

CS106A Syllabus

This handout contains the tentative syllabus for CS106A. Depending on how quickly we're able to make it through the material, we may end up spending more or less time on each of these topics. Readings should be done **before** the lecture for which they are assigned.

Date	Topics	Readings	Assignments
M January 6	<i>Why learn to program computers?</i> Course Information Meet Karel the Robot		
W January 8	<i>How can a computer make decisions?</i> Programming with Karel Control Structures in Karel	Karel: Chs. 1-3	Assignment 1 Out
F January 10	<i>How do you solve complex problems?</i> Problem-Solving with Karel Program Decomposition	Karel: Chs. 4-6	
M January 13	<i>How are modern programs structured?</i> Introduction to Java Classes and Objects	Java: Chs. 1-2	
W January 15	<i>How do you generate and manipulate data?</i> Variables, Values, and Types Arithmetic Expressions	Java: Ch. 3	
F January 17	<i>How do we control what a program does?</i> Arithmetical Expressions Control Structures	Java: Ch. 4	Assignment 1 Due Assignment 2 Out
M January 21	Martin Luther King, Jr. Day No Class		
W January 22	<i>How do we make code reusable?</i> Control Structures Methods and Parameters	Java: Ch. 5	
F January 24	<i>How do programs communicate information?</i> Methods and Parameters	Java: Ch. 6	
M January 27	<i>How does a computer produce animation?</i> More on Parameters Animation		
W January 29	<i>How can computers respond to human input?</i> Randomness Events	Java: Ch. 9.1-9.3	
F January 31	<i>How do all these pieces fit together?</i> Putting Everything Together Parameters and Objects	Java: Ch. 9.4 Java: Ch. 10.1-10.4	Assignment 2 Due Assignment 3 Out

Date	Topics	Readings	Assignments
M February 3	<i>How do computers manipulate text?</i> Strings and Characters String Processing	Java: Ch. 8.1-8.4	
W February 5	<i>How is text represented in a computer?</i> Characters as Data Classes and Objects	Java: Ch. 8.5	
F February 7	<i>Why can different objects be treated uniformly?</i> Inheritance The Graphics Hierarchy Revisited	Java: Ch. 7	
M February 10	<i>How do computers process large data sets?</i> File Processing Exception Handling	Java: Ch. 12.4	Assignment 3 Due Assignment 4 Out
W February 12	<i>How do computers store large data sets?</i> ArrayList Data-Driven Programs	Java: Ch. 11	
First Midterm Exam 7:00PM – 10:00PM, Location TBA			
F February 14	<i>How does a computer represent sound?</i> Arrays Manipulating Sound		
M February 17	Presidents' Day No Class		
W February 19	<i>How does a computer represent images?</i> Multidimensional Arrays Manipulating Images		Assignment 4 Due Assignment 5 Out
F February 21	<i>How do we associate data with one another?</i> HashMap	Java: Ch. 13	
M February 24	<i>How do you fix errors in programs?</i> Debugging Strategies		
W February 26	<i>How do we get precise input from the user?</i> Swing Interactors Action Listeners		
F February 28	<i>How do we control the layout of our programs?</i> Graphical User Interfaces Component Listeners	Java: Ch. 10.5-10.6	Assignment 5 Due Assignment 6 Out
M March 3	<i>Are all algorithms created equal?</i> Searching and Sorting	Java: Ch. 12.1-12.3	
W March 5	<i>How do we represent data efficiently?</i> Collections		
Second Midterm Exam 7:00PM – 10:00PM, Location TBA			

Date	Topics	Readings	Assignments
F March 7	<i>How do we model connections between objects?</i> Graphs and Networks		
M March 10	<i>How do multiple computers communicate?</i> Networking		
W March 12	<i>What does programming look like after CS106A?</i> Java in the Real World		Assignment 6 Due Assignment 7 Out
F March 14	<i>What's next in computer science?</i> Where to Go from Here		
F March 21	Assignment 7 Due at 11:30AM No Late Submissions Accepted		