

Syllabus
CS581 – Modeling and Simulation I – Fall 2009
Tech Hall N308, T, Th 12:45-2:05

Instructor: Dr. Glenn Cox **Email:** gcox@cs.uah.edu
Office: N341 / 824-6433 **Class page:** www.cs.uah.edu/~gcox/581/581.html
Office Hours: W 12-2 and Th 10-12 (or by appt)

Description: An introduction to non-real-time modeling and simulation for analysis of computer software and hardware. Application of simulation analysis to design and development of computer software and systems including modeling of computer and software components. Design, coding and use of discrete event simulation software.

Class Prereqs: CS214, CS221, MA244, MA 385 or equiv, **Proficiency in programming**

Text: **Required:** Banks, et al, Discrete-Event System Simulation
Recommended: Kelton, Sadowski, Sadowski, Simulation with Arena (includes Arena Software)
Reference: Law and Kelton, Simulation Modeling and Analysis.
Jain, The Art of Computer Systems Performance Analysis

Grading:	Midterm exam..... 35%	A 90-100
	Final Exam..... 35%	B 80-89
	Homework and Projects 30%	C 70-79
	Unexcused late homework, 50% off per day	D 60-69
		F <60

Lecture Plan (subject to change):

	Topic	Reading (Banks)
20 Aug	Class Orientation, Background	
25 Aug	Intro to M&S of Software and Hardware	Ch 1
27 Aug	""	
1 Sep	Discrete Event Simulation	Ch 2
3 Sep	""	
8 Sep	Programming Discrete Event simulators	Ch 3
10 Sep	""	
15 Sep	Off-the-shelf Simulation software	Ch 4
17 Sep	Statistical Refresher	Ch 5
22 Sep	""	
24 Sep	Queuing systems	Ch 6
29 Sep	""	
1 Oct	MIDTERM EXAM	
6 Oct	Random Number Generators	Ch 7
8 Oct	Holiday	
13 Oct	Random Number Generators	
15 Oct	Generating Random Variates	Ch 8
20 Oct	""	
22 Oct	Representing Input Data	Ch 9
27 Oct	""	
29 Oct	Verification, Validation	Ch 10
3 Nov	""	
5 Nov	Analyzing output data	Ch 11
10 Nov	""	
12 Nov	Comparing Alternatives	Ch 12
17 Nov	""	
19 Nov	Special considerations in simulating computer systems	Ch 14
24 Nov	""	
26 Nov	Holiday	
1 Dec	Review	
3-Dec	Final exam 11:30-2:00	

UAH COMPUTER SCIENCE DEPARTMENT POLICIES AND PROCEDURES

1. Responsibilities of the teacher

- Provide a detailed syllabus. This syllabus should list office hours, course objectives, textbooks, references, prerequisites, and grading policy/method of assessment.
- Come to class well prepared, on time, and make full use of the class time.
- Provide timely and adequate feedback on grades. Return graded material promptly.
- Conduct final exam at the time designated in the class schedule. Never post grades.
- Not assign **new** work (i.e. not listed on syllabus) that is due in last two weeks of classes.
- Avoid leaving the examination room without a proctor. Provide paper for exams.
- Make reasonable use of the assigned textbook.
- Check students have proper prerequisites. Instructor does not waive assigned prerequisites.
- **Report all incidences of academic misconduct to the Department and VP for Student Affairs**

2. Responsibilities of the student (see also, Student Handbook Article II)

- 1) Come to class with proper prerequisites, well prepared, on time, and make full use of class time.
- 2) Provide adequate notice of anticipated absences and take full responsibility for finding out about missed work, announcements, and assignments.
- 3) Submit assessment material on time and submit **only your own work**. (see integrity)
- 4) Do not allow other students to copy your work.
- 5) Read and understand the syllabus and follow announced policies.

3. Integrity

We expect CS instructors and students to conduct themselves in a professional manner. Students are subject to all the provisions in the UAH Code of Student Conduct, which is available free from the Office of Admissions and Records. Information on plagiarism and other forms of misconduct is presented in the **Student Handbook Article III**. *Departments are obliged to report all student misconduct to the Office of Student Affairs.*

4. Complaint Procedure

If you have difficulties or complaints related to this course, your first action should be to discuss them with your instructor. If such a discussion would be uncomfortable for you or fails to resolve your difficulties, you should ask for a meeting with the Chair of the Computer Science Department in Technology Hall N-300, info@cs.uah.edu, telephone 824-6088. If you are still unsatisfied, you should discuss the matter with Dr. Dan Rochowiak, Associate Dean of the College of Science.

5. Students with disabilities

Your instructor would like to hear from anyone who has a disability that may require a modification of seating, testing, or other class procedures. Please see instructor after class or during office hours to discuss appropriate modifications. You should also contact Student Development Services in UC 113 (Ph. 824 6203) for further assistance.

6. Student computer account

Students enrolled in any CS course are entitled to an account on the departmental computer network. Use of such an account is subject to departmental and university policies. To apply for an account, and see the current policies, go to the departmental web site at <http://www.cs.uah.edu/account/>

7. Examination policy

In response to past student complaints about problems during examinations, the Computer Science Department has developed the following guidelines for in-class examinations in all courses.

1. Come to the exam prepared to complete it without a break. If you think you will need a break, please inform the proctor before the exam if possible.
2. Do not communicate with other students. Talk only to the instructor.
3. Whenever you leave the exam room turn in your exam.
4. Use only the paper provided by the instructor for all writing.
5. If assigned a specific seat, remain in that seat.
6. Unless specifically permitted by the instructor, use no books or other reference materials. Do not bring calculators, computers, pocket-organizers, cell phones, pagers, or other electronic devices to the exam.

Plagiarism Policy

Plagiarism Defined

Plagiarism is passing off another person's words, programs, artwork, or thoughts as your own. Plagiarism is theft and is ethically wrong.

The most blatant type of plagiarism involves copying another person's work without giving credit. For example, if you write a paper and include a sentence from another paper without referencing the other paper, you are plagiarizing. This applies to any sort of intellectual product including words, computer programs, and artwork and graphics.

Even if you change or paraphrase the words, but still use someone's *ideas* without giving them credit, you are plagiarizing. Obviously, this doesn't apply to ideas that "everybody knows." But if someone else has had a distinctive idea, it is wrong to act as if it is your original thought. When in doubt, give credit.

See <http://www.english.udel.edu/wc/oldsite/plagiarism.html> for some examples of types of plagiarism in technical reports. Some common questions about citing references are answered in <http://www.utoronto.ca/writing/plagsep.html>.

"Since computer programs are often what we are involved with in this department, I will clarify what constitutes plagiarism in a computer program. Here are some examples: downloading a program from the Internet and turning it in as your own work is plagiarism. Copying a program from someone else in this course, this term, and turning it in as your own work is plagiarism. Copying a program from someone else who took this course or any other course at this university or any other university this term or any other term, and turning it in as your own work is plagiarism. Having someone else write the program for you is plagiarism. Copying an algorithm or code from a textbook or anywhere else and turning it in as your own work is plagiarism, unless it has been specifically allowed by the instructor. If this is specifically allowed by the instructor, then full credit has to be given to the textbook in a comment header at the top of your program." [1]

Avoiding Plagiarism

The best way to avoid plagiarism is to be extremely careful to cite the sources of your information. It's much better to cite too much than it is to cite too little -- no one ever lost points in one of my classes for having too many citations.

When you write a paper, there are two general things you must do.

- (1) Your list of references must include the source of the information.
- (2) You must cite the reference at each place it is used in the text.

In addition, anytime you quote verbatim from a source, you must enclose the quote in quote marks (for long quotes, you can indent the text instead of using quote marks).

If you have questions about the correct way to incorporate references, see the information on the IEEE citation style at <http://www.ecf.utoronto.ca/~writing/handbook-docum1b.html>

Penalties

The **LIGHTEST** penalty I give for plagiarism is a zero on the assignment in which you plagiarized. Serious offenses earn much more serious penalties (see Article III of the UAH Student Handbook and the "Integrity" section of the CS department Policies and Procedures). Note that UAH maintains a central database of students caught cheating so that serial plagiarizing can be identified. Also note that UAH subscribes to services that automatically check student papers against a national database of previous papers (see note).

Some Frequently Asked Questions about Plagiarism

“Can Dr. Cox find out if I plagiarize?”

Yep. I've been doing research in the computer field for nearly 30 years. Believe it or not, I know how to use the Internet, the Library, the hundred or so reference texts on my bookshelves, and two file cabinets full of old papers. If you can find a source to copy, I can find it too. Assume you will be caught if I try.

“OK, then. Will Dr. Cox TRY TO find out if I plagiarize?”

Bet on it. I hate plagiarism. Hate it. I want you to learn to think for yourself. When you plagiarize, you're not thinking – you're just imitating. Another reason that I will not tolerate plagiarism is that it is grossly unfair to the majority of students who struggle and work honestly. I check every submission for plagiarism as a matter of course.

“It sounds like you're saying it's OK to copy extensively from a source as long as I cite it properly”

Don't be silly. It's true that if your paper is one long properly-cited quote, I probably won't give you a zero for plagiarism; I'll give you a zero for not putting any effort into it. Remember, you're supposed to be thinking, not merely copying.

“If I include the source in my list of references, do I really need to put all of the citations in the text?”

Yes, it's the only approved form. And it makes sense. What happens if a reader sees a fact in your paper that she wants to learn more about? How will she know where to look if there's no citation with the fact? Do you expect her to go line-by-line through every one of your references to find it?

“What about code that I reuse from another program?”

It's just the same. Except when it is prohibited, code reuse is legitimate as long as you give the original author credit in the comments or other documentation. If you don't give credit, it's plagiarism. I will tell you when code re-use is permitted in class assignments. If I don't explicitly permit code re-use, the assigned program is expected to be your own, new work.

“English isn't my native language and I can't express my thoughts in it. If I don't copy someone else's words, I'll lose points for grammar.”

That's true. Normally, I'll count off between 1% and 5% for bad grammar. I count off 100% for plagiarism. You do the math.

REFERENCE

[1] L. Etzkorn, Private Communication, August 2002.

NOTE

UAH is committed to the fundamental values of preserving academic honesty as defined in the Student Handbook (7.III.A). The instructor reserves the right to utilize electronic means to help prevent plagiarism. Students agree that by taking this course all assignments are subject to submission for textual similarity review to Turnitin.com.

Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. The terms that apply to the University's use of the Turnitin.com service, as well as additional information about the company, are described at www.uah.edu/library/turnitin.