

# CS 61B Data Structures, Spring 2017



Instructor: Josh Hug  
 Lecture: MW 3-4 PM, Pauley Ballroom; F 3-4 PM, 320 Hertz Hall


## Announcements [[Past Announcements](#)]



Date	Announcement
1/25	Conceptual office hours are now available twice a week. See OH calendar below for details.

## Calendar

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
1	Wed 1/18	1.1	Intro, Hello World Java [video] [slides] [code]	Intro to Java [Solution]	Setting Up Your Computer	HW 0: Basic Java Programs (optional)
	Fri 1/20	1.2	Defining and Using Classes [video] [slides] [code]		javac, java, git (due 1/27)	
2	Mon 1/23	2.1	References, Recursion, and Lists [video] [slides] [code]	Scope, Pass-by-Value, Static [Solution]	IntelliJ Home Setup  IDEs (due 1/27)	Project 0: NBody (due 1/27 @ 11:59PM)
	Wed 1/25	2.2	SLists, Nested Classes, Sentinel Nodes [video] [slides] [code]			
	Fri 1/27	2.3, 2.4	DLists, Arrays [video] [slides] [code]			
3	Mon 1/30	2.5	ALists, Resizing, vs. SLists [video] [slides] [code]	Linked Lists, Arrays [Solution]	Testing, Debugging (due 2/3)	Project 1A: Data Structures (due 2/3 @ 11:59 PM)

Main	Course Info	Staff	Assignments	Resources	Piazza 	OH Queue 
	Wed 2/1	TDD is dead, Unit Tests Are Waste, Response	Testing [video] [slides] [code]			
	Fri 2/3	(Still TBA)	Inheritance, Implements [video] [slides] [code]			
4	Mon 2/6	(Still TBA)	Extends, Casting, Higher Order Functions [video] [slides] [code]	Inheritance [Solution] ----- Inheritance Exam Prep [Solution] [Video]	Peer Code Review (due 2/10)	Project 1B: Testing and HoFs (due 2/10 @ 11:59 PM)
	Wed 2/8	TBA	Subtype Polymorphism vs. HoFs [video] [slides] [code]			
	Fri 2/10	None	Libraries, Abstract Classes, Packages [video] [slides] [code]			
5	Mon 2/13	TBA	Coding in the Real World, Review [video] [slides]	Midterm Review	Getting Started: Project 2	Midterm 1 (Date 2/14, 7-9PM) Material up to 2/8
	Wed 2/15	TBA	Generics, Autoboxing [video] [slides] [code]			HW 1: Java Syntax and Sound Synthesis (due 2/22)
	Fri 2/17 Drop Deadline	TBA	Exceptions, Iterators, Iterables [video] [slides] [code]			
6	Mon 2/20	Academic Holiday				

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	Wed 2/22	TBA	Access Control, Objects [video] [slides]	Selecting ADTs [Solution]	Project 2 Design Review	
	Fri 2/24	TBA	Encapsulation, Lists, Delegation vs. Extension [video] [slides]	Selecting ADTs Exam Prep [Solution] [Video]		
7	Mon 2/27	Algs 170-198 (top paragraph)	Asymptotics I [video] [slides] [guide]	Asymptotic Analysis I [Solution]	Work on Project 2	Project 2: Database (due 3/6)
	Wed 3/1	Algs 170-198	Asymptotics II [video] [slides] [guide]	Asymptotic Analysis Exam Prep [Solution] [Video]		
	Fri 3/3	Algs 170-198	Asymptotics III [video] [slides] [guide]			
8	Mon 3/6	Algs 216-233	Disjoint Sets [video] [slides] [guide]	Asymptotic Analysis II [Solution]	Tree Maps (due 3/10)	HW 2: Percolation (due 3/15)
	Wed 3/8	Algs 396-406	Trees, BSTs [video] [slides] [guide]	Asymptotic Analysis II Exam Prep [Solution] [Video]		
	Fri 3/10	Algs 424-431, 432-448 (extra)	Balanced BSTs [video] [slides] [guide]			
9	Mon 3/13	Algs 458-468, 478-479, 468-475 (extra)	Hashing [video] [slides] [guide]	Hashing [Solution] [Video]	Hash Maps (due 3/17)	
	Wed 3/15	Algs 308-320	Heaps [video] [slides] [guide]	Hashing Exam Prep [Solution] [Video]		

Main	Course Info	Staff	Assignments	Resources	Piazza 	OH Queue 
	Fri 3/17	None	Trees, incl. Geometric [video] [slides] [guide]			
10	Mon 3/20	Algs 515-537	Graphs [video] [slides] [guide]	Heaps and Graphs [Solution] <hr/> Heaps and Graphs Exam Prep [Solution] [Video]	Heap Min PQ (due 3/24)	HW 3: Puzzle Solver (due 3/23)
	Wed 3/22	Algs 538-542, 566-583	Graph Traversals [video] [slides] [guide]			
	Fri 3/24	None	Regular Expressions [video] [slides] [code]			
Spring Break (March 27-31)						
11	Mon 4/3	Algs 638-657	Shortest Paths [video] [slides] [guide]	Graphs [Solution] <hr/> Graphs Exam Prep [Solution] [Video]	Midterm 2 Review	HW 4: Hashing (due 4/6)
	Wed 4/5	Algs 604-630	MSTs [video] [slides] [guide]			
	Fri 4/7	N/A	Midterm 2 Review [slides]			
12	Mon 4/10	Algs 244-275, 323-327	Basic Sorting Algorithms [video] [slides] [guide]	Graphs, Sorting [Solution] <hr/> MST/SP Exam Prep [Solution]	Merge and Quick Sort (due 4/14)	Project 3: BearMaps (due 4/19)
	Wed 4/12	Algs 288-296, 302	Basic Sorts, Quick Sort [video] [slides] [guide]			

	Fri 4/14	Algs 341-347	Sort, Stability, Shuffling [video] [slides] [guide]			
13	Mon 4/17	Algs 279-282	Sorting and Algorithmic Bounds [video] [slides] [guide]	<a href="#">More Sorting [Solution]</a> <hr/> <a href="#">Sorting Exam Prep [Solution]</a>	Radix Sort (due 4/21)	
	Wed 4/19	Algs 702-718	Radix Sorts [video] [slides] [guide]			
	Fri 4/21	Algs 730-752	Overview, Tries [video] [slides] [guide]			
14	Mon 4/24	None	Compression [video] [slides] [guide]	Goodbye, Fun	Fractal Sound	HW 5: Seam Carving (due 4/26)
	Wed 4/26	None	Reductions, Algorithmic Bounds, NP Completeness [video] [slides] [guide]			
	Fri 4/28	None	Summary, Fun [slides]			
RRR Week (May 2-6)					Lab 15: HugLife	
Finals Week (May 9-13)						

### Lab/Discussion Schedule

Jan 15 – 21, 2017

	Sun 1/15	Mon 1/16	Tue 1/17	Wed 1/18	Thu 1/19	Fri 1/20
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