Contact Information

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Learning Objectives

1. Be able to perform complex programming tasks
2. Understand the fundamentals of algorithm analysis
3. Recognize and apply the canonical ADTs (Lists, Queues, Stacks, Trees, Priority Queues, Maps, and Graphs) appropriate for solving a problem
4. Demonstrate the ability to implement the canonical ADTs with arrays, linked lists, binary trees, hash tables, balanced, trees, and other similar structures
5. Be proficient in defining and coding recursive algorithms, including recognizing when recursive solutions are appropriate
6. Understand the role of algorithmic complexity and data structure choices in the cyber domain, and understand the ramifications of different data structures

Course Web Page

http://www.usna.edu/Users/cs/taylor/courses/sy301/

The course website will be used to post course homework assignments, supplemental notes, project assignments, and other items of interest to the students. Students are responsible for the information posted on the course web page, whether or not it is mentioned in class. Check it often.

Text

There are no required texts for this course. If you feel a book would be helpful to you, let your instructor know; he may have something to loan you.

Extra Instruction

This course is intended to be challenging, and it is likely you will need EI, perhaps often. Both your instructors and your MGSP leaders are dedicated to providing this help. The MGSP schedule will be publicized; instructors are available by appointment, by email, and often by random drop-ins.

Food/Beverages

You are welcome to bring your beverages with a lid into the lab. No other beverages or food are allowed around the computers.
**Grading Policy**

**Quizzes:** There will be frequent quizzes, over material you have learned in previous meetings. Quiz questions are good indicators of what your instructors think is important, and what is likely to appear on exams.

**Homework:** There will be occasional homework assignments posted on the course webpage. Because it is on the webpage, you are responsible for the homework whether or not it is mentioned in class. They are due at class time on the due date. These assignments can be completed collaboratively.

**Labs:** Labs are assigned weekly, and will be due at class time on the due date (generally one week later). Labs may be completed collaboratively.

**Projects:** There will be several programming projects. No collaboration or (unless explicitly stated) online assistance is allowed on these projects. You may discuss the project with a friend for the sole purpose of understanding what the instructions are asking you to do, but this conversation may never touch on how to complete the project. Otherwise, all conversation regarding the project must be with me or MGSP leaders. Unless explicitly stated, no online or external resources are allowed, unless cleared with me first. At the end of the semester, students must have submitted a solution worth at least a C- for every project, or receive a final grade no higher than their lowest project grade. Should a submission not meet this standard, the student may re-submit until it does; the entered grade in the gradebook will remain the same, but the student will no longer receive an automatic D/F for the course.

**Exams:** There will be two midterms and a comprehensive final. Should an alternative time for the exam be needed, inform the instructor at least one week in advance.

**Late Work:** Homework WILL NOT be accepted late unless a prior arrangement has been made with the instructor. Labs and Projects may be submitted late, with the following subtractive penalties (1 minute late=1 day late):

- 1 day 15%
- 2 days 40%

**Letter Grades:** Many assignments will be given a letter grade, rather than an explicit numerical grade. These grades map in the following ways:

- A+ 100%
- A 95%
- A- 92%
- B+ 88%
- B 85%
- B- 82%
- C+ 78%
- C 75%
- C- 72%
- D+ 68%
- D 65%
- D- 62%

**Absences:** You are responsible for obtaining any material missed due to an absence. You must ensure your work is submitted on time regardless of other commitments, i.e. duty, sick call, MO, eye surgery, etc. Should bona fide emergencies arise, it is your responsibility to notify the instructor within a reasonable time period and negotiate an extension as appropriate.
Course Grade: The breakdown of the final course grade will be:

- **20% Final Exam** - the final exam will be cumulative.
- **25% Mid-term Exams** (2)
- **35% Programming Projects** - Detailed instructions for the electronic submission will accompany each project. These projects are intended to be challenging, and will teach a lesson on procrastination to any who need it.
- **15% Labs** - Labs will be submitted as detailed by your instructor.
- **5% Other** - Any graded work other than the above, including quizzes and homework, falls into this category.

**Academic Integrity**

Students are expected to understand and abide by the Brigade Honor Concept.

**Collaboration:** Collaboration is allowed on homework and labs. **ALL COLLABORATION MUST BE CITED.** For this course, collaboration is defined as “two or more people working together to develop an approach to a problem and overcoming obstacles that present themselves.” Note this is different from “writing code together,” or “one midshipman guiding another towards a solution.” After collaboration, participants should go off and do their own coding.

If not all participants are contributing, or a midshipman’s code is on display, you are not collaborating, and EI is likely more appropriate than continuing to work together. The only allowed exception to the “no code” rule is you may help each other with small-scale debugging, which results in only a few changed lines of code. When discussing concepts (“I don’t understand how a linked list works”), this policy doesn’t apply; discuss whatever you want, however you want. When the conversation is as related to a solution to an assignment, make sure you’re collaborating.

Note that for projects, no collaboration of any kind is allowed.

Evidence indicating a violation of this policy on academic integrity will be forwarded to the Brigade Honor Staff as violation of the Brigade Honor Concept.

Submitted,  
Asst. Prof. Gavin Taylor

Approved,  
CDR Mike Bilzor

Course Coordinator  
Department Chair