

SCHOOL OF COMPUTER SCIENCE - Course Descriptions

Summer 2015

CMPSCI 121(CPE) Introduction to Problem Solving with Computers (R2) CREDITS 4

Robert Moll

CMPSCI 121 provides an introduction to problem solving and computer programming using the programming language Java; it also provides an integrated introduction to some of the wonderful innovations to modern science and indeed modern life that can be attributed to computer science. 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. This can be a challenging course. If you prefer a more modest introduction to computing, you should consider CMPSCI 119 (Introduction to Programming), which however is only offered during the academic school year and is not offered online. CMPSCI 121 is taught using a free online interactive textbook, which is ideal for the distance-learning format of this course. Computer use is of course required for this class. Prerequisite: R1 (basic math skills). 4 credits.

CMPSCI 187(CPE) Programming with Data Structures (R2) CREDITS 4

Timothy Richards

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. There will be weekly intensive programming assignments, online quizzes, group discussions, and other online-related activities. There will also be several online/take-home exams. Prerequisites: CMPSCI 121 (or equivalent Java experience) and Basic Math Skills (R1). Basic Java language concepts are introduced quickly; if unsure of background, contact instructor. This course is offered entirely online. 4 credits.

CMPSCI 305(CPE) Social Issues in Computing CREDITS 3

Michelle Trim

Using a range of different disciplinary perspectives we will explore various impacts of computers on modern society. This exploration will focus primarily on the social impacts of computers, with an emphasis on ethical concerns. Students will gain practice in several technical communication genres, public writing, writing for electronic environments and academic writing. Students will produce approximately 20-25 polished pages of written work in addition to informal writing associated with class discussions. Class discussions will take place via an online forum, and students will be expected to post at least twice per week. Those posts will be among the graded components for the course. In lieu of a presentation, students will create short videos. No previous experience with making videos is needed. 3 credits.

CMPSCI 590AC(CPE) Introduction to Affective Computing CREDITS 3

Eva Hudlicka

Affective computing represents a broad, interdisciplinary research and practice area focusing on a range of topics, including: computational models of emotion, cognitive-affective architectures; affective user modeling; emotion sensing and recognition; emotion expression; and the use of emotions to improve human-computer interaction across a range of contexts including intelligent tutoring and gaming. This course will provide an introduction to affective computing through a combination of lectures, student presentations of selected literature, projects and class discussion. The course content and format will be appropriate for computer science, cognitive science, psychology, human factors, and industrial engineering students (advanced undergraduate / graduate). Prerequisite: Graduate or Senior level in Computer Science or Engineering, or permission of instructor. This course counts as a CS Elective toward the CMPSCI major (BA/BS). 3 credits.