CSCE 221 Data Structures and Algorithms
Syllabus

Fall 2015

1 Course Information

Instructor Information

Lecturer: Jory Denny
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Office: HRBB 527A
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Instructor's Assistant: Mukulika Ghosh
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Teaching Assistant: Peihong Guo
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Office Hours: TTh 11:00am-12:00pm

Grader: TBA
Email:

Section Information

CSCE 221-507
Lecture: MWF 3:00pm-3:50pm FRAN 102
Lab: MW 4:10pm-5:00pm RDMC 111H

CSCE 221-508
Lecture: MWF 3:00pm-3:50pm FRAN 102
Lab: MW 5:45pm-6:35pm RDMC 111H

CSCE 221-509
Lecture: MWF 3:00pm-3:50pm FRAN 102
Lab: MW 12:40pm-1:30pm RDMC 111C

Requirements

Prerequisite: CSCE 121
Corequisite: CSCE 222: Discrete Structures for Computing

Textbook

Data Structures and Algorithms in C++, Michael T. Goodrich, Roberto Tamassia, and David Mount, John Wiley & Sons, Second Edition, 2011.

Website

`http://parasol.tamu.edu/~jdenny/Courses/221`

2   Course Outcomes

After taking this course a student will be able to:

- Define, implement, and analyze the complexities of the following abstract data types:

  - Linear data structures: Lists, Vectors, Stacks, Queues
  - Trees
  - Maps, Dictionaries, Hashing
  - Graphs

- Define, implement, and analayze the complexity of common algorithms involving searching, sorting, and selection.

- Understand the uses and trade-offs of various algorithms and data structures.

3   Course Content and Tentative Schedule

During the semester we will discuss the following topics:

Week	Topic	Reading
1	Introduction	Ch 1–4
1, 2	Linear Data Structures: Stacks, queues, lists	Ch 5–6
3, 4	Trees, Priority Queues, and Heaps	Ch 7–8
5, 6	Maps, Dictionaries, Hashing	Ch 9
7, 8	Search Trees	Ch 10
9, 10, 11	Sorting and Selection	Ch 11
12, 13, 14, 15	Graphs and Graph Algorithms	Ch 13

4   Assignments and Grading

All assignments will be announced in class and posted on the course web page. If you miss class for any reason, it is *your* responsibility to find our what assignments you missed.

All assignments submitted in hard copy must include a signed coverpage. Assignments without the coverpage will not recieve credit.

Your grade will be based on four components:

1. **Exams — 42%** — There will be two mid-term exams and one final exam, each worth 15%. Each exam will have two components: an in-class exam (10%) covering concepts and algorithms and an in-lab practical exam (4%).

2. **Quizzes — 10%** — There will be approximately ten inclass and ten in-lab quizzes during the semester. Each will be worth a half of a point.

3. **Culture Assignments — 12%** — There is much more to computer science than your normal coursework. These assignments give you the opportunity to learn about some extra research, people, and concepts outside of class. There will be three culture assignments each worth 4% of the final grade.

4. **Programming Assignments — 16%** — These assignments are geared towards understanding the implementation aspects of various important data structures and algorithms. There will be four programming assignments through the semester each worth 4%.

5. **Homework Assignments — 20%** — Being able to design and analyze algorithms is an important aspect of computer science. There will be 10 pencil and paper assignments worth 2% each.

All assignment descriptions can be found on the course webpage.
Final grades will be assigned according to the following scale:

Percentage	100–90%	89–80%	79–70%	69–60%	60 and below
Final Grade	A	B	C	D	F

5 Policies

Attendance and Late Assignments

Attendance at all lab sessions is required. There will be no make-up exams and no late assignments accepted except for university-excused absences. Please discuss unusual circumstances **in advance** with the instructor when possible.

Collaboration

For the assignments in this class, discussion of concepts with others is encouraged, but all assignments must be done on your own, unless otherwise instructed. Reference every source you use, whether it be a person, a book, a paper, a solution set, a web page or whatever. You MUST write up your assignments **in your own words**. Copying is strictly forbidden. Every assignment must be turned in with a cover sheet available from the course web page, which lists all sources you used.

Academic Integrity

The Aggie Honor Code is "An Aggie does not lie, cheat, or steal or tolerate those who do." Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit here.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Cain Hall, Rm. B118, or call 845-1637.