

## CSCI 570 Summer 2016 Course Syllabus

Instructor	Email	Office	Office Hours
Michael Shindler	shindler@usc.edu	SAL 204	MW 9:15 - 10:15 AM Tu 11:30 AM - 1:00 PM and by appointment
Yatin Wadhawan	ywadhawa@usc.edu	TBD	Th 10AM - 12PM

**Lecture:** 2:30 - 5:20 Mon, Tues, and Wed, OHE 100C

### Suggested Textbooks:

Algorithm Design and Applications by Michael Goodrich and Roberto Tamassia

Algorithm Design by Jon Kleinberg and Eva Tardos. Addison-Wesley, 2006.

Introduction to Algorithms by Cormen, Leiserson, Rivest, and Stein

*I encourage you to read at least one of these textbooks to supplement the ideas in lecture. Exams will be closed-book. Copies of these textbooks are available on reserve at the Science and Engineering Library.*

**Course Website:** The main course page is at piazza.com ; grades will be posted on BlackBoard.

### Grading:

Artifact	Weight	Date
Problem Sets	20%	Various
Quiz 1	15%	July 20 (Wed) 2:30 - 3:30 PM
Quiz 2	15%	August 2 (Tues) 2:30 - 3:30 PM
Final	50%	August 10 (Wed) 2:30 - 4:30 PM

### Exams

You will be provided with paper on which to take each exam. Exams will be individual effort and closed-book; you will be allowed to use one normal-sized page of handwritten notes. Students requiring alternate exam arrangements must make such requests within the first week of the term, or as soon as possible after knowing of the conflict.

### Homework Collaboration and Submissions

**Collaboration:** You are allowed, and indeed encouraged, to discuss the problem sets with other students. However, you must write up your solutions independently. To satisfy these two requirements, we invoke the “Gilligan’s Island” rule: you may discuss the problems with other students, but you may not take written notes, and you should engage in 30 minutes of mindless entertainment after the discussion (such as watching Gilligan’s Island) before committing thoughts to paper. You may not use any source other than the course materials *for this particular instance of CSCI 570* when coming up with solutions.

**Reconsideration:** Requests for reconsideration of a graded item must be made within one week of our first attempting to return the artifact to you and cannot be made on the same day that the item is returned. Reconsideration requests must be made to the instructor directly.

Homework assignments are to be submitted by the *start* of lecture on the date they are due. If your homework consists of multiple pages, you must *staple* your pages together. Due to the compact summer schedule, we cannot accept late homework submissions.

In submitting a solution to a homework or exam question, you should strive for a short answer; unnecessarily long answers may result in reduced credit. If you submit multiple answers to any given question, the grader reserves the right to select which one to grade.

If you require an alternate arrangement for turning in homework, such as due to sickness, please send the instructor your request and reason as soon as possible. Homework submitted via any alternate method without prior permission will not be acknowledged.

## Projected Schedule

We reserve the right to modify the schedule as the class progresses. All assigned readings are in the textbook of Goodrich and Tamassia, although equivalent topics in the other textbooks are acceptable.

Week	Day	Topic	(G / T)	Other
1	7/5	Intro, Fundamentals	Ch. 1	
	7/6	Fundamentals	Ch. 13	
2	7/11	Dynamic Programming	Ch. 12	
	7/12	Dynamic Programming		
	7/13	Dynamic Programming		
3	7/18	Greedy Algorithms	10.1- 10.2	HW1 due
	7/19	Greedy Algorithms	14.2, 15, 10.3, 7	
	7/20	Quiz I, Divide and Conquer	Ch. 8, 11	
4	7/25	Divide and Conquer	9.3, 22.1, 22.2, 22.4	HW2 due
	7/26	Network Flow	16.1-16.3	HW3 due
	7/27	Network Flow	16.4	
5	8/1	Network Flow / Quiz 2	17.1-17.4 17.5, 17.6	HW4 due
	8/2	Limits of Knowledge		
	8/3	$\mathcal{NP}$ -complete Problems		
6	8/8	Coping with Complexity	Ch. 18	HW5 due
	8/9	Theory of Computation		
	8/10	<b>Final Exam</b>		

# CSCI 570 Summer 2016

## Course Survival Guide

- **I have an administrative question about...**

It's probably somewhere on the website (blackboard.usc.edu or Piazza). Check the syllabus and the other materials posted there.

- **What kind of prior knowledge should I have coming into this class?**

Ideally you will have taken the equivalent of CSCI 104L and 170. The first two lectures will be spent "reviewing" this material for those who need it. This may move a bit quickly for those with no knowledge of data structures or discrete mathematics, but an ambitious student will be able to keep up.

- **Help! The homeworks are hard!**

This is intentional. Feel free to come by office hours if you need some help on the problems. The TAs and I regularly read Piazza also, so feel free to ask questions when you're stuck.

- **I am used to getting very high grades in my other CSCI classes. Why am I struggling in your course?**

This is a Theory course, and I've seen time and again that there is very little correlation between those good at theory and those good at other aspects of computer science. You may find you need to put in a wildly different amount of effort for this course than for your other courses.

- **How do I study for the quizzes and final?**

Practice problems. The textbook has a ton of very good problems. I have specifically highlighted some of these (on the homework assignments) which I think will be good practice. If you want to know if you did them correctly, come to office hours or email me. If you need more to do, go over the homeworks and solutions. Then do the other problems in the textbook. This class is NOT a memorization class, it is a problem-solving class. Thus the absolute best way to prepare for exams is to practice the kind of problems I assign.

- **My final course grade is X, but I really needed to get a Y because otherwise I wont graduate/will have to retake the class/will lose my scholarship. Can you boost my grade?**

No. The only reason I will boost someone's grade is in the event of a grading error. If you absolutely must get a certain grade, the time to reveal this is well before the final exam when your grade has yet to be determined. I am perfectly willing to give a lot of help, advice, practice problems, etc. for students who are struggling and worried about their grade. This must be done during the semester, not after the final grade has been assigned.

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### Academic Honesty Guide

It is important to be able to seek out helpful information and collaborate, but it is clearly wrong to pass off work by others as your own. Navigating these two principles can be tricky. To help guide you, follow this principle:

**The “Gilligan’s Island” Rule:**

You may discuss high-level ideas, and give hints to other students regarding how to solve homework problems. However, you should not keep any written record from this discussion. Afterwards, take a 30-minute break and do something unrelated to the course (watching an episode of “Gilligan’s Island,” for example). You may now return to your assignment.

The “Gilligan’s Island” Rule is less an ironclad rule as a guideline. It is a guideline to help you determine what is and is not appropriate collaboration. Flouting the spirit of the Rule while following its letter does not excuse cases of cheating which arise. For example, it is clearly **not** okay to study and memorize your friend’s solution, watch an episode of a television show, and then write out your friend’s answer from memory and submit it.

**You** are responsible for understanding what is allowed, and what is not. Cheating can and does occur which is neither malicious nor intentional.

We have very observant graders who tend to notice inappropriate collaboration and plagiarism. Follow the above guidelines to make sure you never fall afoul of this.

- **You should never** show your homework assignment to someone else.
- **You should never** seek homework solutions from outside sources.
- **You should never** tell a student specifically how to solve part of a homework problem.

If someone copies your work, both of you are culpable! **Remember: friends that pressure you for unreasonable help are not really friends.** There are instructors who are here to help!

Now you know, and knowing is half the battle!