CS 115 Introduction to Computer Science Syllabus

The syllabus below describes a recent offering of the course, but it may not be completely up to date. For current details about this course, please contact the course coordinator. Course coordinators are listed on the course listing for undergraduate courses and graduate courses.

Text Books

Required
Christine Alvarado, Zachary Dodds, Geoff Kuenning, Ran Libeskind-Hadas, *CS for All*, http://www.cs.hmc.edu/csforall

Week-by-Week Schedule

Week	Topics Covered	Reading	Assignments
1	Elementary concepts of computer programming	Chapter 1	Picobot program
2	Simple Python data types, list concept	Sections 2.1 to 2.4	
3	Definition of Python functions, if/then/else concept	Sections 2.5 and 2.6	
4	Recursion on lists	Sections 2.7 and 2.8	Recursion muscles
5	Filtering, map/reduce	Sections 3.1 to 3.4	Scrabble scoring
6	Functions as values	Sections 3.5 to 3.7	
7	Hardware representation of basic data types	Sections 4.1 to 4.2	Python code for integer representation
8	Assembly language programming using HMMM simulator	Sections 4.4 to 4.6	HMMM functions
9	Iteration	Sections 5.1 to 5.3	Optimal Nim play
10	Representation of data: atomic vs. composite, mutable vs. immutable	Section 5.4	Written exercises: draw memory diagrams
11	Sorting	Section 5.5	
12	Object oriented programming: class concept	Sections 6.1 to 6.3	Date class
13	Object oriented programming: inheritance	Parts of chapter 6, additional material	Standings for various sports leagues
14	Asymptotic complexity	Parts of chapter 7	Written exercises: determine big-O run time