Course title and number: CSCE 411-700: Design and Analysis of Algorithms
Term: Summer 2018
Meeting times and location: WEB

Course Description and Prerequisites

Course description: Modern computers rely on efficient algorithms for solving all types of problems. This course will help students grasp the fundamental concepts of algorithm design and analysis, understand its underlying theories, and learn essential algorithm-design techniques. Covered topics include dynamic programming, greedy algorithms, amortized analysis, graph algorithms, minimum spanning tree, shortest paths, maximum flow, linear programming, NP completeness, and approximation algorithms. Credits: 3 (3 Lecture Hours).

Prerequisite: Grade of C or better in CSCE 221 and CSCE 222/ECEN 222; junior or senior classification or approval of instructor.

Learning Outcomes or Course Objectives

The objective of this course is to study the principles and methods for designing and analyzing computer algorithms. Students are expected to obtain a comprehensive understanding of fundamental algorithm design techniques including dynamic programming, greedy algorithms, graph algorithm, etc., and also learn basic theories on the hardness of problems and the methods for obtaining approximate or randomized solutions.

Instructor Information

Name: Anxiao Jiang
Telephone number: 979-845-7983
Email address: ajiang@cse.tamu.edu
Office hours: MTWRF 2:30-3:30pm
Office location: WEB

Textbook and/or Resource Material


Grading Policies

Based on exams and homework:

• Exams: There are two exams during the semester, including a mid-term exam and a final exam. Each exam is worth 35% of the grade.
• Homework: There are multiple homework assignments per week, which contain written problems. Homework is worth 30% of the grade. Late policy: no late assignments accepted except with prior permission or by university rule.

By default, all work is solo; no collaboration allowed unless stated in the homework description.

Grading Scale
Standard Letter Grading Scale:
A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = <60

Submissions of Assignments
Homework assignments will be posted and submitted on eCampus. It is the student’s responsibility to make sure that the correct assignment is submitted to the correct place. Also, eCampus submissions may look completed when they actually are not. It is the student's responsibility to make sure that the submission process is completed. It is best to download the submission and to confirm that the submission stored on eCampus is the intended one.

The instructor and the TA’s will not consider non-submitted material, and they will not consider the file timestamps (as opposed to submission timestamps) as indication of completion of the assignment. (Time stamps of files can be easily tampered with and will therefore not be considered.)

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dynamic Programming, Greedy Algorithm, Amortized Analysis</td>
</tr>
<tr>
<td>2</td>
<td>Graph Algorithms, Minimum Spanning Tree, Shortest Paths</td>
</tr>
<tr>
<td>3</td>
<td>Maximum Flow, Linear Programming</td>
</tr>
<tr>
<td>4</td>
<td>Linear Programming, NP Completeness</td>
</tr>
<tr>
<td>5</td>
<td>Approximate Algorithm</td>
</tr>
<tr>
<td>6</td>
<td>Summary</td>
</tr>
</tbody>
</table>

Other Pertinent Course Information

1 Midterm Exam
1 Final Exam
7-9 Homework Assignments
Reading Assignments

The use of bootleg copies of the textbook is strictly prohibited.

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.

If you use any source other than the text, reference it/him/her, whether it be a person, a book, a solution set, a web page or whatever. You MUST write up the solutions in your own words. Copying is strictly forbidden.

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination 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 Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional
information, visit http://disability.tamu.edu.

**Academic Integrity**

*For additional information please visit: http://aggiehonor.tamu.edu*

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”