

COMPSCI 121 Introduction to Problem Solving with Computers

4 Credits

INSTRUCTOR(S): Robert Moll

COMPSCI 121 provides an introduction to problem solving and computer programming using the programming language Java. The course teaches how real-world problems can be solved computationally using the object-oriented metaphor that underlies Java. Concepts and techniques covered include data types, expressions, objects, methods, top-down program design, program testing and debugging, state representation, interactive programs, data abstraction, conditionals, iteration, interfaces, inheritance, arrays, graphics, and GUIs. No previous programming experience required. A companion introduction to programming class, COMPSCI 119 is also offered. If you are fairly sure you only want to do just one programming class, take that course; if you think it likely that you will do more than one programming course, take 121. Use of computer is required. Prerequisite: R1 (or a score of 20 or higher on the math placement test Part A), or one of the following courses: MATH 101&102 or MATH 104 or MATH 127 or MATH 128 or MATH 131 or MATH 132. 4 credits.

COMPSCI 187 Programming with Data Structures

4 Credits

INSTRUCTOR(S): Timothy Richards, Gordon Anderson

The course introduces and develops methods for designing and implementing abstract data types using the Java programming language. The main focus is on how to build and encapsulate data objects and their associated operations. Specific topics include linked structures, recursive structures and algorithms, binary trees, balanced trees, and hash tables. These topics are fundamental to programming and are essential to other courses in computer science. The course involves weekly programming assignments, in-class quizzes, discussion section exercises, and multiple exams. Prerequisites: COMPSCI 121 (or equivalent Java experience). A grade of B or better in COMPSCI 121 (or a grade of C or better in COMPSCI 186 (or COMPSCI 190D) is required for students enrolling in COMPSCI 187 and Basic Math Skills (R1). Basic Java language concepts are introduced quickly; if unsure of background, contact instructor. 4 credits.

COMPSCI 197Q Special Topics- Introduction to Structured Query Language

1 Credits

INSTRUCTOR(S): Gordon Anderson

This course provides a comprehensive introduction to the language of relational databases: Structured Query Language (SQL). Topics covered include: Entity-Relationship modeling, the Relational Model, the SQL language: data retrieval statements, data manipulation and data definition statements. All interactive reading problems involve the use of "live" SQL in the text "InteractiveSQL" (free). Homework problems will be done using databases running on software (SQLite) installed on student machines. This course is designed as a self-paced learning experience. The course is delivered in a series of assignments to provide a structure for students to work through the material. Students may work through the material at their own pace. All text and homework problems are available online. Instructor support is offered in an on-line format via chat sessions and forum postings. A final project will be developed and submitted by the end of the course. Software (free): SQLite- latest edition <http://www.sqlite.org/download.html>, DB Browser for SQLite <http://sqlitebrowser.org/> Prerequisites: Basic computer literacy including ability to create and manipulate files and install software. 1 credit.

COMPSCI 305 Social Issues in Computing

3 Credits

INSTRUCTOR(S): Michelle Trim

Through a careful analysis and discussion of a range of computing issues, topics, and policies, we will explore various impacts of computers on modern society. This class satisfies the Junior Year Writing requirement by providing directed practice and specific instruction in a range of writing genres. Students will produce approximately 20-25 pages of polished written work over the course of the semester. Prerequisite: ENGLWRIT 112 (or equivalent) and COMPSCI 220 and COMPSCI 230 and COMPSCI 240 (or COMPSCI 250). 3 credits.