COT 5405: Design and Analysis of Algorithms (3 credits)

Spring 2015

Instructor: Dr. Cliff Zou (HEC 243),   407-823-5015,   czou@cs.ucf.edu

Course Time: TuTh 12:00pm-1:15pm,   **NSC-O116**   (Nicholson School of Communication)

Office Hour: TuTh 9:00am-10:30am

TA: Frank Plochan <frank.plochan@knights.ucf.edu>

Course Webpage: http://www.cs.ucf.edu/~czou/COT5405-15/

Prerequisite:

   The prerequisites for this course are COP 3503 and COT 3100. Have sound programming skill due to programming assignments. We assume some undergraduate exposure to discrete mathematics, and to algorithms and their analysis, and the ability to read, recognize and write a valid proof.

Description:

   This course will introduced advanced algorithms and assume that you have learned basic data structure and algorithms before in your undergraduate program. It will also teach you time and space complexity analysis of algorithms.

   Topics to be covered: Greedy algorithms; Divide and conquer algorithms; Dynamic programming; Network flow; NP-completeness; Approximation algorithms; Randomize algorithms.

   Outcomes: After this class, students will learn some practical algorithms that are widely used in various fields. Students have the ability to analyze complexity of designs and algorithms. Students have the ability to program learned algorithms in their appropriate application fields.

Textbook:

"Algorithm Design", by Jon Kleinberg and Éva Tardos, 2005, Addison-Wesley. ISBN-10: 0321295358

Course Teaching Tools:

   We will use Webcourse for assignment release and submission.

Assignments: We plan to have 3 homework written assignments, 2 programming assignments, 1 mid-term exam and 1 final exam. All assignments except exams should be submitted electronically through webCourse. All grades will also be released on webCourse.

Grading: +/- grading system will be used (A, A-, B+, B, etc). The tentative grading weight is: written homework 30%, programming assignment 25%, mid-term exam 20%, final exam 25%. The instructor reserves the right to change the grading policy at any time, but will explain the changes beforehand.