

CSCE 4423, Computer Systems Modeling, Elective

Catalog Description: Basic concepts of problem analysis, model design, and simulation experiments. A simulation will be introduced and used in this course.

Prerequisites: CSCE 2014 [Programming Foundations II] and (INEG 2313 or STAT 3013) [Applied Statistics and Statistics for Engineers I or Introduction to Probability and Statistics]

Textbook/required material: *Discrete-Event Simulation: A First Course* by L.M. Leemis and S.K. Park, Pearson Education (2006), ISBN 0-13-142917-5

Course learning outcomes: The goal of the class is to provide a better understanding of how systems operate and respond to change by modeling, simulating, and analyzing performance of discrete-event stochastic systems.

Topics covered:

- Modeling, simulating, and analyzing performance of discrete-event stochastic systems
- Random-number generation
- Analyzing experimental data with meaningful statistics
- Next-event simulation
- Discrete and continuous random variables
- Output analysis
- Input modeling

Class/laboratory schedule: Meets either 3 times a week for 50 minutes or 2 times a week for 1 hour 20 minutes for 15 weeks.

Contribution of course to meeting requirements of Computer Engineering Criterion 5: This course prepares students for designing systems that have constraints using knowledge and skills acquired in earlier coursework.

Relationship of course to Computer Engineering Program Student Outcomes: (b) An ability to design and conduct experiments, as well as to analyze and interpret data. (c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. (e) An ability to identify, formulate, and solve engineering problems. (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Relationship of course to Computer Science Program Student Outcomes: (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. (c) An ability to design, implement and evaluate a computer-based system, process, component or program to meet desired needs. (i) An ability to use current techniques, skills, and tools necessary for computing practice.

Prepared by: Dale R. Thompson

Date: 8/14/12

CSCE 4423 – COMPUTER SYSTEMS MODELING (3)
Fall 2012 (Aug. 20-Dec. 14), Undergraduate: CSCE 4423-001 (ISIS #9978)

General Information

- Class website: <http://learn.uark.edu>
- Email distribution list: <http://mailman.uark.edu>
- Time/Location: MWF, 10:30 – 11:20 a.m., JBHT 239
- Instructor: Dale R. Thompson, Ph.D., P.E.
 - o Office hours: <http://comp.uark.edu/~drt/schedule/schedule.html>
 - o Office: JBHT 521
 - o Phone: 575-5090
 - o Email: *drt@uark.edu*

Grading

Course grades will be determined by these weights:

Homework:	30%
Midterm:	20%
Project:	50%

The final class grade will be assigned according to the 10-point scale shown below. The grades may or may not be curved.

A	90 – 100%
B	80 – 89.9%
C	70 – 79.9%
D	60 – 69.9%
F	< 60%

Homework

All assignments will be given with a strict deadline, and students are required to submit their assignments on or before the deadline. Homework will be collected at the start of the class on the due date, and late submissions will not be accepted. In case of extenuating circumstances, students are advised to contact the professor as soon as practical. You are encouraged to discuss the course and the assignments with each other; however, your exams and homework should be your own work.

Attendance

Attendance will be taken. Attendance will be used as a deciding factor when the final average is between grades. For example, if you have an average of 89.5 and you have attended a high percentage of the classes it may be rounded up to an "A". If you have an average of 89.5 and you have attended a small percentage of the classes it will probably still be a "B".

Academic Dishonesty Policy

As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.

Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at <http://provost.uark.edu/>. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.