EECS 560 Data Structures
Spring 2018

Instructor

Man Kong: 2038 Eaton
Lecture: TR 1:00pm-2:15pm, 2112 Learned
Office Hours: TR 10:50am-12:20pm
Also by appointment
Office Phone: 864-7389
Electronic Mail: kong@ku.edu

GTA

Lei Wang: 2041 Eaton
Lab: M 9:00am-10:50am, 1005B Eaton
R 11:00am-12:50pm, 1005B Eaton
Office Hours:
M 11:00am-1:00pm
F 10:00am-12:00pm
Also by appointment
Office Phone: 864-8802
Electronic Mail:
l290w868@ku.edu

Venkat Anirudh Yerrapragada: 2041 Eaton
Lab: T 11:00am-12:50pm, 1005B Eaton
T 2:30pm-4:20pm, 1005D Eaton
Office Hours:
W 10:00am-1:00pm
R 2:45pm-4:45pm
Also by appointment
Office Phone: 864-8802
Electronic Mail:
yvanirudh@ku.edu

(Optional) Textbook
Prerequisites
EECS210 and EECS448.

Grading

<table>
<thead>
<tr>
<th>HW:  10%</th>
<th>Lab: 20%</th>
<th>Exam 1: 20%</th>
<th>Exam 2: 20%</th>
<th>Final Exam: 30%</th>
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A: 90% - 100%
B: 80% - 89%
C: 70% - 79%
D: 60% - 69%
F: Below 60%

Remark: There will be no +/- grades assigned in EECS560 this semester.

Warning:
Your final course grade can be affected by the following Lab and Attendance Policies.

Lab Policy
- Lab assignments must be turned in by its due date in order to be eligible for full credit. However, it may be turned in up to two calendar days (48 hours) later with a 30% penalty. No lab assignment will be accepted if it is more than two days late.
- Each lab assignment that you do not turn in will lower your final course grade by one-half letter grade (-5%). For a lab assignment to be considered "turned in," you must earn at least 50% of the points for that lab assignment.
- A program that will not compile will earn you at most 30% of the points and, a program that compiles but will not execute correctly will earn you at most 50% of the points.

Attendance Policy
You are required to attend all lectures and labs; attendance will be taken regularly. If you have
- \( \leq 3 \) unauthorized absences: no penalty,
- 4 or 5 unauthorized absences: final course grade will be lowered by half letter grade (-5%),
- \( \geq 6 \) unauthorized absences: final course grade will be lowered by whole letter grade (-10%).

If you have a legitimate excuse to miss a lecture or lab, contact me, or our GTA, for approval. If you miss a lecture or lab due to illness, bring a doctor's note to me, or our GTA, and we will record the absence as excused. You will not be penalized for excused absences.
Exam Schedule
Exam 1:  February 22, Thursday, 1:00pm–2:15pm, 2112 Learned
Exam 2:  April 10, Tuesday, 1:00pm–2:15pm, 2112 Learned
Final:  May 8, Tuesday, 1:30pm–4:00pm, 2112 Learned

General Course Information
1. Except medical device(s) and laptop, no calculators, cell phones, head phones, or electronic devices of any sort will be allowed in class. No such devices should be out in the open. If you are using a laptop in class, it must be used solely for notes taking only.
2. You are responsible for all information we post on our class web site, including any possible changes to assignments after they are assigned.
3. Unless otherwise stated, all material from (a) lectures and labs, (b) assignments, and (c) information posted on the class web site are fair game for exams.
4. Homework assignment is due at the beginning of class on the due date. No late homework assignment will be accepted and we will not accept any assignment that is left in our office or mailbox.
5. The purpose of the labs is to give you an opportunity to implement various ADTs developed in class, thereby learning them more deeply than is possible simply by reading the book and attending lectures. Questions dealing with labs and lab assignments must first be directed to the GTA. If you still have difficulty after talking with the GTA, see the instructor for help.
6. All programs must be developed in C++ and executable using our departmental Linux systems. If you use another C++ development environment at home or elsewhere, it is your responsibility to make sure the code you submit compiles and runs correctly in the Linux environment used in the lab. We will not debug your program for you. A program that will not compile will earn you at most 30% of the points, and a program that compiles but will not execute correctly will earn you at most 50% of the points.
7. Different lab assignments may have different scores as well as different due days. Read the lab assignment carefully and, if you have any question, consult with your GTA.
8. Lab assignments must be turned in by its due date in order to be eligible for full credit. Lab assignments may be turned in up to two calendar days (48 hours) late with a 15% penalty for each day. That is, the lab assignment will first be graded as if it were turned in on time. Then 15% of the received score will be deducted if you turn in one day (< 24 hours) later, and 30% if two days (< 48 hours) later. No lab assignment will be accepted if it is more than two days (48 hours) late.
9. The laboratory setting allows you to ask questions of your GTA. But completing the labs - just like reading the book and attending lectures – does not guarantee that you have fully mastered the material. It is your responsibility to ensure that you have fully understood the lab material as well as the course material on which the lab is based. Do not fall into the trap of leaning too heavily on help from your GTA or classmates. Experience has shown that, while lab grades often average as high as 80-90%, exam grades typically are much lower. Exam averages are
typically in the 70s, and scores much lower are not uncommon. Complete mastery of the material requires both proficiency in coding as well as a thorough understanding of the fundamentals of data structures designs and analyses.

10. **Any unauthorized absence from an exam will result in a zero for that exam.** If you come in late after an exam has already begun, you will not be allowed any extra time to complete your exam.

11. Occasionally you may not understand why points have been deducted from your assignment or exam. If so, you should come to see us. We will re-grade your whole assignment, or exam, if, and only if, you contact us within 5 days after it has been returned in class. No assignment, or exam, will be re-graded after it has been returned for more than 5 days, regardless of whether you were in class that day or not.

12. We are not responsible for any assignment, or exam, that you do not pick up after they have been returned in class.

13. Keep all copies of your work. If you dispute any score recorded, you must bring in your original work for verification in order to have it changed.

14. Cheating will not be tolerated. **All submitted work must be strictly your own;** there is no group project/assignment in this course. Sharing your work or copying is cheating, and submitting work, including codes, that is not all yours, independent of your source, is also considered cheating. **Anyone caught cheating will be given an F grade for the course for all parties involved.** Reports of academic misconduct will also be made to your major department, school/college, and university, which may result in much more serious sanctions. It is your responsibility not to let anyone copy your assignment/exam; otherwise, you will have to pay the price for others’ misconduct.

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**Academic Achievement & Access**

Any student in this course who has a disability that may prevent him/her from fully demonstrating his/her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate the educational opportunity.

The Academic Achievement & Access Center (AAAC) coordinates accommodations and services for all KU students who are eligible. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. Their office is located in 22 Strong Hall; their phone number is 785-864-4064 (V/TTY). Information about their services can be found at [http://www.achievement.ku.edu/](http://www.achievement.ku.edu/). Please contact me privately in regard to your needs in this course.
KU Weapons policy

Individuals who choose to carry concealed handguns are solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws (http://concealedcarry.ku.edu/information) and KU weapons policy (http://policy.ku.edu/university-kansas-policy-weapons-including-firearms-effective-july-1-2017). Safety measures outlined in the KU weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.
- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier’s custody and control.
- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position
- Must have the safety on, and have no round in the chamber.

Withdrawal

As stated in the Undergraduate Catalog, procedures for withdrawing from a course are governed by the academic unit offering the course, not the academic unit to which a student belongs. If you choose to withdraw from this course, you should refer to the regulations outlined in the Catalog and the Timetable.

Typical Topics Covered:

1. Introduction to algorithmic performance analysis.
2. Basic concepts on data structures design and analysis; the techniques of experimental profiling vs. mathematical analysis.
3. Trees and their implementations; tree traversals and their applications.
   Balanced and unbalanced tree-based data structures, their implementations and applications.
4. Binary search trees and optimal binary search trees; introduction to greedy algorithms and dynamic programming algorithmic design paradigms.
5. Priority queues structures, implementations and applications.
6. Double-ended priority queues structures, implementations and applications.
7. Concatenated queues structures, implementations and applications.
8. Disjoint sets data structures, their implementations and applications.
9. Advanced Search Tree data structures.
10. Introduction to graphs, graph traversals, and simple graph algorithms.
Some Useful Books on Data Structures

   This book can be download at [https://larc.unt.edu/ian/books/free/](https://larc.unt.edu/ian/books/free/).
   This book can be download at [https://people.cs.vt.edu/shaffer/Book/](https://people.cs.vt.edu/shaffer/Book/).

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