

Syllabus for CS 337 - Algorithms and Data Structures - Fall 2009
CRN 10484 - 2:00 pm TTh - SH 203M
Dr. Joe A. Stickles, Jr.

Office: SH 203C
Office Hours: 8-9:50 MTWF, by appointment, or any other time
I am in my office
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Textbook: *Data Structures and Algorithms in Java*, 4th edition
by Goodrich and Tamassia

Catalog Description: Study of algorithm analysis and data structures.

Course Objectives: After successfully completing CS 337, students will be able to (1) select appropriate data structures for particular tasks, (2) implement the fundamental data structures – stacks, queues, linked lists, trees, heaps and graphs in Java, (3) select appropriate sorting algorithms for particular tasks, and (4) explain and utilize divide-and-conquer, backtracking, and other “big-name” algorithms.

Instruction: All days will begin with a hearty “Hello!” from your instructor and a short discussion on how things are going. Most days will include a lecture of new material. Many examples and exercises will be worked during this time. Class discussions on topics will also occur frequently, and students are greatly encouraged to ask frequent questions during this lecture time.

Prerequisites: CS 230

Expectations: Here are some of the things you can expect from me:

- An occasional bad joke (usually a math pun) to lighten the mood
- Enthusiasm for the material
- A desire to help you any way I can in and out of class

Here are some of the things I expect from you:

- High standards for your work
- High standards for my teaching
- Hard work
- Having fun

Departmental Goals: The goals of the Department of Mathematics and Computer Science specifically reflect the University goal of “preparing students for democratic citizenship in a global environment.” The departmental learning goals that specifically apply to this course are:

1. Be able to write, modify and debug programs in Java, C++, and at least one other programming language.
2. Understand the mathematical theory of computer science and how that theory is manifested in computer science practice.

Grading: The weights in determining your final grade are as follows:

Homework and programs	30%	Exam 2	20%
Exam 1	20%	Final Exam	30%

Homework will be assigned regularly, but not all of the assigned homework will be collected and graded. It will be made clear which problems are to be turned in and on what day these problems are due. HOWEVER, you should do all the homework and are responsible for all of the problems covered. Many questions on the exams will be strikingly similar to those given in the homework. Programming assignments will vary by length and by difficulty, so the amount of time allotted to complete these assignment will vary as well. Exams will be given in-class, though there may be some take-home aspects of a particular exam (e.g. a programming component of an exam) as circumstances warrant. The dates of the exams will be announced at least one week in advance.

Grading Scale: The grading scale is anticipated to be as follows.

Percentage (x) of Points Earned	Grade	Percentage (x) of Points Earned	Grade
$90\% \leq x$	A	$60\% \leq x < 69\%$	D
$80\% \leq x < 90\%$	B	$60\% > x$	F
$70\% \leq x < 79\%$	C		

I may change the cutoffs to be lower than they appear, but they will be no higher. So, if you earn a 90% for the class, you will receive an A. Plus and minus grades will not be assigned until the end of the semester and will be used only in borderline situations. Participation and attendance are not explicit parts of your grade. However, in borderline cases I may bump you up to the next grade level if you have been to class and participated regularly. For example, you have a 78% at the end of the semester. You have been in class every day and participated regularly in class discussions. I would be inclined to assign you a grade of B- instead of C+. I will NOT lower anyone's grade due to lack of attendance or participation. For example, if you earn an 80% in this class, you will get a B, no matter what your attendance record. Of course, my hope is that class will be so much fun you would not dream of missing it!

Make-ups: No late homework or programs will be accepted, and no make-ups for exams will be given **for any reason**. If you miss class for a documented university approved excused absence (e.g., sickness requiring you to see a doctor, death in the family, etc.), you will be excused from turning in any homework or programming assignment (except for projects or papers) due that day or from taking an exam you missed. In these cases, you MUST e-mail or call me BEFORE class begins to let me know of your situation. In case you miss an exam, your score on the final exam will replace that score. Please note that a university-sponsored trip does NOT fall under these guidelines. If you know you are to miss class for any reason, you MUST turn-in any assignment that will be due while you are gone BEFORE you leave, and you MUST take any exam you will miss BEFORE leaving.

Disability Accommodation Policy: Please address any special needs or special accommodations with me at the beginning of the semester or as soon as you become aware of your needs. If you are seeking classroom accommodations under the Americans with Disabilities Act, you should submit your documentation to the Office of Student Success at Millikin University, currently located in Staley Library 014.

Academic Honesty Policy: All students are expected to uphold professional standards for academic honesty and integrity in their research, writing, and related performances. Academic honesty is the standard we expect from all students. Read the Student Handbook for further details about offenses involving academic integrity at: <http://www.millikin.edu/handbook/>. Staley Library also hosts a web site on Preventing Plagiarism, which includes the complete university policy. It is located at: <http://www.millikin.edu/staley/services/instruction/Pages/plagiarism-faculty.aspx>. Visit and carefully read the Preventing Plagiarism web site.

The Faculty has the right and the responsibility to hold students to high ethical standards in conduct and in works performed, as befits a scholar at the university. Faculty members have the responsibility to investigate all suspected breaches of academic integrity that arise in their courses. They will make the determination as to whether the student violated the Academic Integrity Policy. Should the faculty member determine that the violation was intentional and egregious, he or she will decide the consequences, taking into account the severity and circumstances surrounding the violation, and will inform the student in writing, forwarding a copy of the letter to the Registrar and to the Dean of Student Development.

This letter will be destroyed when the student graduates from the University unless a second breach of integrity occurs, or unless the first instance is of sufficient magnitude to result in failure of the course, with an attendant XF grade recorded in the transcript. If an XF is assigned for the course, the faculty letter of explanation becomes a permanent part of the student's record. If a second violation occurs subsequent to the first breach of integrity, the Dean of Student Development will begin disciplinary and judicial processes of the University, as outlined in the Student Handbook.

If a student receives an XF for a course due to academic dishonesty, this remains as a permanent grade and cannot be removed from the transcript. However, students may repeat the course for credit toward graduation. Some programs and majors have more explicit ethical standards, which supersede this Policy, and violation of which may result in dismissal from some programs or majors within the University. If you have difficulty with any assignment in this course, please see me rather than consider academic dishonesty.

Studying: You will need at least 9 hours per week of study in addition to the 3 contact hours to aspire to a good grade in this course. Please give yourself even more time than that to study for exams. The course moves at warp speed, so it is very hard to catch up if you get behind. PLEASE ask questions if you need help. That is what I am here for. Also, it is EXTREMELY beneficial to read the book. This is not a programming course per se. I assume that you have learned the basics of JAVA programming, so I will lecture on the data structures and algorithms in class; I will not be lecturing on the specific JAVA implementation. I cannot encourage you enough to come to my office hours to supplement the material covered during lecture and to ask questions about the homework. I also encourage you to talk with each other. This is especially true when debugging a program - the more eyes that look at the code, the more likely it is you will find the error.

Final Notes: You need to come to class regularly and participate, do your homework, read the book, and asks lots of questions. I AM HERE TO HELP!!! Ask questions in class and come to my office hours. Stop by my office just to chat about the weather, baseball (preferably about the Cubs), or life in general if you like. Above all, I want us to have a fun semester of learning algorithms and data structures!

Students are required to keep abreast of changes to this syllabus.