Chaminade University

Computer Science and Computer Information Systems

Dr. Martins

Syllabus - CS350: Data Structures

1. General Information

Classroom: *H121*	**Email:** *pmartins@chaminade.edu*
Instructor: *Dr. Martins*	**Office Hours:** *T,Th: 11:00-11:50, F:2:00-4:00*
Office Number: *Keiffer #26*	*Or by appointment. Send me an email*
Telephone: *(808) 739-4601*	**Fax:** *(808) 440-4249*
Lecture Hours: *M,W,F: 11:00 to 11:50 am*	**Course Credit:** *3*
Prerequisites: CS240	**Section:** *Fall 2004*

Web site: http://acad.chaminade.edu/faculty/pmartins

2. Course Description

This course will cover the basic concepts and techniques of data structures and algorithm analysis. C will be used as the programming language. Students should have programming experience, typically two semesters or the equivalent of a structured programming language, such as C, and including at least some exposure to C++.

3. Learning Outcomes

- Understand and be able to use the following basic data structures: lists, stacks, queues, priority queues, trees (specifically B-Trees and Binary Trees).
- Make sure you know and understand the code behind the structures quite well, as you could (and probably will) be asked to recall some of it in the exam.
- Have knowledge, and be able to demonstrate understanding, of searching and sorting algorithms that can be applied to data structures.
- Be able to discuss the implications of choices for implementing basic data structures using arrays or linked lists.
- Be able to discuss how the choice of data structure and design of an algorithm can impact the performance of programs.
- Remember the performance for the structures, in terms of 'big O' notation.

4. Topics

- Algorithm analysis
- Lists, stacks and queues
- Binary trees
- Non-binary trees
- Sorting and Searching

5. Textbook

Title	ISBN#	Author	Priority
A Practical Introduction to Data Structures and Algorithm Analysis	0-13-028446-7	Clifford A. Shaffer	Required

6. Evaluation

Evaluation	# Points	Tentative Dates
First test (FT)	0-15	09/29/04
Second test (ST)	0-15	10/27/04
Final exam (FE)	0-20	12/08/04
Quizzes (QZ)	0-30	random
Assignments (AS)	0-20	to be determined

- The final grade (FG) will be determined as follows: FG = FT+ST+FE+QZ+AS. Each exam will be graded according to the scale above.
- For example, a student that obtained 15 points in the first test, 13 in the second test, a total of 19 points in the final exam, 25 in the quizzes, and 20 points in assignments will accumulate a total of 92 points (meaning a final grade A).
- Quizzes will be the mean average of all quizzes taken, scaled from 0-30. It can be calculated as QZ = 3 * (Q1 + Q2 + Q3 +...Qn)/n, where n is the total number of quizzes in this course. Each quiz will be graded in a scale from 0-10.
- For example, if there are five quizzes, then QZ = 3*(Q1 + Q2 + Q3 + Q4 + Q5)/5. The same applies to the calculation of your grade on assignments.

7. Grading

Grade	Interpretation	Points
A	Unusual degree of intellectual initiative.	90-100
B	Superior work done in a consistent and intellectual manner.	80-89
C	Average grade indicating a competent grasp of subject matter.	70-79
D	Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work.	60-69
F	Failed to grasp the minimum subject matter; no credits given.	00-59

8. Student Rights and Responsibilities

Please refer to the student rights and responsibilities in the Student Handbook.

9. Special Needs

If you are entitled to extra accommodation for any reason (such as disability), we will make every reasonable attempt to accommodate you. However, it is your responsibility to discuss this with the instructor at the beginning of the course.

10. Attendance

Students are expected to attend every lecture. Role will be taken at each class. Missing two classes in a row without prior arrangement will result in the student being reported.

11. Remarks

Please refer to the course policies on exams and assignments for more details concerning exams, quizzes, projects and labs. The contents of this syllabus can be changed with advance notification; Pop quiz may be given at any time without advance announcement.

Last updated: 08/22/2004 18:40:04 -1000

Chaminade University
Computer Science and Computer Information Systems
Dr. Martins

Policies on Assignments

All assignments are due on the day indicated on them and must be turned in at the end or beginning of the class directly to myself. Late submissions without a substantial reason such as illness will generally be subject to penalties as follows:

Same day as due but after desired time	3%
Next day	10%
Two to four days	20%
Five days or more	50%

1. There are certain expectations concerning the format and substance of assignments. They will be assessed based on the following criteria:

   - Comprehensiveness. Elaborate as much as you can on the issues or topics raised. Avoid giving short, incomplete or incomprehensive answers.
   - Originality. When formulating your answers, use your creativity (your own words, statements, programs etc..) i.e. avoid paraphrasing the text book.
   - Correction. Needless to say, the ideal answer will be correct from a logical viewpoint.
   - Organization. The structure, organization and clarity of the material that you present (program or document) is also part of the criteria for assessment and will also be considered in grading. Only electronic document files are accepted - no handwriting please.

A major requirement of your programs is their coverage. No credit will be given for programs that cannot be compiled or that do not work on any of the test cases. Beyond this, a significant portion of the credit will be determined by how many of the test cases, and also which of them, your program handles correctly.

Plagiarism. While informal discussion is encouraged, students are expected to do their own work. Copying from each other or from published sources is prohibited, including "cut and paste" from websites. The penalty for copying on assignments is: A zero mark for that item of evaluation for the first time, and an F for the course for the second occurrence.

Last Modified: Wednesday August 25, 2004 09:46:18

Chaminade University

Computer Science and Computer Information Systems

Dr. Martins

Policies on Exams

Missed exams will not be covered with extra exams or make up exams. If you miss any exam due to unforeseen events, you must submit to the instructor a letter justifying your absence within 48 hours of the date of the exam. Grade 0 (zero) will be given if proper justification is not submitted.

Students are not allowed to do exams before or after the set date. You know the date of all your exams, therefore it is expected that you organize your trips around these dates.

Upon receiving your graded exam you should check for any discrepancies. Complaints will not be accepted after you leave the classroom or if the exam was originally written using a pencil. If a discrepancy is found the entire exam will be revised and not only the problem found. A revision of an exam may increase or lower your grade.

You always have the entire class time to answer the exam. You should not expect any extension to this time.

Students are expected to do their own exam. Copying from each other or from published sources is prohibited. The penalty for copying on tests, exams or quizzes is: A zero mark for that item of evaluation for the first time, and an F for the course for the second occurrence.

Last Modified: Wednesday August 25, 2004 09:43:20