Data Structures
CSC 311, Fall 2016

Department of Computer Science
California State University, Dominguez Hills

Syllabus

1. General Information

Class Time: TTh, 5:30 - 6:45 PM
Class Location: SAC 2102
Prerequisites: CSC 123 (Intro to CS and Programming), MAT 281 (Discrete Math) and their prerequisites, with grade C or better.

Professor: Dr. Amlan Chatterjee
Email: achatterjee@csudh.edu
Class home page: http://toro.csudh.edu
Office Phone: 310-243-3240
Office Hours: All office hours are held in NSM E-113 during the following days and by appointment through email.

Day	Time
Tuesday	3:30 - 5:00 PM
Thursday	8:45 - 9:45 AM

Office Phone: 310-243-3240

Textbook: This course is part of the Affordable Learning Solutions Open Textbook project. The scope of the course is covered by: Data Structures and Algorithm Analysis, Edition 3.2 Java version, by Clifford A. Shaffer. This textbook is made available by the author with information posted on the history of updates at http://people.cs.vt.edu/shaffer/Book/.
The url for textbook access is http://people.cs.vt.edu/shaffer/Book/JAVA3elatest.pdf.

The professor reserves the right to adjust the examination, workload and schedule contained in this syllabus as necessary during the semester. Students will be informed of any changes to this syllabus in class.

Computer Information Literacy Expectations: It is expected that the student will:

- Use Microsoft Word for word processing unless otherwise approved by the instructor

- Be familiar with using email as a communication tool and check your official campus email account at least every other day

- Be able to access websites and online course materials which may require Flash and other plug-ins

- Use the library databases to find articles, journals, books, databases and other materials

- Be able to create an effective PowerPoint presentation

- Be able to record audio (ideally video) to share with the instructor via the web

- Have regular access to a computer and internet access for the term of this course

2. <u>Topics to be covered</u>

Overview, Measure of Algorithm's complexity, Arrays, Linked List, Stacks, Queues, Recursion, Sorting, Trees, Hash Tables, Graphs

Student Learning Outcomes:

1. An ability to analyze a problem, and identify and determine the computing requirements appropriate to its solutions

2. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs

3. An ability to use current techniques, skills and tools necessary for computing practice

4. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices

3. <u>Course Policies</u>

Class Attendance: Class attendance is important because concepts and examples that are not in the text book will be discussed. Students are responsible for everything that is announced in class.

Class Email Alias: Urgent announcements will be sent through email. It is the student's responsibility to have university supplied email account forwarded to the location where the student reads email. Students are responsible for reading emails within 24 hours. A test message will be sent out by the instructor during the first week of class. If the student does not receive this message, it is the student's responsibility to get the problem resolved. For assistance in accomplishing any of these tasks, contact (310)243–2500.

Examinations: There will be two midterms and a final examination. University issued Identification Card is required to take any exam. The midterm examinations will be during class time. Missing an examination without a previously approved excuse will result in a grade of zero for that examination, and a F grade for the course. If an examination is missed for a verifiable, documented, and approved reason the percentage of the grade coming from the final examination will be increased accordingly. Makeup examinations are only available when required by University policy, in other words, almost never.

Final Examination: The final is comprehensive; no final examinations can be given early, except as required by University policy.

Quizzes: A number of short quizzes will be given in class during the semester. Quizzes be announced either one lecture ahead or via email up to a day before the quiz. It is the responsibility of the student to be aware of all announcements made during the lectures.

Extra Credit: The instructor may assign extra credit assignments at any point during the semester.

Academic Integrity: Students are reminded of the university policy with regard to scholastic honesty. Academic integrity is of central importance in this and every other course at CSUDH. You are obliged to consult the appropriate sections of the University Catalog and obey all rules and regulations imposed by the University relevant to its lawful missions, processes, and functions. All work turned in by a student for a grade must be the students' own work. In this course, submission for credit of any assignment, program, test, or examination that is not the student's original work or contains portions of someone else's work (friend/tutor) without being clearly and specifically identified as such, as well as cheating on tests or examination, are violations that will automatically result in a F grade in the course and university disciplinary action.

1. Do not show another student a copy of your homework or projects before the submission deadline.

2. Do not email your project to another student, even if they promise they will not copy it.

3. The penalties for permitting your work to be copied are the same as the penalties for copying someone else's work.

4. If you choose to do your work on your computer, make sure that your computer account is properly protected. Use a good password, and do not give your friends access to your account or your computer system.

5. Do not leave printouts, or thumb drives around a laboratory where others might access them.

Electronics Device Usage: During exams/quizzes using any kind of unapproved electronic devices will result in automatic failure for the course (this includes checking messages on the phone from your friend); if there is an emergency inform the instructor.

CSUDH Academic Integrity policies are listed in the Catalog. Students are supposed to know what they are, including definitions of cheating, plagiarism, and dishonesty. The following link can be referred for additional information: http://www4.csudh.edu/student-rights/academic-integrity/.

Student Academic Appeal Process: Authority and responsibility for assigning grades to students rests with the faculty. A grade appeal is permitted when a student can show clear evidence that a grade was contrary to procedures as specified in the course syllabus, was based on prejudice, was capricious, or was the result of computational or clerical error. The presumption is that the grades assigned are correct until there is a clear demonstration otherwise. The burden of proof is heavy, and it rests with the student who is appealing.

Incompletes: The grade of I is intended for the rare circumstance when a student who has been successful in a class has an unexpected event occur shortly before the end of the class. I will not consider giving a student a grade of I unless the following three conditions have been met.

1. It is within two weeks of the end of the semester.

2. The student has a grade of C or better in the class.

3. The reason that the student cannot complete the class is properly documented and compelling.

Americans with Disabilities Act: CSUDH adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, I encourage you to register with Students disAbility Resource Center and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the Students disAbility Resource Center. For information call (310) 243-3660 or to use the Telecommunications Device for the Deaf, call (310) 243-2028 or go to: http://www4.csudh.edu/dss/ or email dss@csudh.edu.

Behavioral Standards: Disruptions of class will not be permitted. Examples of disruptive behavior include:

- Allowing a cell phone or pager to repeatedly beep audibly.

- Playing music or computer games during class in such a way that they are visible or audible to other class members.

- Exhibiting erratic or irrational behavior.

- Behavior that distracts the class from the subject matter or discussion.

- Making physical or verbal threats to a faculty member, teaching assistant, or class member.

- Refusal to comply with faculty direction.

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. The instructor may require a student responsible for disruptive behavior to leave class pending discussion and resolution of the problem and may also report a disruptive student to the Student Affairs Office (WH A-410, 310-243-3784) for disciplinary action.

The contents of course material provided by the instructor, the links contained therein directly and indirectly, and the contents of the said links, are copyrighted. They are provided exclusively for non-profit educational use by the students currently enrolled in this course and for the duration of this semester. No other use or any use by others is allowed without authorization of the instructor in this course and copyright holder(s). No videotaping or recording without instructors's prior permission is allowed in class.

4. Assignments - Projects

Language: We will be using the Java programming language.

Sharing Resources: Office hours can become very busy immediately before a project assignment is due. While the instructor will make reasonable efforts to meet the needs of as many students as possible, it is often impossible to fully meet the needs of all students during this busy period of time. For example, if there are ten students during a given office hour, each student could expect to receive about six minutes of help. This limited amount of help may not be sufficient. Students who wait until the last minute to get help on projects or homework may have to hire a tutor to get extended help on projects.

Projects: Incomplete projects may be turned in for partial credit.
- Projects which do not compile will receive no credit.
- If code for some portion of the project introduces errors that cannot be resolved, comment out that portion to receive credit for the logic.

Project Submission: Projects are due by 11:59 P.M. on the selected due date by uploading the project files to the Blackboard course home page. Late projects are not accepted. Failure to submit 2 or more projects will automatically result in a F grade for the course.

5. Evaluation

Grading Components: There are 6 components to the course grade as shown in Table 1.

Component	Percent
Lecture Assignments	4
Quizzes	8
Projects	15
Midterm I	18
Midterm II	20
Final	35

Table 1: Course Grade Components

The grading scale will be no higher than as shown in Table 2. It may be lower at the discretion of the instructor.

Grading & Grade Corrections: A lot of time is spend in grading student work. Please take the time to review the grading to maximize your learning. After assignments have been returned, there is a one

Grade	Percent
A	92.0+
A-	$88.0 - 91.9$
B+	$84.0 - 87.9$
B	$80.0 - 83.9$
B-	$75.0 - 79.9$
C+	$70.0 - 74.9$
C	$65.0 - 69.9$
C-	$60.0 - 64.9$
D+	$55.0 - 59.9$
D	$50.0 - 54.9$
F	Otherwise

Table 2: Final Grade Calculations

week period of time when grades can be disputed. After this time, the grades are final even if they are found to be in error. If there is a dispute about the grading of an examination problem, you may stay after class the day the tests are returned to discuss it. If you cannot stay at this time, return the paper to the instructor and stop by during the office hours. Once a test has been removed from the classroom after it has been returned, the grade is final and will not be changed, even if it is found to be in error. Demos for grading projects are required for the course; information about signing up for demo slots will be provided after project submission deadlines.

Borderline Grade Decisions:: Although it would be preferable that all grades are cleanly decided, it is usually the case that a few final course grades are decided by only a few points. The following method will be used for determining grades in these difficult cases. A grade is a borderline grade if it is within one point of the next higher grade. Therefore, grades like 69.1 and 74.6 are borderline grades, but grades like 70.8 and 82.1 are not. The grade on the final examination will be used to determine borderline grades. If the grade on the final is below the threshold for the higher grade, the lower grade will be given. If the grade on the final is above the threshold for the higher grade, the higher grade will be given.

6. <u>Tentative Schedule</u>

Week	Topic
Week 1-2	Introduction & Complexity of Algorithms
Week 2-3	Arrays
Week 3-4	Stacks
Week 5-6	Linked List
Week 7	Review and Midterm Test I
Week 7-8	Queue
Week 8-9	Recursion
Week 10-11	Sorting
Week 12	Review and Midterm Test II
Week 13	Trees
Week 14	Hash Tables
Week 15	Graphs

Important Dates: This is a partial list for quick reference only. Check University approved Academic Calendar for an exhaustive list.