Course Home Page:  http://people.cs.pitt.edu/~kirk/cs1510/
Course Piazza Group:  http://piazza.com/pitt/fall2017/cs15102012  This group will be used for announcements. The course group is the best place to ask general questions (e.g. a question about a particular homework problem). This group will be monitored by the instructor and TA, but often other students can provide a quicker answer than the instructional staff.

Instructor: Kirk Pruhs
Office: 6415 Sennott Square
Phone: 624-8844
Email: kirk@cs.pitt.edu Please use the course group for general assignments, etc. Please restrict the use of personal email to personal issues (e.g. you won't make an exam because you are sick).
Office hours: After class. Specifically, 10:45-12:00 Monday and Friday, and 10:45 - 11:30 on Wednesday. If you can catch me in my office on these days, I’m probably happy to talk to you unless I have a paper/grant deadline.

TA: Max Bender
Office: 6406 Sennott Square
Email: MCB121@pitt.edu
Office Hours: 2:30-4:30 Tuesdays and Thursdays. 4-6 Wednesday.

Course Meeting: The course will meet Mondays, Wednesdays and Fridays from 9:30-10:45 in 5313 Sennott Square. A normal semester class has 27 scheduled class meetings, of which often one or two are canceled. We will have a similar number of class meetings.

Optional Textbook: Foundations of Algorithms by Neapolitan and Naimipour. Any edition of the textbook is fine for this class. You are welcome to consult other introductory textbooks if you prefer. Most students don’t find a textbook particularly useful.

Prerequisites: CS 1501, and CS 1502. If you take this class without these prerequisites, you forfeit any right to complain that the class is at an inappropriate level.

Course Content: The main goal of the course is to learn to think algorithmically like a “real” computer scientist. This course is different than CS 1501 in that we will be designing our own algorithms, as opposed to learning algorithms. In the past, most students have found the course material to be challenging. Most class time will be devoted to understanding examples of algorithm design, for particularly interesting problems, using the Socratic method. There will be small group homework assignments due almost every class. It is expected that most of your learning will come from the process of solving the homework problems within your group. Problems on the midterm exams will be very similar (usually identical) to problems covered in class or assigned as homework. We will cover the following topics in the following order:

- Deciding the Correctness of Algorithms /Greedy Algorithms (Chapter 4 of Neapolitan and Naimipour)
- Dynamic Programming (Chapter 3 of Neapolitan and Naimipour)
- Reductions and NP-completeness (Chapter 9 of Neapolitan and Naimipour)
- Parallel Algorithms (Chapter 10 of Neapolitan and Naimipour)

Grading: Grades will be based on homework, classroom participation, and two midterm exams. Homework will constitute 30% of the final grade. Each midterm exam will constitute 30% of the final grade. There will not be a cumulative final exam. Attendance will be taken and, along with class participation, and participation in the Piazza group, will count for the remaining 10% of the grade.

I will subjectively set the grading scale at the end of the semester. You are not in competition with other students. I have no set numbers of A’s, B’s etc. I strongly suggest you cooperate with each other to understand the material. This is in all students’ best interests. If a student’s homework scores are
conspicuously/suspiciously/significantly higher than a student’s exam grades, I reserve the right to base the course grade on only the exam scores, and classroom participation. Generally speaking, I usually don’t give out a lot of A’s because I think the top grade should really represent mastery of the material, but I tend to be sympathetic in giving out C’s if a student attends class regularly, participates fully in class, and regularly makes a good faith attempt on homework assignments.

**Homework Policy:** You should do your homework in groups of 2 or 3 people. Groups of different cardinalities, including 1, must be approved by me. Each group need only provide one write-up per group. Write-ups must use **LATEX**, http://en.wikipedia.org/wiki/LaTeX. You may discuss problems with any student in the class with the provisos that you shouldn’t feed others complete solutions, and you must acknowledge your collaborators, and the nature of the collaborations at the end of your the write-up. You may not seek solutions to assigned problems on the www, in other books, from friends outside the class, etc. Although you may consult outside sources for general knowledge, e.g. alternate explanations of dynamic programming.

All homework is due at the start of class on the date due. You should turn in a printout of your homework. No late homework is accepted. The homework will be graded by the TA. Many students will find some problems demanding. It is not expected that all students will be able to answer all the homework questions.

**Exam Scoring Appeal Policy:** You may submit an appeal in writing if you believe that your solution for a problem on an exam is "essentially fully correct". No appeals are allowed for additional partial credit; Partial credit is too subjective. Appeals will not be accepted earlier than 1 class after the exams were returned, and will not be accepted later than 2 classes after the exams were returned. Note that the problem will be regraded, there is a possibility that the new grade will be lower than the original grade. Of course any clerical errors can be corrected.

**Disability Policy:** If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (TTY), as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

**Missing tests:** If you are going to miss a test for unavoidable reasons then before the exam (or as soon as possible) you must contact me.

**Cheating Policy:** I have no tolerance for cheating. If you are caught cheating, you will receive an F grade for the course. Ignoring the ethics, purely from a pragmatic point of view, cheating does not make sense in this course. The risk/reward ratio is bad. I’m very forgiving in giving out passing grades if a student is making a genuine effort. If you cheat, you will not learn the material, and will get killed on the tests. So cheating is also a bad strategy for a student trying to get a high grade. Cheating seems to be so ingrained in some students, that they just feel compelled to cheat, even when it make no sense. If you absolutely feel compelled to cheat, here is one small tip: at least don’t copy off of the solutions from previous years (which is the first thing the TA checks), or from wikipedia or other sources that Google search returns on the front page in response to the obvious queries. Just to be clear, our TA’s do know how to use Google search.