Math 3030: Math Models for Computer Science — Spring 2011  
(Section 005, CRN 10909)

Lecture: 5:30–6:45pm @ 531 General Classroom Building (GCB), Tuesday and Thursday.

Instructor: Yongwei Yao  
Email: yyao@gsu.edu

Office: 766 COE (College of Education)  
Phone: (404)413-6454 (office)

Office Hours: 2:30–3:30pm Tuesday and Thursday (at 766 COE). Or by appointment.


Prerequisites: Math 2212 and MATH 2420 or CSC 2510, with grades of C or higher.

During the first two weeks of the semester the Department of Mathematics and Statistics checks the computer records to determine whether or not each student has met the prerequisites for this course. If you do not have the prerequisites please inform your instructor and change to another course. In case the system finds that you don’t have the prerequisites, you need to drop this course; indeed, you may get dropped automatically.

Calculator policy: Absolutely NO calculator (of any type) is allowed in any in-class tests/exams.

Course description/content: Elements of mathematical modeling including: elements of linear algebra; multivariate functions, vector analysis, operators; probability, distributions of random variables, sampling, statistical inference.

Homework: There will be practice homework assignments, reflecting the materials covered at the time. These will not be collected and graded. However, it is imperative that you complete as many problems as you can and seek help for the remaining problems – as preparation for the graded assignments/exams.

Quizzes: There will be regular take-home quizzes. Such a quiz will usually be announced in class and then e-mailed to you; due date will be shown on the quiz. **Show your step-by-step work. No late quiz is accepted.** Submissions with identical solutions will result in grades of zero (0). Two lowest quiz grades will be dropped. The quiz average weighs 20% of your overall performance.

Projects: You will be three projects assigned during the semester, one for each major topic of the class, to be completed using a CAS (Computer Algebra System) or a programming language of your choice. More specific details will be provided when the projects are assigned. The average of the projects will contribute 10% to your course grade.

Exams: There will be two midterm exams and a final exam, all held in Room 308 CS.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam I</td>
<td>February 08 (Tuesday), 2011</td>
<td>4:00–5:15pm</td>
<td>308 CS</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam II</td>
<td>March 17 (Thursday), 2011</td>
<td>4:00–5:15pm</td>
<td>308 CS</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>April 26 (Tuesday), 2011</td>
<td>4:15–6:45pm</td>
<td>308 CS</td>
<td>30%</td>
</tr>
</tbody>
</table>

All the exams are required, and the final exam is cumulative. Make-up exams will only be allowed in case of extreme emergencies that must be documented, such as medical emergencies. It is the instructor’s role to determine if a specific emergency is a valid one.

(more on the next page)
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Grading Scheme: First the total scores are computed by using the weights as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quizzes</th>
<th>Projects</th>
<th>Midterm Exam I</th>
<th>Midterm Exam II</th>
<th>Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>20%</td>
<td>10%</td>
<td>15%</td>
<td>25%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Then the letter grades will be assigned as follows:

<table>
<thead>
<tr>
<th>score (%)</th>
<th>97——</th>
<th>90–96</th>
<th>87–89</th>
<th>80–86</th>
<th>77–79</th>
<th>70–76</th>
<th>60–69</th>
<th>0–59</th>
</tr>
</thead>
<tbody>
<tr>
<td>letter grade</td>
<td>A+</td>
<td>A</td>
<td>B+</td>
<td>B</td>
<td>C+</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

If the final exam grade (%) is better than your lowest midterm grade (%), then that midterm grade will be replaced by the average of that midterm grade and the final exam grade.

For example, if Quiz = 84%, Project = 92%, Exam 1 = 87, Exam 2 = 72%, Final = 78%, then

Overall Percentage = $0.20 \times 84 + 0.10 \times 92 + 0.15 \times 87 + 0.25 \times 75 + 0.30 \times 78 = 81.2$,

which is a B in terms of letter grade. (Note the replaced grade for Exam 2.)

Attendance: Students are expected to attend all classes, arriving on time and staying for the entire duration of the classes. Attendance may be taken periodically, only for the purpose of recording. After five or more absences a student can be withdrawn from this class. In case of an absence, the student is responsible for making up the materials covered in class. See page 64, item 1334 in http://www.gsu.edu/images/Downloadables/Undergrad_06-07_catalog.pdf

Note: Any student who misses all the classes during the first two weeks can be withdrawn.

Important withdrawal dates:
- Last day to drop a class with full refund: January 14, 2011. You may do this at PAWS.
- Last day to withdraw from term length classes and possibly receive a W: February 25, 2011.
For information about withdrawals, see http://www.gsu.edu/es/withdrawals.html

Important dates:
- Martin Luther King Holiday: January 17 (Monday), 2011
- Spring Break: February 28–March 06, 2011
- Last Day of Classes: April 25 (Monday), 2011

Disruptive behavior: Any disruptive behavior will be handled according to the University’s policy on disruptive behavior found at the following site
http://www2.gsu.edu/~wwdos/codeofconduct_adminpol_a.html
This includes the possibility of withdrawing the student from the class.

Academic (dis)honesty: Academic honesty is expected. Cheating will not be tolerated and will be handled according to the University’s policy on academic honesty found at http://www.gsu.edu/~wwdos/codeofconduct_conpol.html which includes academic as well as disciplinary penalties.

Note: This course syllabus provides a general plan for the course; deviations may be necessary.

Course URL: http://www2.gsu.edu/~matyxy/2011Sp/math3030.html
Relevant information (homework, quizzes, projects, exams, etc.) will be posted there as the course progresses.

Welcome aboard!