

Course Syllabus

Course Information

Course: 3345, Section 502, Days: T/Th 7-8:15, Fall 2016

Course Title:

Data Structures and Introduction to Algorithm Analysis

Professor Contact Information

Alexander Cornelius, Ph.D.

Phone: 972-883-4523

Email: anc160530@utdallas.edu

Office: ECSS 4.403

Hours: T/Th 5:45-6:45 and by arrangement.

Email is the best way to reach me. The phone is for the office, and it is a shared office. Office hours are subject to change.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisites: CE/CS/TE 2305 with a grade of C or better, CE/CS/TE 2336 with a grade of C or better.

Prerequisite or co-requisite: CS/SE 3341 or ENGR 3341.

Course Description

Analysis of algorithms including time complexity and Big-O notation. Analysis of stacks, queues, and trees, including B-trees. Heaps, hashing, and advanced sorting techniques. Disjoint sets and graphs. Course emphasizes design and implementation.

Student Learning Objectives/Outcomes

Ability to use/analyze:

- 1) Asymptotic notations, recurrences, algorithm analysis
- 2) Lists, stacks, queues, hashing, priority queues
- 3) Binary search trees, Balanced binary search trees
- 4) Graphs, Depth-first search, Topological ordering
- 5) Breadth-first search, Dijkstra's algorithm
- 6) Algorithms of Prim and Kruskal, Disjoint-set Union-Find problem

Required Textbooks and Materials

Data Structures and Algorithm Analysis in Java, (Third Edition), by Mark Allen Weiss, Published by Addison-Wesley, 2011, ISBN-10: 0132576279, ISBN-13: 978-0132576277

Suggested Course Materials

Extra material may be placed on eLearning.

Assignments & Academic Calendar

Aug 23, 25	Introduction, Chapter 1
Aug 30, Sept 1	Chapter 1, Chapter 2
Sep 6, 8	Chapter2, Chapter 3
Sep 13, 15	Chapter 3
Sep 20, 22	Chapter 3, Review
Sep 27, 29	Exam 1 (ch. 1-3), Chapter 4
Oct 4, 6	Chapter 4
Oct 11, 13	Chapter 5
Oct 18, 20	Chapter 6
Oct 25, 27	Chapter 6, Review
Nov 1, 3	Exam 2 (ch. 4-6),Chapter 7
Nov 8, 10	Chapter 7
Nov 15, 17	Chapter 8
	Fall Break (no classes)
Nov 29, Dec 1	Chapter 9
Dec 6, 8	Ch9, Final Review
TBD	Final Exam (comprehensive)

This schedule is tentative and subject to change.

Grading Policy

The grade will be determined as described below. The lowest assignment score and the lowest project score are dropped. No other bonus work, make-up work, dropped scores, or other means of raising your grade should be expected. At the end of the semester, it is possible that grades may be curved, but a curve should not be expected.

Exam 1	15%
Exam 2	15%
Final Exam	25%
Assignment Average	20%
Project Average	25%

Letter grades are determined using the standard 10-point range for each letter, then dividing this range into three equal parts to determine the +/- designation.

Attendance is strongly recommended.

Course & Instructor Policies

Assignments and projects must be turned in on time. **No late work is accepted unless cleared by the professor prior to the due date.** It is your responsibility to upload your work early enough to avoid possible problems uploading to eLearning. It is your responsibility to ensure that you have submitted the correct items. It is recommended that you double-check your submission to ensure it is correct. It is recommended that you submit your work at least 2 hours early to avoid issues.

Exams must be taken on time. Exceptions require advance approval by the instructor. It is up to the instructor to determine whether an exception will be made, and will depend largely on proof of extraordinary circumstances. Otherwise, a missed exam will either incur a substantial penalty or be recorded as a zero.

Exams have time limits. Students who continue to write on the exam after time is called or who start writing before the exam begins are subject to a penalty.

Students are expected to attend all class lectures. If absent, the student is still responsible for any material covered or anything said which the student missed.

All assignments, projects and exams are to be individual efforts. You are not to collaborate with other students, or to discuss solutions with other students prior to submission. However, discussing concepts and material covered is encouraged, just make sure that you learn it for yourself.

Copying of assignments, projects and exams, in whole or in part, from other students in this semester or previous semesters will be considered to be an act of scholastic dishonesty.

Grades are not based on needs or consequences, but are based only on performance.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.