Course Instructor

Instructor: Suely Oliveira
Campus Address: 101H MLH
Phone: (319) 335-0731
Email: suely-oliveira@uiowa.edu
Office Hours: Tu, W, F 1:00-2:00pm.

Class Meeting Times

2:30-3:20pm MWF SHAM, Main Library.

Course Site

To access the course site, log into Iowa Courses Online (ICON) using your Hawk ID and password.

Prerequisites

CS:1210 with a minimum grade of C- or ENGR:2730 with a minimum grade of C-

Academic Course Home

College of Liberal Arts and Sciences
DEO: Alberto Segre
Phone: (319) 335-1713
Email: alberto-segre@uiowa.edu

Course Description and Goal

Design, implementation, and application of data structures (e.g., linked lists, stacks, queues, hash tables, trees); complexity analysis; recursion; introduction to object-oriented programming concepts; abstract data types and their realization using generic interfaces and classes; software design patterns (e.g., iterators, comparators).

Topics and Schedule (tentative plan)

- Week 1: Introduction to Data Structures
- Week 2: Arrays and methods
- Week 3: Analysis and Recursion
- Week 4: Linked Lists
- Week 5: Stacks and Queues
- Week 6: Trees; Midterm I (on Friday)
- Week 7: More on Trees
- Week 8: Balanced Search Trees
- Week 9: Heaps & HashTables
- Week 10: Graphs; Midterm II (on Friday)
- Week 11: Graphs
- Week 12: Graphs
- Week 13: Algorithm design
- Week 14: Sorting
- Week 15: Review

Required Textbook/Media

Top Hat – for in-class quizzes and slides (also on ICON)
Zybooks – for Reading, Homeworks and Programming LABS
ICON – for grades and slides (also on Top Hat)
Assessment

20% Midterm 1, 20% Midterm 2 , 20% Final, 15% in-class quizzes (Top Hat), 15% Programming LABS (zybook), 10% Homeworks (zybook). Plus/minus (+/-- ) grades will be used.

Objectives

After finishing this course students should be proficient in Java and Data Structures for various applications.

Collaboration policy

Students are welcome to work to work together on homework questions.

Course Policies

- **Communications:** You will need to check ICON at least the days of the class. I will send emails to the class as needed.
- **Due Dates and Missed Deadlines:** In some cases, late programming will be accepted up to 2 days late if justified. In such cases there will be a 20% late penalty.
- **Attendance:** Attendance is expected from all students for all classes. Exceptions will be made for illness, mandatory religious obligations, or other unavoidable circumstances. If a student fails to attend an exam for one of the reasons listed above, they should talk to the instructor about a make-up exam.

College and University Policies

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook at [https://clas.uiowa.edu/students/handbook](https://clas.uiowa.edu/students/handbook).

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences (Operations Manual, III.15.2, k.11).

Accommodations for Disabilities

The University of Iowa is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (which includes but is not limited to mental health, attention, learning, vision, and physical or health-related conditions). A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor's office to make particular arrangements. Reasonable accommodations are established through an interactive process between the student, instructor, and SDS. See [https://sds.studentlife.uiowa.edu/](https://sds.studentlife.uiowa.edu/) for information.

Nondiscrimination in the Classroom

The University of Iowa is committed to making the classroom a respectful and inclusive space for all people irrespective of their gender, sexual, racial, religious or other identities. Toward this goal, students are invited to optionally share their preferred names and pronouns with their instructors and classmates. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity, diversity@uiowa.edu, or visit diversity.uiowa.edu.
Academic Honesty
All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College's Code of
Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding
the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of
others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing
academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or

CLAS Final Examination Policies
The final examination schedule for each class is announced by the Registrar generally by the fifth week of
classes. Final exams are offered only during the official final examination period. No exams of any kind are
allowed during the last week of classes. All students should plan on being at the UI through the final
examination period. Once the Registrar has announced the date, time, and location of each final exam, the
complete schedule will be published on the Registrar's web site and will be shared with instructors and
students. It is the student's responsibility to know the date, time, and place of a final exam.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and
then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty,
and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a
safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See
the UI Office of the Sexual Misconduct Response Coordinator for assistance, definitions, and the full University
policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if
necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and
the siren warning system, visit the Department of Public Safety website.