**CS 2500 SS17 – Project Requirements & Grading**

# Purpose

The purpose of the programming projects is to reinforce the abstract notions of complexity, correctness and algorithm properties presented in class. The programs and analysis represent classic algorithms in the field of Computer Science and involve, in general, more complex programming and analysis skills than programs in previous classes.

# Programs

You may work cooperatively in a group of up to two total people on each programming assignment. It may be required that the group membership change for each program.

# Report Style

We will consider each program as a laboratory experiment requiring a complete write-up in the form of a written report (one per group). Each report should contain the following information:

Motivation - this is very important to introduce the subject to the scientifically literate reader. The motivation should clearly state what is being attempted and what the reader might expect to learn in a way that will "grab" the reader.

Background - this section should provide enough background so the reader can appreciate the experiment's significance, relevance, and complexity.

Procedures - this section should describe what procedures were used in constructing the program. Specifically, this section should include:

* High-level pseudocode (as done in class)
* Pre and Post Conditions of the program and each routine, and loop invariants for all major loops
* Any problems encountered in developing the program
* A description of the tests performed on the program and detailed results that show its correctness. At a minimum, black-box boundary testing as you likely did in Data Structures.

Conclusion - which addresses the questions posed by the "Motivation" section.

Grading of the reports will be based on the following (with associated percentages):

* 25% - Motivation and Conclusion
* 25% - Correctness of Program – does it meet its postcondition. Does it satisfy the assignment?
* 10% - Background
* Procedures
  + 10% Pseudocode with Invariants and Pre/Post Conditions
  + 10% Implemented Pre/Post conditions and Invariants
  + 5% List of Problems
  + 15% Testing