Course Syllabus

CS 4349.003 Advanced algorithm design and analysis; Spring 2017; Tue/Thu 1:00-2:15 PM; ECSS 2.412; Class URL: http://www.utdallas.edu/~rbk/teach/2017s/aada.html

Professor Contact Information
Balaji Raghavachari; (972) 883-2136; r bk@utdallas.edu; ECSS 4.225; Office hours: Tue/Thu 9:00-9:45 AM, 2:20-3:00 PM. To meet at other times, send email for appointment.

Course Pre-requisites, Co-requisites, and/or Other Restrictions
CS 3345 or equivalent (Data structures and algorithms): Analysis of algorithms. Stacks, queues, and trees, including B-trees. Heaps, hashing, and advanced sorting techniques. Disjoint sets and graphs.

Course Description
Topics: Algorithm design techniques: divide-and-conquer, dynamic programming, greedy algorithms; Sorting and searching; Graph algorithms; Running time analysis; Proofs of correctness.

Student Learning Objectives/Outcomes
Study efficient algorithms for a number of fundamental problems, learn techniques for designing algorithms, prove correctness and analyze running times.
1. Ability to understand asymptotic notations, recurrences, algorithm analysis
2. Ability to understand divide and conquer algorithms
3. Ability to understand greedy algorithms
4. Ability to understand dynamic programming algorithms
5. Ability to understand graph algorithms

Required Textbooks and Materials

Assignments & Academic Calendar
Homeworks will be assigned on a regular basis.
Quiz 1: Feb 9 (Thu); Mid-term Exam: Feb 23 (Thu); Quiz 2: Apr 6 (Thu); Final exam: TBD.

Grading Policy:
Score minimum requirement in every category to earn a grade: (1) average of exams/quizzes, (2) homeworks.
There will be no curving of grades. Cut off scores:
A+: 90%  A: 87.5%  A-: 82.5%  B+: 77.5%  B: 70%  B-: 65%
C+: 62.5%  C: 60%  C-: 57.5%  D+: 55%  D: 52.5%  D-: 50%

Course & Instructor Policies
• CS department policy: one grade reduction for missing 3 classes (without prior permission from instructor), and a grade of “F” for missing 4 classes without proper excuse.
• Assignments are due in class on the specified date. Turn in what is completed by the deadline for partial credit. No late submissions will be accepted. All submissions must be your own work. Solutions copied from the internet, instructor's manual, etc. will be given zero credit.
• No browsing/email/social networking is allowed during the lectures. Students may not use computers or phones during class. You must take the instructor's permission to use computers in class.
• Regular class attendance and participation is expected and is the responsibility of each individual. There is a strong correlation between regular class attendance and good performance. If a student should elect not to attend a class, (s)he is responsible for any handouts, announcements, reading material and contents of missed lectures.

See also UTD's policies at http://go.utdallas.edu/syllabus-policies