Data Structures and Algorithms in Java
Course Mechanics
Website

https://www.swamiiyer.net/cs210

What's on the Site?

• Announcements (landing page)
• Course Info
• Calendar
• Lecture Material
• Assignments
• Resources
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Goal

Survey some of the most important algorithms and data structures that are in use today.
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Survey some of the most important algorithms and data structures that are in use today
Prerequisites

CS110 (Introduction to Computing) with a grade of C- or better

or

Permission of the instructor
Prerequisites

CS110 (Introduction to Computing) with a grade of C- or better or

Permission of the instructor
Instructor

Name: Swami Iyer (Senior Lecturer, Computer Science Department)

Academic Interests: Evolutionary dynamics on complex networks, coding, pedagogy

Contact Information:
• Office: M-3-201-14
• Email: siyer@cs.umb.edu (start subject line with [CS210])

Office Hours:
• Tue Thu 9:30 AM – 10:30 AM and 2:30 PM – 3:30 PM (in-person)
• Wed 10:00 AM – 12:00 PM (remote)
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<tr>
<th>Class</th>
<th>Section</th>
<th>When</th>
<th>Where</th>
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<tbody>
<tr>
<td>1 – 3</td>
<td>Tue Thu</td>
<td>12:30 PM – 1:45 PM</td>
<td>Y-1-1300</td>
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<table>
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Supplemental Instruction (SI): details to be determined
Tutoring: available through Subject Tutoring Program
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Grading Scheme

- Programming Assignments (best 5 out of 6) 40%
- Exams (1 and 2) 50%
- Participation 10%

- Programming assignment: interesting computational problems
- Exam: programming (Oct 22/24 and Dec 3/5) and written (Oct 31 and Dec 12)
- Participation: in-class quizzes (lowest 5 scores dropped, 8%) and discussion attendance (2%)

- Up to 1% extra points for unused late days
- Up to 2% extra points for attending the SI sessions

- Up to 0.01x% extra points if x% of the class completes the end-of-semester course evaluation

- If overall score is within 0.5% of a higher grade, it will be elevated to that grade
## Grading Scheme

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<th>Assessment</th>
<th>% of Final Grade</th>
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<tr>
<td>Programming Assignments (best 5 out of 6)</td>
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<tr>
<td>Exams (1 and 2)</td>
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<td>Participation</td>
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Programming assignment: interesting computational problems

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Software

- iClicker
- Piazza
- Gradescope
- Programming environment
- Zoom
Software

iClicker

Piazza

Gradescope

Programming environment

Zoom
Policies

Classroom

Piazza

Makeup Exam

Late Days

Regrade Request

Collaboration

Accommodations for students with disabilities

Campus Closure
Immediate Action Items

- Sign up for iClicker
- Sign up for Piazza
- Sign up for Gradescope
- Setup the programming environment
- Fill out the questionnaire available on Gradescope
- Complete the SI poll
- Sign up for CS account
- Math primer
- Command-line primer
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Topics Covered

Chapter 1: Procedural Programming
• Your First Programs
• Basic Data Types
• Control Flow
• Arrays
• Input and Output
• Defining Functions

Chapter 2: Object-oriented Programming
• Using Data Types
• Defining Data Types
• Design Principles
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Chapter 3: Algorithms and Data Structures
• Analysis of Algorithms
• Basic Data Structures
• Union-find

Chapter 4: Sorting
• Elementary (Bubble, Selection, Insertion, and Shell) Sorts
• Merge Sort
• Quick Sort
• Priority Queues
• Applications

Chapter 5: Searching
• Symbol Tables
• Hash Tables
• Binary Search Trees
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