Department of Electrical Engineering & Computer Science
COP 3053 Computer Science II
Fall 2014

Lecturer: Rick Leinecker
Telephone: 407-823-2438
Email: Richard.Leinecker@ucf.edu

Lecture Meetings: Monday and Wednesday 4:30 – 5:45 PM, in HPA1 0119

Office Hours: Monday 1:00 – 4:00 PM in HEC 219
Tuesday 1:00 – 4:00 PM in HEC 219
Thursday 1:00 – 4:00 PM in HEC 219

TA: Aidean Sharghi (aidean.sharghi@knights.ucf.edu)

Prerequisites: COP 3530C

Required textbook:
Introduction to Algorithms by Thomas H. Cormen, Charles E. Leiserson, & 2 more; ISBN-13: 978-0262033848 ISBN-10: 0262033844

The text will be supplemented with additional notes that will be provided for you via the course web site: http://cop3503.rickleinecker.com.

Course Topics:
This course explores specific algorithmic techniques in more detail than CS1 and applies these to some new problems not explored in CS1. Also, more technical algorithmic analysis will be done in order to verify the efficiency of the algorithms discussed. Finally, a couple new data structures will be introduced.. It includes algorithms such as growth, recurrences, sets, sorting, data structures, greedy algorithms, and selected mathematical algorithms such as Fourier Transforms.

Proposed Schedule:
8/18/2014 – Introduction and Chapter 1
8/20/2014 – Chapters 2 and 3 – Growth of Functions; Summations
8/25/2014 – Chapter 4 – Recurrences
8/27/2014 – Chapter 5 – Sets
9/3/2014 – Chapter 7 – Heapsort
9/8/2014 – Chapter 8 – Quicksort
9/10/2014 – Chapter 9 – Sorting in Linear Time
9/15/2014 – Chapter 10 – Median and Order Statistics
9/17/2014 – Test on chapters 1-10
9/22/2014 – Chapter 11 – Elementary Data Structures
9/24/2014 – Chapter 12 – Hash Tables
9/29/2014 – Chapter 13 – Binary Search Trees
10/1/2014 – Chapter 14 – Red-Black Trees
10/6/2014 – Chapter 15 – Augmenting Data Structures
10/8/2014 – Chapter 16 – Dynamic Programming
10/13/2014 – Chapter 17 – Greedy Algorithms

10/15/2014 – Chapter 18 – Amortized Analysis
10/20/2014 – Test Chapters 11-18
10/22/2014 – Chapter 19 – B Trees
10/27/2014 – Chapters 20-21 – Binomial Heaps; Fibanacci Heaps
10/29/2014 – Chapter 22 – Data Structures for Disjoint Sets
11/3/2014 – Chapter 23 – Elementary Graph Algorithms
11/5/2014 – Chapter 24-25 – Minimum Spanning Trees; Single-Source Shortest Paths
11/10/2014 – Chapter 26 – All-Pairs Shortest Paths
11/12/2014 – Chapter 27 – Maximum Flow
11/17/2014 – Test Chapters 19-27
11/19/2014 – Chapter 28 – Sorting Networks
11/24/2014 – Chapter 29 – Arithmetic Circuits
11/26/2014 – Chapter 32 – Polynomials and the FFT
12/1/2014 – Chapter 34 – String Matching
12/8/2014 (4:00 PM – 6:50 PM) – Comprehensive Final Exam

Grading will be as follows:
Test 1 - 15%
Test 2 - 20%
Test 3 - 25%
Final Exam - 30%
Collected Assignments - 10%

Important Dates:
August 18, 2014 – Classes Begin
September 1, 2014 – Labor Day Holiday
September 11, 2014 – First Test Covering Chapters 1-10
October 20, 2014 – Second Test Covering Chapters 11-18
October 27, 2014 – Withdrawal Deadline
November 11, 2014 – Veteran's Day Holiday
November 17, 2014 – Third Test Covering Chapters 19-27
November 27-29, 2014 - Thanksgiving
December 1, 2014 – Last Day of Class
December 8, 2014 4:00 – 6:50 PM – Final Exam Covering all Course Material