


<h2>Data Structures</h2> <p>Department of Computer Science Spring 2024</p>	
<p><b>Instructor Info</b> <b>Dr. Behrooz Mansouri</b> <b>Phone:</b> (207) 780-4240 <b>Email:</b> <a href="mailto:behrooz.mansouri@maine.edu">behrooz.mansouri@maine.edu</a> <b>Office:</b> Room 224 Science Bldg. <b>Student Hours:</b> Monday 10:30 – 11:30, Tuesday 12 – 14</p>	<p style="text-align: right;"><b>Course Meetings</b></p> <p>Luther Bonney 512, Portland USM Campus Mo-We 12:30 - 13:45 Luther Bonney 203, Portland USM Campus We 11:00 - 11:50</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"><p><b>Services &amp; Policies that Support You</b></p></div> <p style="text-align: center;"><a href="https://mycampus.maine.edu/group/usm/common-syllabus">Academic Services &amp; Policies</a><sup>1</sup></p>

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## 1. Course Information

### 1A. Course Description

Basic abstract data types and their representations, fundamental algorithms, and algorithm analysis. Consideration is given to applications. Specific topics include linked structures, trees, searching and sorting, priority queues, graphs, and hashing. Course requirements include substantial programming.

### 1B. Course Materials & Books

#### *Required*

- Data Structures: Abstraction and Design Using Java, Fourth Edition, by Koffman & Wolfgang

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<sup>1</sup> <https://mycampus.maine.edu/group/usm/common-syllabus>



## 1C. Course Learning Outcomes

- An understanding of the operation and implementation of many important data structures and algorithms
- Use of mathematics to analyze and compare the performance of these data structures and algorithms
- An understanding of the efficiency tradeoffs of these data structures and their most appropriate applications

## 2. Coursework & Grading

### 2A. Grade Scale

This is a typical percentage-to-letter grade scheme for many U.S. postsecondary institutions.

100-93%	=	A	79-77%	=	C+
92-90%	=	A-	76-73%	=	C
89-87%	=	B+	72-70%	=	C-
86-83%	=	B	69-60%	=	D
82-80%	=	B-	59% or lower	=	F

### 2B. Course Grade Breakdown

Class Activities	5%
Quizzes	5%
Assignments	20%
Labs	20%
Midterm	20%
Final	30%



### 3. Class Schedule (First Half)

Date	Topic	Readings	Quiz	Assignment	Due
01/17	Introduction	Review Chapter 1			
01/22	Efficiency	Section 2.1		Assignment 1	
01/24	Simple Sorts, Comparable, Comparator – Lab 1	Sec 8.1–8.4			
01/29	Array lists	Sec 2.2–2.4	<b>Quiz 1</b>	Assignment 2	Assignment 1
01/31	Linked lists – Lab 2	Sec 2.5–2.6			
02/05	Iterators	Sec 2.7–2.10		Assignment 3	Assignment 2
02/07	Stacks – Lab 3	Sec 4.1–4.4			
02/12	Queues	Sec 4.5–4.8		Assignment 4	Assignment 3
02/14	Binary trees terminology & properties – Lab 4	Sec 6.1	<b>Quiz 2</b>		
02/19	Presidents Day				
02/21	Binary tree traversals, Recursion	Sec 6.2–6.3			Assignment 4
02/26	Binary search trees – Lab 5	Sec 6.4–6.5		Assignment 5	
02/28	Tree iterators				
03/04	Review				Assignment 5
03/06	Midterm				



## 4. Course-Specific Policies

### 4A. Attendance

Students are expected to attend all the classes in-person. If extenuating circumstances arise, you should communicate this to the instructor as soon as you reasonably can. **More than three absences will result in an “L” grade for this course, meaning the student has stopped attending.**

During the class:

- No late arrivals – Late arrival is considered as an absence and for labs students will not be graded and cannot join other teams
- No phone at any time
- Laptops can be open only and only if there is a class activity

### 4B. Late Work

Late submissions will be accepted up to 48 hours after the deadline, with a 20% penalty.

Assignment and project grades can be disputed within one week after the graded work is handed back.

### 4C. Class Cancellation

Under circumstances other than institution-wide closures, students will be notified 72 hours before the class.

### 4D. Inclement Weather Contingencies

Upon campus closure, the class may continue in an online mode using the class Zoom link.

### 4E. Assignments and Class Activities

Assignments may be done in teams of two students. Students are not allowed to change teammates.

- The role of each student should be clear in the assignment report
- The instructor can call the students in the office anytime for further explanation

Class Activities are done in groups of 3.

### 4F. Computer Science Lab

The COS computer lab is located in 103 Science, and is accessible by Huskie card access



whenever the building itself is open. Get your Huskie card programmed for access at the card office. Many of the computers in the COS lab run Linux. You will have accounts on these computers with permanent network storage.

## 5. Academic Services & Policies

For USM's most current information on services available to students and academic policies, see [The Academic Services & Policies Overview webpage](#)<sup>2</sup> where you will find specifics on the following:

- **Services to help you succeed**
  - Disability Accommodations, Plan for Academic Success, Access Textbooks and Technology, Work with a Trained Peer, Access Wellness Resources, Find Community.
- **University Policies**
  - Academic Integrity, Disability Accommodations, Acceptable Conduct In Class Settings, Course Evaluations, Covid Face Covering Requirement, Dropping/Withdrawal from the Course, Inclement Weather, Online Conduct,, Nondiscrimination Policy And Bias Reporting, Statement On Religious Observance For USM Students, and Title IX Statement, and Technology Requirements.



Scan the QR Code to go to the [Academic Services & Policies webpage](#)<sup>3</sup>

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