Course: Math / CS 143M  
Course Title: Numerical Analysis and Scientific Computing (Matrices)

Instructor: Plamen Koev  
Semester: Fall 2011  
Time: MW 7-8:15pm in MH 235

Office: MH 312  
Phone: 4-5175 (my office), 4-5100 (Dept.)

Web page: www.math.sjsu.edu/~koev  
Email: "last name"@math.sjsu.edu

Prerequisites: M129A and a programming language course

Office Hours: MW 6-7pm or by appointment.

Midterm: TBA


Material Covered: Selected material from Chapters 1-5 and 7.

Learning Objectives: To understand common matrix decompositions, algorithms to construct them and applications of these decompositions; to be able to compare algorithms in terms of efficiency, accuracy and reliability; to be able to apply programming skills to mathematical problems; to interpret numerical results and to understand the limits of numerical accuracy; to be able to write a technical report using good English, mathematics and computer science.

Languages used: When I hand out subroutines or discuss code in a specific language I will usually use MATLAB. I will introduce you to MATLAB in class. You may write code in any decent high level language (not Basic). For most assignments it will be a much easier to use MATLAB than a traditional programming language. MATLAB is available on the departmental computers and probably elsewhere in the university. Finally, a student version of Matlab (PC or Mac) is available. Contact Mathworks (www.mathworks.com) for more information.

Computer Access (in MH 221): Please add Math 110L or pay in the department office. Adding Math 110L costs nothing to you if you are a full-time, resident student. During the project we will hold some classes in MH 221.

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 midterm</td>
<td>30%</td>
</tr>
<tr>
<td>Final</td>
<td>50%</td>
</tr>
<tr>
<td>Homework and assignments</td>
<td>20%</td>
</tr>
</tbody>
</table>

The curve is 90/80/70/60 for A/B/C/D (+/-: top/bottom 3% of range).

You will have at least a week’s notice for all assignments. Computing assignments are required in order to pass the course.

Homework: Homework will be collected regularly. Each student will be required to take at least one turn grading a set of homework (or share grading if there aren’t enough assignments). You automatically get a perfect score on any homework set you grade. If your course grade is in doubt homework and other signs of work will count by helping your grade up to a maximum of 2-3% points in the final grade.

Cheating: Cheating on any quiz, exam, or program may result in an F in the course. On programs you can consult with other students on general matters. A copied program is cheating. Also turning in output that is not produced by your program is cheating.

Additional information / requirements please see http://www.sjsu.edu/math/courses/greensheet.