Course Specifics:

Instructor: Rajiv Gandhi
Office: 311 Business and Science Building
E-mail: rajivg@camden.rutgers.edu
Class Time: TR 4:30-5:50pm
Classroom: BSB 335
Office Hours: Mon 12:30-2:00pm.
Class web-page: http://crab.rutgers.edu/~rajivg/cs371

If you have any questions or comments please do not hesitate to see me during my office hours or send me e-mail. If you cannot see me during my office hours you should send me an e-mail to schedule an appointment.

Course Overview:

Algorithms are procedures (recipes) to solve computational problems. A good algorithm must not only solve the problem correctly, it must also be efficient, i.e., it must make effective use of resources such as time and space. This course is an introductory course in algorithm design. The focus of this course will be to design algorithms for problems and analyzing their complexity. We will address a variety of fundamental topics such as sorting, searching, graph algorithms, etc. We will also study the fundamental techniques for algorithm design such as divide and conquer, greedy, dynamic programming, etc. We will see that problems can be organized in a hierarchy indicating the inherent difficulty of the problem based on the best possible algorithm for solving them.

Text Book:

The required text for this course is the following.
Algorithm Design, Kleinberg and Tardos, Addison Wesley.

Performance Evaluation:

The components of evaluation are as follows.

- Homework Assignments – 300 points.
- Exams – 700 points.
Prerequisites

It will be assumed that each student is comfortable with basic programming concepts (iteration and recursion), simple data structures (arrays, lists, stacks, queues), and discrete mathematics (proof techniques, counting, probability, sets, functions, etc.). If you do not know the above topics well enough or are unsure if you have the necessary background for the course please see me right away.

Advice:

**Come to every class!** Missing even one class can have a substantial effect on your ability to understand the material. Be prepared to think and concentrate, in the class and outside. I will try to make the class interactive. Participate in the class discussions. Ask questions when you don’t understand something. Keep up with the class readings. Start homeworks early and come and see me to discuss ideas, solutions or simply to check if what you understand is correct.