

# Computer Science 3650

## Analysis of Algorithms (Section 002)

### Spring 2020

**Meeting Time:** 9:00 – 9:50 A.M., Monday, Wednesday, Friday

**Meeting Location:** Austin 206

**URL:** <http://www.cs.ecu.edu/~rws/c3650/>

**Instructor:** Dr. Ronnie W. Smith

**Office:** Sci-Tech C-117

**Office Hours:** Mondays 10:15 – 10:45 A.M.

1:45 – 3:30 P.M.

Wednesdays 10:15 – 10:45 A.M.

1:45 – 3:30 P.M.

Fridays 10:15 – 10:45 A.M.

(or by appointment)

**Email:** [rws@cs.ecu.edu](mailto:rws@cs.ecu.edu)

**Phone:** 328-9687

#### Course Goals

1. To learn techniques for expressing the time and space cost of an algorithm as it depends on the size of the problem instance.
2. To learn techniques for demonstrating that an algorithm correctly solves a given problem.
3. To be able to apply common techniques such as divide-and-conquer and dynamic programming to the design of efficient algorithms for given computational problems.
4. To learn the fundamental properties of known efficient algorithms for some important computational problems.

#### Prerequisite

CSCI 2530 (Note: successful completion of CSCI 2405 is *very* valuable)

**Text** (required, available in hard copy or as an ebook through Joyner Library)

Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein, 3<sup>rd</sup> edition, MIT Press, 2009.

“We find that although you need to know how to apply techniques for designing and analyzing algorithms, problems seldom announce to you which techniques are most amenable to solving them.” (from page xvi of the Preface).

#### Evaluation Criteria

Participation – 10% (periodic attendance sign-in sheets and online question submission)

Take-home Quizzes - 20% (2 of them, due March 6 and April 28; may be worked in teams of two to four students, one submission per team)

In-class Quizzes – 40% (4 of them, February 5, February 26, March 27, and April 8; no makeups administered)

Final Exam – 30% (May 1, 11:00 A.M. – 1:30 P.M.)

#### Grading Scale

An absolute grading scale has not been set, but you can be assured of at least the following:

Final Average ( $x$ )	Grade will be at least
$x \geq 90$	A-
$80 \leq x < 90$	B-
$70 \leq x < 80$	C

### **Late Work**

No take-home quizzes will be accepted without an official excused absence. All take-home quizzes are due at the start of class.

### **Class Participation and Attendance**

Class participation will be monitored through periodic attendance sign-in sheets and through online submission of questions. These activities will be incorporated into the Participation portion of your grade.

A dean's excuse or student health excuse is required for an absence to be considered excused.

### **Virtual Office Hours**

Besides physical office hours noted on the previous page, virtual office hours are available on an ad hoc basis. This refers to times during the week when I will try to answer student emails. My policy for answering emails will be the following.

- First priority during physical office hours will be visitors and phone calls. Secondary priority will be answering emails.
- On weekday evenings (Monday through Thursday), I usually check email at least once, but normally no later than 9:30 P.M.
- On weekends, I will normally try to look at email at some point on Sunday afternoons after 2:00.
- You should not rely on me answering emails quickly at other times, though I will sometimes be able and willing to do that.

### **Ethics**

You may work on the take-home quizzes in teams of two to four students. The name of all team members should be provided when you turn in the take-home quiz. Teams must be decided upon in advance (deadline TBD).

I may provide advance notice of questions for some of the in-class quizzes and/or the final exam. It is expected that all work on these is your own work and nobody else's (not even teammates).

### **Hints for Success**

1. Do the reading in advance and prepare thoughtful questions.
2. Work the practice problems.
3. Re-read the textbook and review your notes at least two more times.
4. Form study groups and learn from each other!
5. Take advantage of my office hours.

### **University Mandated Syllabus Information**

The university requests that we include information in each syllabus on retention requirements, student conduct, weather emergencies, and ADA compliance. This information is available on a separate page provided in the online syllabus at the course web site.