ME 7200 - Optimal Design

Syllabus

Instructor           Dr. Michael Raulli
Class Times         Wednesday, 2:30-5:20, CEER 312
Contact Information 113F Tolentine; 610.519.4798; michael.raulli@villanova.edu
Office Hours        TR 1:00-4:00 PM, and by appointment
Website             http://homepage.villanova.edu/michael.raulli/html/7200Fall06.html

1 Text


2 Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>40 %</td>
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<tr>
<td>Midterm</td>
<td>25 %</td>
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<td>Final Project</td>
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**Homework**  Homework will generally be directed towards the understanding and implementation of optimization algorithms. This will entail the use of computer programming languages such as Matlab, C++, etc. In general, due to the nature of optimization algorithms, which require loops, conditionals, external functions, as well as other features, languages such as Mathcad are not very well suited. Additionally, optimization algorithms are numerical algorithms, and a symbolic algebra program is not ideally suited for these type of problems, where as the previously suggested languages are. In real optimization programs, these are the types of languages that are used.

Occasionally, some theoretical aspects of optimization will be the subject of homework assignments. Solutions and my programs will always be posted in order to help understand the homework. I will make an effort to post solutions in both Matlab and C++, but no promises.

Group work is acceptable on the homework, as long as there are no more than 2 people. Homework may be handed in jointly. It is up to the students to ensure that the work is being evenly distributed. I will happily accept emailed homework, especially when the assignment is computer based. For all computer based assignments, a brief write-up about theory and techniques is expected in addition to the code. Comment all code!

**Midterm**  A midterm test is planned. This test will focus on conceptual and theoretical issues.

**Final Project** There will be no final, but a comprehensive project will be required. This project will require the solution of a challenging optimization problem using the software that you have developed over the course of the semester. The design projects will be presented during the last class of the semester.
3 Academic Integrity

http://www.vpaa.villanova.edu/academicintegrity/code.html

4 Learning Support Services

If you have a disability and need special accommodations, please discuss it with me. Call the Learning Support Office at 610-519-5636 to verify and register.

5 Website

This and other class material will be posted on the website given. Assignments and solutions will not be distributed in class, they will always be posted on the website given above (it is not WebCT). If you do not have a handout, assignment, etc. please check the website before asking.

6 Research

If anyone has work or research related problems that they would like to optimize and would like to talk about the best techniques for approaching this type of problem, feel free to stop by my office and discuss the matter - I’m always interested in new problems.