Description: This course presents an introduction to computational and mathematical techniques used in modeling, simulating, and analyzing the performance of various systems. In particular, we will discuss random number generation, simulation of queueing and inventory systems, process-interaction and event-driven simulation, Monte Carlo simulation, elementary statistics, discrete and continuous stochastic models, and point and interval estimation. This course is simultaneously theoretical and computational — you can expect to perform mathematical derivations and to construct computer programs in the assignments.

Prerequisites: CMSC 222 and 301, or permission of instructor.


Problem Sets and Labs: A new problem set and/or lab will be assigned each week, based on exercises that will be started in class. Any work submitted after the due date will be considered late, with a 10% deduction per day (i.e., per 24-hour period, not per class day or weekday).

Problem sets and labs collectively represent 40% of your grade. You are encouraged to collaborate with others on these assignments subject to the empty hands policy:

You may freely discuss problem set exercises with other students subject to the restriction that each student must leave the discussion without any written or otherwise recorded material.

Failure to comply with this policy will be treated as an Honor Code violation.

Exams: There will be a midterm take-home exam; it will represent 20% of your grade. There will be a final take-home exam due at the regularly scheduled final exam time; it will represent 20% of your grade. **Collaboration is not permitted on any part of the midterm and final exams.** Evidence of collaboration on either of these two exams will be treated as an Honor Code violation. Relative to the take-home component of the two exams, any printed or online sources that you use, other than your textbook and class notes, must be approved by me in advance and must be properly documented. If you are absent on the day of an exam, you will not be permitted to hand in the exam unless you have made prior accommodations with me.

Final Project: There will be a final group project due at the same time as the final exam. The final project will represent 20% of your grade. More details will be provided as the semester progresses.

Honor Code: All graded materials (problem sets, labs, midterm exam, and final exam) are subject to the conditions of the Honor Code. More specifically,

- Unless provided to you by the instructor of this course, you are not permitted to view or use in any way existing assignments, tests, or solutions in any form, whether they be from a previous offering of this or another course or Internet-available.
- The midterm exam and the final exam must be completed by you without assistance from any other person (other than me), or from any source other than your notes unless pre-approved and properly documented;
- Problem sets, lab assignments, and the final project may be discussed with others subject to the “empty hands” policy, as described above.
- You may not in any way share or sell any of the assignments or materials for this course. The course materials are my creation and belong to me, and on certain assignments I have borrowed (with permission) materials created by other instructors, with appropriate attribution.
- Failure to comply with any of these policies will be treated as an Honor Code violation.

Unless you give me sufficient reason to believe otherwise, I assume that each of you is honorable and will abide by the University’s Honor Code.
Web Page / Email: A web page will be maintained where you will find information pertinent to this course, including source code and data files as appropriate.

http://www.mathcs.richmond.edu/~b-lawson/cmse326/

You are responsible for checking your email and the course web page frequently for updates and/or modifications to assignments, lectures, etc. There will be no associated Blackboard page for this course.

Grading Policy: Final course averages are determined according to the following percentages:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Sets &amp; Labs</td>
<td>40%</td>
</tr>
<tr>
<td>Midterm Problem Set</td>
<td>20%</td>
</tr>
<tr>
<td>Final Problem Set</td>
<td>20%</td>
</tr>
<tr>
<td>Group Project</td>
<td>20%</td>
</tr>
</tbody>
</table>

The scale for determining final letter grades will be at least as generous as the traditional 10-point scale, with +/- assigned as appropriate.

Attendance Policy: Regular attendance is expected for the duration of each class period. In the event that you must miss a class, you are solely responsible for determining any assignments, announcements, and/or lecture material presented in class. When possible, please inform me in advance of your absence.

Religious Holidays: If you foresee a conflict between class requirements and your desire to observe a religious holiday, please contact me as soon as possible to discuss appropriate accommodations.

Disabilities: If you have a disability that may affect your work in this course, please contact me as soon as possible to discuss appropriate accommodations.