

Course Mechanics

Data Structures and Algorithms in Java

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Grading Scheme

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Topics Covered

Website

Website

<https://swamiiyer.net/cs210>

Website

`https://swamiiyer.net/cs210`

Stuff on the site:

Website

`https://swamiiyer.net/cs210`

Stuff on the site:

- Announcements (landing page)

Website

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Stuff on the site:

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- Course Info

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- Resources

Goal

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

Prerequisites

Prerequisites

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

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

Permission of the instructor

Staff

Staff

Instructor:

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Instructor:

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

Staff

Instructor:

- Name: Swami Iyer (Senior Lecturer I, Computer Science Department)
- Office: M-3-201-14

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- Email: siyer@cs.umb.edu (start subject line with [CS210])

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- Website: <https://swamiiyer.net>

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- Office Hours:

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- Office Hours:
 - Tue Thu 8:00 AM – 9:00 AM and 2:30 PM – 3:30 PM (in-person)

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Teaching Assistants (TAs): Navkar Jain, Zhen Lu

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Course Assistants (CAs): Azal Khaled, Sarah Wilkinson

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Course Assistants (CAs): Azal Khaled, Sarah Wilkinson

Supplemental Instruction (SI) Leader: Arianna Fernandez

Sessions

Sessions

Class:

Section	When	Where
1 - 4	Tue Thu 12:30 PM - 1:45 PM	Y-2-2120

Sessions

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1 - 4	Tue Thu 12:30 PM - 1:45 PM	Y-2-2120

Discussion:

Section	When	Where
1	Tue 11:00 AM - 12:15 PM	W-1-0044
2	Thu 11:00 AM - 12:15 PM	M-1-0418
3	Tue 2:00 PM - 3:15 PM	W-1-0046
4	Thu 2:00 PM - 3:15 PM	W-1-0044

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Supplemental Instruction (SI): details to be determined

Sessions

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Section	When	Where
1 - 4	Tue Thu 12:30 PM - 1:45 PM	Y-2-2120

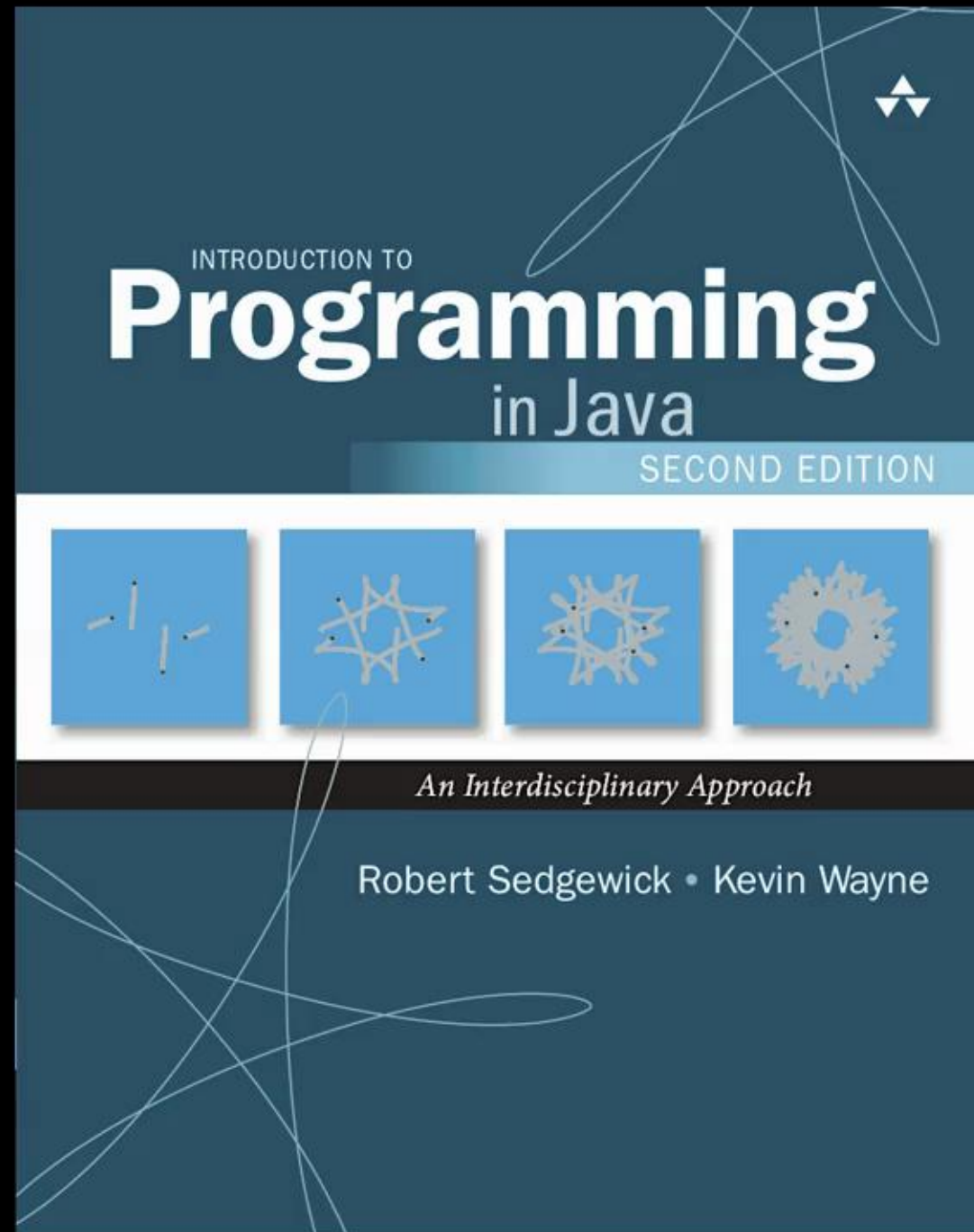
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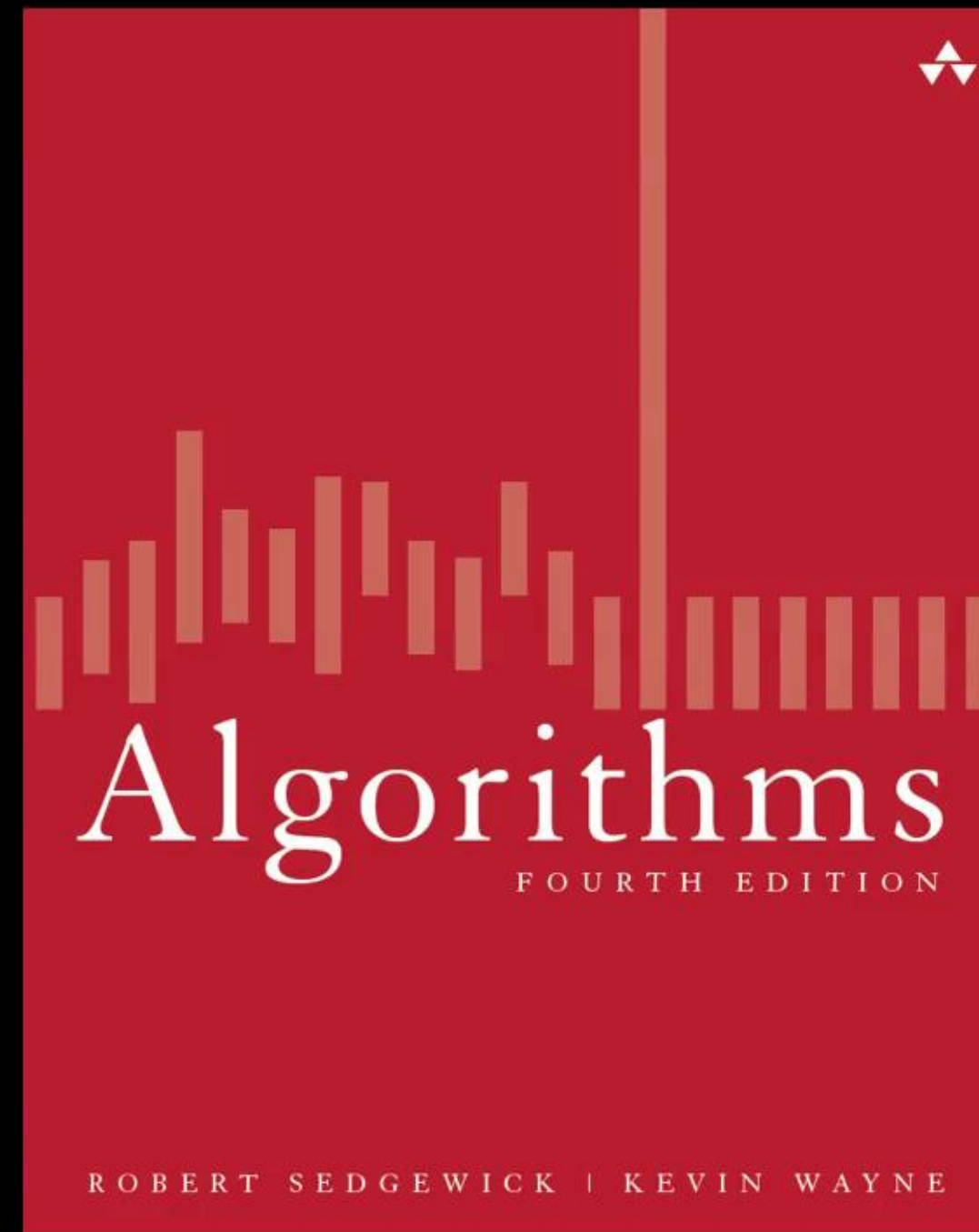
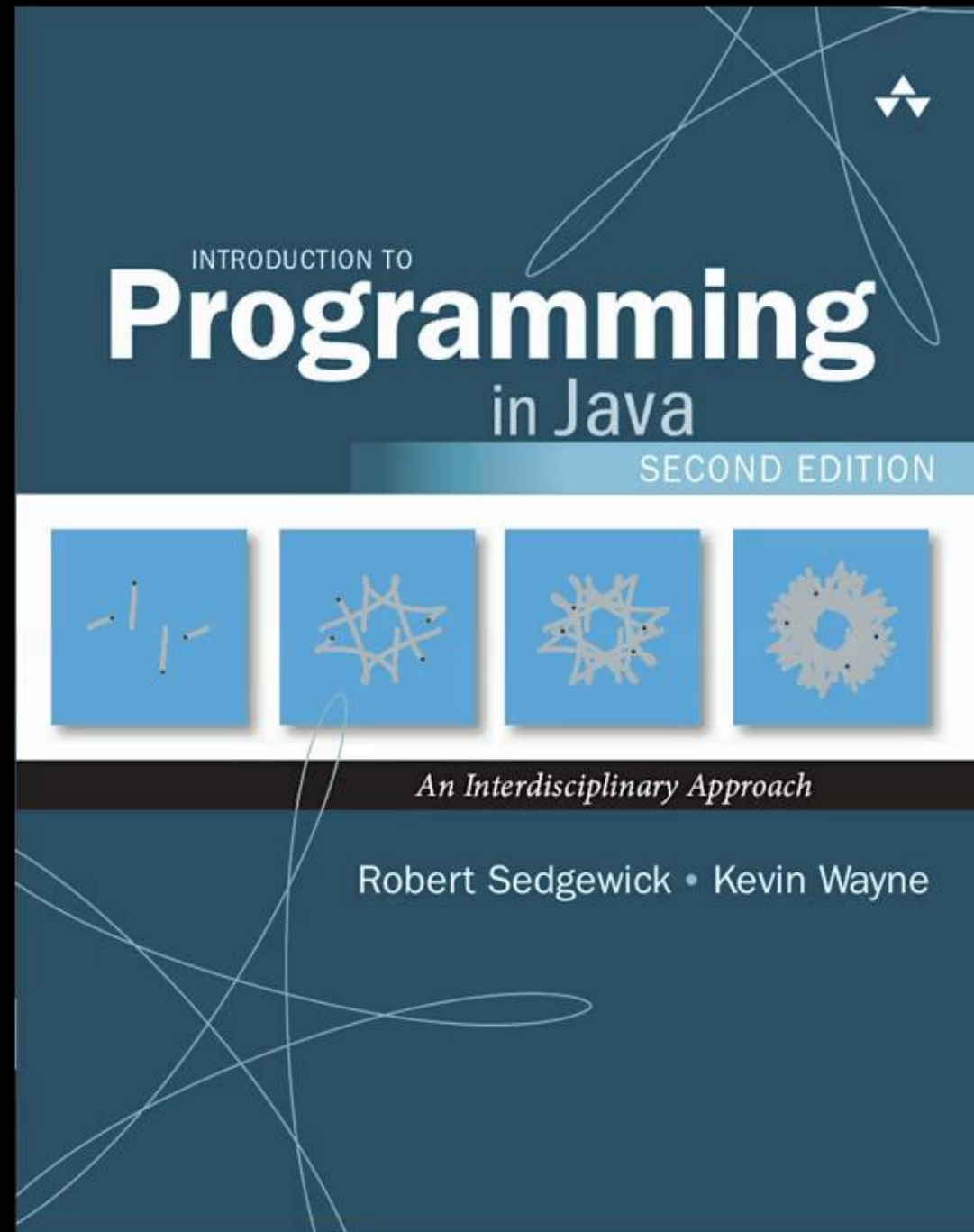
Supplemental Instruction (SI): details to be determined

Tutoring: available through the Subject Tutoring Program

Texts



Texts



Grading Scheme

Grading Scheme

Assessment	% of Final Grade
Programming Assignments (best 5 out of 6)	20
Exams (2)	70
Participation	10

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Programming assignments: biweekly, on interesting computational problems

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Participation: best 10 in-class quizzes (7%) and discussion attendance (3%)

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If each exam score is at least 87 (B+), the higher score will be taken as the exam average

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Up to 2% extra points for attending the SI sessions

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Up to 2% extra points for attending the SI sessions

Up to 1% extra points for completing the end-of-semester course evaluation

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

Software

Software

Piazza

Software

Piazza

Gradescope

Software

Piazza

Gradescope

Programming Environment

Software

Piazza

Gradescope

Programming Environment

Zoom

Policies

Policies

Classroom

Policies

Classroom

Piazza

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Assignment Deadline

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Assignment Deadline

Regrade Request

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Assignment Deadline

Regrade Request

Collaboration

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Assignment Deadline

Regrade Request

Collaboration

Accommodations for Students with Disabilities

Policies

Classroom

Piazza

Excused Absence from Discussion and Makeup Exam

Assignment Deadline

Regrade Request

Collaboration

Accommodations for Students with Disabilities

Campus Closure

Immediate Action Items

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Sign up for Piazza

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Sign up for Gradescope

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Sign up for Piazza

Sign up for Gradescope

Set up the programming environment

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Set up the programming environment

Fill out the course agreement available on Gradescope

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Complete the SI poll

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Complete the SI poll

Sign up for CS account

Topics Covered

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Chapter 1 (Procedural Programming):

Topics Covered

Chapter 1 (Procedural Programming):

- Your First Programs

Topics Covered

Chapter 1 (Procedural Programming):

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- Basic Data Types

Topics Covered

Chapter 1 (Procedural Programming):

- Your First Programs
- Basic Data Types
- Control Flow

Topics Covered

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- Basic Data Types
- Control Flow
- Arrays

Topics Covered

Chapter 1 (Procedural Programming):

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- Basic Data Types
- Control Flow
- Arrays
- Input and Output

Topics Covered

Chapter 1 (Procedural Programming):

- Your First Programs
- Basic Data Types
- Control Flow
- Arrays
- Input and Output
- Defining Functions

Topics Covered

Mathematical

Physical

Chemical

Biological

Environmental

Social

Economic

Political

Cultural

Historical

Topics Covered

Chapter 2 (Object-oriented Programming):

Topics Covered

Chapter 2 (Object-oriented Programming):

- Using Data Types

Topics Covered

Chapter 2 (Object-oriented Programming):

- Using Data Types
- Defining Data Types

Topics Covered

Chapter 2 (Object-oriented Programming):

- Using Data Types
- Defining Data Types
- Design Principles

Topics Covered

Topics Covered

Chapter 3 (Algorithms and Data Structures):

Topics Covered

Chapter 3 (Algorithms and Data Structures):

- Analysis of Algorithms

Topics Covered

Chapter 3 (Algorithms and Data Structures):

- Analysis of Algorithms
- Basic Data Structures

Topics Covered

Chapter 3 (Algorithms and Data Structures):

- Analysis of Algorithms
- Basic Data Structures
- Union-find

Topics Covered

Topics Covered

Chapter 4 (Sorting):

Topics Covered

Chapter 4 (Sorting):

- Elementary (Selection, Insertion, and Shell) Sorts

Topics Covered

Chapter 4 (Sorting):

- Elementary (Selection, Insertion, and Shell) Sorts
- Merge Sort

Topics Covered

Chapter 4 (Sorting):

- Elementary (Selection, Insertion, and Shell) Sorts
- Merge Sort
- Quick Sort

Topics Covered

Chapter 4 (Sorting):

- Elementary (Selection, Insertion, and Shell) Sorts
- Merge Sort
- Quick Sort
- Priority Queues

Topics Covered

Chapter 4 (Sorting):

- Elementary (Selection, Insertion, and Shell) Sorts
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- Priority Queues
- Applications

Topics Covered

Topics Covered

Chapter 5 (Searching):

Topics Covered

Chapter 5 (Searching):
- Symbol Tables

Topics Covered

Chapter 5 (Searching):

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- Hash Tables

Topics Covered

Chapter 5 (Searching):

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- Binary Search Trees

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