms to be covered by the course.

Syllabus

Introduction and Basic Elements of Unconstrained Optimization 3
Motivation and structure of constrained optimization problems.

Theory of Constrained Optimization 8

Linear Programming 6

Convex quadratic Programming (QP), SDP, and SOCP 7

Concepts and Methods for General Convex Problems 7

Nonconvex Constrained Optimization 7
Required Text
Lecture notes to be posted on line.

Assessment:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Project</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>40%</td>
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Date: Due on the same day as the final exam.

Note:
The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Graduate Calendar.

http://web.uvic.ca/calendar/GRAD/FARe/Grad.html

Note to Students:
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

Accommodation of Religious Observance
http://web.uvic.ca/calendar/GI/GUPo.html

Policy on Inclusivity and Diversity
http://web.uvic.ca/calendar/GI/GUPo.html

Standards of Professional Behaviour
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities.
http://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Graduate Calendar for the UVic policy on academic integrity.
http://web.uvic.ca/calendar/FACS/UnIn/UARe/PoAcI.html

Course Lecture Notes
Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.