

# SPRING 2017: **COT 5407** INTRO. TO ALGORITHMS

[HOMEWORK 3; DUE FEB 2 VIA EMAIL]

**General submission guidelines and policies:** ADD THE FOLLOWING SIGNED STATEMENT. Without this statement, your homework will not be graded.

I HAVE ADHERED TO THE COLLABORATION POLICY FOR THIS CLASS. IN OTHER WORDS, EVERYTHING WRITTEN DOWN IN THIS SUBMISSION IS MY OWN WORK. FOR PROBLEMS WHERE I RECEIVED ANY HELP, I HAVE CITED THE SOURCE, AND/OR NAMED THE COLLABORATOR.

Read the handout on **Homework guidelines and collaboration policy** from your course website before you start on this homework. This is very important. You only need to submit solutions to problems marked (**Regular**). All others are optional.

## Problems

14. (**Regular**) List **all** the sorting algorithms (from the list of 9 algorithms on slide 2 of Lecture 6) that are not **stable** and give the smallest counterexample to prove your claim.
15. (**Exercise**) Solve Exercises 6.1-4 on p154.
16. (**Exercise**) Solve Exercises 6.1-6 on p154.
17. (**Exercise**) Solve Exercises 6.4-2 on p160.
18. (**Exercise**) Solve Exercises 7.2-3 on p178.
19. (**Exercise**) Solve Exercises 7.3-1 on p180.
20. (**Extra Credit**) Solve Exercise 6-3 on p167.
21. (**Exercise**) Solve Exercise 8.2-1 on p196.
22. (**Regular**) Solve Exercise 8.3-4 on p200.
23. (**Extra Credit**) Solve Exercise 8-4 on p206.