CSC Computer Science

CSC 121 Computer Science I (3-2) 4 crs.
The first in a sequence of courses for majors in Computer Science, Mathematics, and Engineering. Introduces a disciplined approach to problem-solving and algorithm development, in addition to an introduction to procedural and data abstraction. Covers: selection, repetition, and sequence control structures; program design, testing, and documentation using good programming style; block-structured high-level programming languages; and arrays, records, and files. IAI CS911
Prerequisite: MTH 070 (Plane Geometry) with a grade of C or better or Geometry Waiver; AND college-level placement in mathematics. https://www.harpercollege.edu/testing/mathplacement.php

CSC 122 Computer Science II (3-2) 4 crs.
The second in a sequence of courses for majors in Computer Science. Covers: design and implementation of large-scale problems; abstract data types; data structures (files, sets, lists, stacks, queues, and trees); program verification and complexity; recursion; dynamic concepts (memory, scope, block structures); text processing; and an introduction to searching and sorting algorithms. This course will use the same programming language as CSC 121: Computer Science I (IAI CS911: Computer Science I). IAI CS912
Prerequisite: CSC 121 Computer Science I (IAI CS911 Computer Science I) with grade of C or better.

CSC 211 Introduction to C Programming and UNIX (3-2) 4 crs.
Develops working knowledge in the use of the computer in the C programming language. Includes problem formulation, data storage and retrieval, algorithms, flowcharts or pseudocode, numerical analysis and structural programming, lexical analysis and string manipulation. Introduces student to a UNIX-like operating system environment. Intended for the computer science or engineering student.
Prerequisite: CSC 121 with a grade of C or better, or consent of instructor.

CSC 214 Java Programming (3-2) 4 crs.
Introduces the Java language in a UNIX environment. Includes algorithms, problem formulation, structured programming, variables, data types, input/output repetition, selection, arrays, functions, classes/objects, stacks, queues, linked structures, and recursion. Applications emphasize math, science, engineering, and computer science. This course will build on topics covered in CSC 121 (only in a new language).
Prerequisite: CSC 121 with a grade of C or better, or consent of instructor.

CSC 216 Data Structures and Algorithm Analysis (3-2) 4 crs.
This course is only offered in the spring term.
Provides exposure to techniques for storing and manipulating data. Includes discussion of insertion, deletion, and retrieval algorithms for stacks, queues, deques, linked lists, trees, etc. Emphasizes algorithm analysis as it builds on topics from previous course (CSC 122). Emphasizes mathematics, engineering, science, and computer science applications. Designed as the third of a sequence of courses (CSC 121, CSC 122, CSC 216 and CSC 217) for students majoring in Computer Science.
Prerequisite: CSC 122 with a grade of C or better, or consent of instructor.

CSC 217 Assembler Programming and Machine Organization (3-2) 4 crs.
Emphasizes machine-level programming, instruction sets, data representation, subroutines, I/O hardware and software, linking and loading related to higher level languages. Designed as the fourth in a sequence of courses (CSC 121, CSC 122, CSC 216 and CSC 217) for students majoring in Computer Science.
Prerequisite: CSC 216 with a grade of C or better, or consent of instructor.