Spring 2012

CS 470/670: System Simulation

Mateen M. Rizki
Wright State University - Main Campus, mateen.rizki@wright.edu

Follow this and additional works at: https://corescholar.libraries.wright.edu/cecs_syllabi

Part of the Computer Engineering Commons, and the Computer Sciences Commons

Repository Citation
https://corescholar.libraries.wright.edu/cecs_syllabi/467

This Syllabus is brought to you for free and open access by the College of Engineering & Computer Science at CORE Scholar. It has been accepted for inclusion in Computer Science & Engineering Syllabi by an authorized administrator of CORE Scholar. For more information, please contact corescholar@www.libraries.wright.edu, library-corescholar@wright.edu.
Instructor: Dr. M. M. Rizki  
Office: 303 Russ Engineering  
Hours: Monday and Wednesday 5:30-6:30 PM and by appointment  
Phone: 775-5128  
Email: mateen.rizki@wright.edu

Textbooks:  

Course Requirements:  
Simulation Exercises (2 @ 15%)  
Simulation Project  
Examinations (2 @ 20%)

30%  
30%  
40%

General Policies:  
1. Projects are due at the time posted in Pilot. Assignments not submitted by due date will be accepted up to one week late at a penalty of 25%. The final project must be submitted on the due date -- no late final projects will be accepted.

2. Projects will be graded based on (1) quality of the simulation analysis, (2) correctness of the results, and (3) quality and readability of the code. Code that does not compile or produces serious run time errors will receive a grade of zero.

3. Homework may be assigned periodically. It will not be graded, but similar problems will appear on your examinations so it is to your advantage to attempt each homework problem.

4. Students registering for CS 670 will be asked to perform additional work on each assignment. As always, graduate students are expected to produce superior quality work!

5. Questions, discussion, and debate are strongly encouraged.

Course Outline:  
1. Basic Simulation Concepts  
Simulation Methodologies  
L&K 1.1-1.4, 1.7-1.9  
L&K 2.1-2.4, 2.8

2. Introduction of Python and SimPy  
Handouts

3. Building Valid Simulations  
L&K 5

4. Probabilistic Aspects of Simulation  
Review of Probability  
Random Number Generators  
Random Variates  
L&K 4  
L&K 7  
L&K 8.1, 8.2, 8.3.1-8, 8.3.15-16, 8.4, 8.6

5. Statistical Aspects of Simulation  
Selecting Input Distributions  
Analysis of Output  
L&K 6  
L&K 9.1-9.5

6. Comparing Alternative Configurations  
L&K 10

7. Variance Reduction Techniques  
L&K 11

8. Experimental Design  
L&K 12.1-12.3

9. Simulation Languages  
L&K 3