Course Syllabus
COMP 550-001 – Algorithms and Analysis
Spring 2020

Meeting Place: Murphey 0116
Meeting Time: 2:00 - 3:15 Tu Th

Instructor: Prof. David Plaisted
Telephone: 962-1751
Office: SN352
E-mail: plaisted "at" cs.unc.edu
Office Hours:

TA: Tao Tao
Telephone:
TA Office: SN 337
E-mail:ttao@cs.unc.edu
TA Office Hours: MW 4-5 PM

LA: Fan Feng
Telephone:
LA Office:
E-mail: fan8@live.unc.edu
LA Office Hours:

LA: Irene Zhan
Telephone:
LA Office:
E-mail: zhan16@live.unc.edu
LA Office Hours:

LA: Martin Meng
Telephone:
LA Office:
E-mail: martinmq@live.unc.edu
LA Office Hours:

LA: Mingming Lang
Telephone:
LA Office:
E-mail: langmingming@gmail.com
LA Office Hours:

LA: Yunying Sam Zhu
Telephone:
LA Office:
E-mail: samzhu@live.unc.edu
LA Office Hours:

Text: *Introduction to Algorithms*, Cormen, Leiserson, Rivest, and Stein, Third Edition, McGraw Hill, 2009.

Prerequisites: COMP 410 and MATH 381 or COMP 283.

Grading:		
	Homework	12%
	First Midterm Exam	25%
	Second Midterm Exam	26%
	Pop Quizzes	1%
	Final Exam	36%

The first mid semester exam will be on Thursday, February 13 during class. The second mid semester exam will be on Thursday, March 26 during class. The final exam will be on Monday, May 4 at noon (I think) and will cover the entire course. All exams are closed book and closed notes.

There will be about 8 homework assignments. Some of the homework assignments may be time-consuming. Homework assignments are due at the beginning of class on the due date given. Homeworks turned in during class but after the beginning of class will be penalized 10 percent. Homework turned in after class but on the same day will be penalized 20 percent. Homeworks turned in the next day will be penalized 30 percent. Homeworks turned in on subsequent days will be penalized 40 percent or more.

There will also be 5 or more pop quizzes. These do not count much, but help me to see how well the class is learning the material and help you to remember the material better.

We will use power point slides prepared by Mark Foskey, Dinesh Manocha Ming Lin, and Jack Snoeyink, together with my notes from a previous class offering and probably many from Jim Anderson.

The course web page is at `www.cs.unc.edu/~plaisted/comp550` and includes power point slides, homework, and practice exams.

Please observe basic courtesy in class. If you yawn, try to do so quietly. If you need to leave the room, it is not necessary to do so while my back is turned. Class participation may influence your grade, especially if it is on the borderline. Students who do not come to class often, tend to get lower grades unless they have exceptional ability in abstract thinking.

You should be aware that the honor code, which prohibits the giving or receiving of unauthorized aid on exams and homework, is in effect.

Topics: The list of topics I plan to cover is given below. However I plan to omit some topics to make time to cover NP completeness.

Topics Covered	Classes
Chapter 2 -- Introduction, Program Correctness	1
Chapter 3, Appendix A -- Asymptotic notation, sums, functions	1
Chapter 2.3, 4 -- Recurrences, Divide and Conquer	2
Appendix C, Chapter 5 -- Counting and Probability	2
Chapter 6 -- Heapsort	1
Chapter 7 -- Quicksort	1
Chapter 8.1 -- Decision Trees	1
Exam 1	1
Chapter 8 -- Sorting in Linear Time	2
Chapter 9 -- Selection	2
Chapter 11 -- Hash Tables	2
Chapter 12 -- Binary Search Trees	1
Chapter 13 -- Red-Black Trees	1

Advanced Design and Analysis Techniques

Chapter 15 -- Dynamic Programming	1
Exam 2	1
Chapter 15 -- Dynamic Programming	1
Chapter 16 -- Greedy Algorithms (will skip 16.4 and 16.5)	2
Graph Algorithms	
Chapter 22,23 -- Graph Algorithms	3
Chapter 24,25 -- Shortest Paths	2
TOTAL	28