COURSE OUTLINE

ELEC 573  Engineering Design by Optimization: II
Spring 2014

Instructor:
Dr. W.-S. Lu
Office Hours:
Days: Wednesdays
Phone: 8692
Time: 14:40 – 16:40
E-mail: wslu@ece.uvic.ca
Location: EOW 427
www.ece.uvic.ca/~wslu

Lectures:
Section: A01/CRN 21147
Days: Tuesdays, Wednesdays, and Fridays
Time: 13:30 – 14:20
Location: ELL 161

Required Text:
Lecture Notes to be posted on line

Assessment:
Assignments:  30%
Project:    30%
Final:      40%

Due dates for assignments:
Assignment 1: Jan. 17
Assignment 2: Jan. 24
Assignment 3: Jan. 31
Assignment 4: Feb. 7
Assignment 5: Feb. 18
Assignment 6: Feb. 25
Assignment 7: Mar. 4
Assignment 8: Mar. 11
Assignment 9: Mar. 18
Assignment 10: Mar. 25
The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:

<table>
<thead>
<tr>
<th>Passing Grades</th>
<th>Grade Point Value</th>
<th>Percentage for Instructor Use Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>9</td>
<td>90 – 100</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
<td>85 – 89</td>
</tr>
<tr>
<td>A-</td>
<td>7</td>
<td>80 – 84</td>
</tr>
<tr>
<td>B+</td>
<td>6</td>
<td>77 – 79</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>73 – 76</td>
</tr>
<tr>
<td>B-</td>
<td>4</td>
<td>70 – 72</td>
</tr>
<tr>
<td>C+</td>
<td>3</td>
<td>65 – 69</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>60 – 64</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>50 – 59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Failing Grades</th>
<th>Grade Point Value</th>
<th>Percentage for Instructor Use Only</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>0</td>
<td>35 – 49</td>
<td>Fail, conditional supplemental exam. (For undergraduate courses only)</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0 – 49</td>
<td>Fail, no supplemental.</td>
</tr>
<tr>
<td>N</td>
<td>0</td>
<td>0 – 49</td>
<td>Did not write examination, Lab or otherwise complete course requirements by the end of term or session; no supplemental exam.</td>
</tr>
</tbody>
</table>

The rules for supplemental examinations are found on page 80 of the current 2013/14 Undergraduate Calendar.

<table>
<thead>
<tr>
<th>Term in which E Grade Was Obtained</th>
<th>Application Deadline for Supplemental Exam</th>
<th>Supplemental Exam Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First term of Winter Session (Sept – Dec)</td>
<td>February 28 in the following term</td>
<td>First week of following May</td>
</tr>
<tr>
<td>Second term of Winter Session (Jan – Apr)</td>
<td>June 30 in the following term</td>
<td>First week of following September</td>
</tr>
<tr>
<td>Summer Session (May – Aug)</td>
<td>October 31 in the following term</td>
<td>First week of following January</td>
</tr>
</tbody>
</table>

Deferred exams will normally be written at the start of the student's next academic term; i.e., approximately 4 months following the deferral of the exam.

**Course Description**

1. **Course Objectives**
   To learn fundamental theory and main stream 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.

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

3. **Syllabus**
   **Introduction**
   Motivation and structure of constrained optimization problems.
   **Theory of Constrained Optimization**

**Linear Programming**

**Convex quadratic Programming, SDP, and SOCP**

**Optimization of Nondifferentiable Convex Problems**

**Nonconvex Constrained Optimization**
Sequential quadratic programming methods. Interior-point methods. Examples and case studies.

**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 ECE Chair by email or the ECE Chair’s secretary to set up an appointment.

**Accommodation of Religious Obsvance**
See [http://web.uvic.ca/calendar2013/GI/GUPo.html](http://web.uvic.ca/calendar2013/GI/GUPo.html)

**Policy on Inclusivity and Diversity**
See [http://web.uvic.ca/calendar2013/GI/GUPo.html](http://web.uvic.ca/calendar2013/GI/GUPo.html)

**Standards of Professional Behaviour**
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour at [http://www.uvic.ca/engineering/current/undergrad/index.php#section0-25](http://www.uvic.ca/engineering/current/undergrad/index.php#section0-25) which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult [http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/PoAcI.html](http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/PoAcI.html) for the UVic policy on academic integrity.

**Plagiarism detection software may be used to aid the instructor and/or TA’s in the review and grading of some or all of the work you submit.**