

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 7	<i>Why learn to program computers?</i> Course Information Meet Karel the Robot		
W January 9	<i>How can a computer make decisions?</i> Programming with Karel Control Structures in Karel	Karel: Chs. 1-3	Assignment 1 Out
F January 11	<i>How do you solve complex problems?</i> Problem-Solving with Karel Program Decomposition	Karel: Chs. 4-6	
M January 14	<i>How are modern programs structured?</i> Introduction to Java Classes and Objects	Java: Chs. 1-2	
W January 16	<i>How do you generate and manipulate data?</i> Variables, Values, and Types Arithmetic Expressions	Java: Ch. 3	
F January 18	<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 23	<i>How do we make code reusable?</i> Control Structures Methods and Parameters	Java: Ch. 5	
F January 25	<i>How does a computer produce animation?</i> Methods and Parameters Animation	Java: Ch. 6	
M January 28	<i>How can computers respond to human input?</i> More on Parameters Randomness and Events		
W January 30	<i>How do all these pieces fit together?</i> Putting it all Together	Java: Ch. 9.1-9.3	Assignment 2 Due Assignment 3 Out
F February 1	<i>How is information communicated in a program?</i> Parameters and Objects Strings and Characters	Java: Ch. 9.4 Java: Ch. 10.1-10.4	

Date	Topics	Readings	Assignments
M February 4	<i>How do computers manipulate text?</i> String Processing	Java: Ch. 8.1-8.4	
W February 6	<i>How is text represented in a computer?</i> Characters as Data Classes and Objects	Java: Ch. 8.5	
F February 8	<i>Why can different objects be treated uniformly?</i> Inheritance The Graphics Hierarchy Revisited	Java: Ch. 7	Assignment 3 Due Assignment 4 Out
M February 11	<i>How do computers process large data sets?</i> File Processing Exception Handling	Java: Ch. 12.4	
First Midterm Exam 7:00PM – 10:00PM, Location TBA			
W February 13	<i>How do computers store large data sets?</i> ArrayList Data-Driven Programs	Java: Ch. 11	
F February 15	<i>How does a computer represent sound?</i> Arrays Manipulating Sound		
M February 18	Presidents' Day No Class		
W February 20	<i>How does a computer represent images?</i> Multidimensional Arrays Manipulating Images		Assignment 4 Due Assignment 5 Out
F February 22	<i>How do you fix errors in programs?</i> Debugging Strategies		
M February 25	<i>How do we associate data with one another?</i> HashMap	Java: Ch. 13	
W February 27	<i>How do we get precise input from the user?</i> Swing Interactors Action Listeners		
F March 1	<i>How do we control the layout of our programs?</i> Graphical User Interfaces Component Listeners	Java: Ch. 10.5-10.6	
M March 4	<i>Are all algorithms created equal?</i> Searching and Sorting	Java: Ch. 12.1-12.3	Assignment 5 Due Assignment 6 Out
W March 6	<i>How do we represent data efficiently?</i> Collections		

Date	Topics	Readings	Assignments
F March 8	<i>How do we model connections between objects?</i> Graphs and Networks		
M March 11	<i>How do multiple computers communicate?</i> Networking		
	Second Midterm Exam 7PM – 10PM, Location TBA		
W March 13	<i>What does programming look like after CS106A?</i> Java in the Real World		Assignment 6 Due Assignment 7 Out
F March 15	<i>What's next in computer science?</i> Where to Go from Here		
Th March 21	Assignment 7 Due at 3:15PM No Late Days		