

IC312 - Data Structures

Course Policy

Fall AY2008

Instructors:

CDR Brian Osborn

MI-346

Phone: x3-6803

E-mail: osborn@usna.edu

Homepage: <http://www.cs.usna.edu/~osborn>

Capt Brian Balazs

MI-371

Phone: x3-6814

E-mail: balazs@usna.edu

Homepage: www.cs.usna.edu/~balazs

Course WWW Page:

The course web page can be accessed from my home page. From there you will find course notes, homework assignments, labs, project assignments and other items of interest as they become available.

Required Text:

Data Structures and Algorithms in Java, 4th Edition, Michael T. Goodrich and Robert Tamassia, Wiley Press, 2006

Learning Objectives:

1. Understand the fundamentals of algorithm analysis (Big-O, Big- Θ , Big-Omega);
2. Possess an understanding of the concept of abstraction and be able to describe the idea of separation of implementation and interface;
3. Given a problem specification, recognize and apply the canonical ADTs (Lists, Queues, Stacks, Trees, Priority Queues, Dictionaries, and Graphs) appropriate for solving the problem or designing a computer-based system that meets the desired specifications
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. Demonstrate an understanding of ACM's and IEEE's Code of Ethics and Professional Conduct agreements and the impact these agreements have on the organizations that employ computing professionals.

ABET Student Outcomes:

CS and IT Program Outcomes

- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
- (c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
- (e) An understanding of professional, ethical, legal, security, and social issues and responsibilities
- (g) An ability to analyze the local and global impact of computing on individuals, organizations and society

Honor:

You are expected to abide by the USNA and Computer Science Department honor policies at all times, including, but not limited to: The Honor Concept of the Brigade of Midshipmen, the Policies Concerning Graded Academic Work, and the Computer Science Department Policy Concerning Programming Projects.

- **Non-programming homework assignments:** Collaborative conversations regarding the general approach for completing homework assignments is acceptable, but the actual work must be your own.
- **Routine Programming Assignments:** Collaborative conversations with regard to syntax and strategies for accomplishing homework and other “routine” out of class programming assignments are allowed, however implementation must be the work of the individual student handing in the finished product. All programming assignments are considered “routine” unless I specifically indicate that it is a “project.”
- **Quizzes, Exams and Programming Projects:** All quizzes’s, written exams and programming projects must be entirely your own work. See the Computer Science Department’s policy concerning programming projects cited above.

Extra Instruction:

Extra Instruction (EI) is available and encouraged when your own attempts to understand the material are unsuccessful. Please come prepared with specific questions or areas to be discussed (reading the text first is always a good idea). If you have missed class, get the notes from a classmate. Do not ask or expect to receive EI on material that you have slept through. Your instructor will be available weekdays by appointment. You are also welcome to stop by their office without an appointment, however there is no guarantee they will be available.

Quizzes & Homework:

There are no scheduled quizzes, but I reserve the right to give a quiz at any time. There will be regular homework assignments. Homework not submitted on time will lose 20% for each day late. Homework turned in after the solution has been posted on the web site will receive a zero. All homework will be due at the start of class on date due.

Projects:

There will be three programming projects. Project submissions consist of two parts: electronic (the program itself), and paper (printout, external documentation, testing runs). Detailed instructions for the electronic submission will accompany the project. The electronic and paper versions of programs should be identical. Projects are due by close of business on the date

specified in the assignment. Projects in my possession when I arrive in the morning (including my mailbox or slid under my door) are considered to have been submitted by close of business on the previous working day. Projects submitted “n” working days late will receive a 3ⁿ point penalty. Note: Both projects must be submitted in order to pass the course.

Exams:

There are three scheduled exams. The 6 and 12-week exams will focus on the recent material and the final will be comprehensive. If for some reason a make-up exam will be required, inform me as soon as possible, but no later than 1 week in advance.

Absences:

You are responsible for obtaining any material missed due to an absence. Additionally, you must ensure your work is submitted on time regardless of other commitments, i.e. duty, sick call, etc. Should bona fide emergencies arise, it is your responsibility to coordinate with the instructor (emergency leave, hospitalization, SIR, etc.).

Class Conduct:

You are expected to uphold all professional standards while in class. Sleeping in class is prohibited.

Food/Beverages:

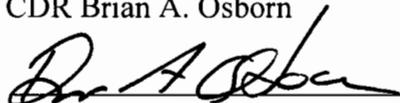
Food is not permitted in the classroom or labs. Beverages are allowed, but only in closeable containers (soda cans are NOT closeable).

Course Grade:

Homework and quizzes	25%
6 week	15%
12 week	15%
Final	20%
Projects	25%

Submitted,

CDR Brian A. Osborn


Course Coordinator

Approved,

CAPT T. A. Logue


Department Chair