

## Computer Science (CPS)

### **CPS 176 Introduction to Computer Programming**

4 Hours

Prerequisites: MAT 062 or equivalent

5 hours weekly (3-2)

This course provides an initial exposure to computers and programming, fostering competence in a high-level language via hands-on experience. This course serves as a prerequisite for more intensive study of other high-level languages and lays the groundwork for understanding problem-solving and common programming language constructs. Students will be introduced to structured programming methodologies, syntax and semantics of a popular, high-level programming language, algorithm development, and good programming style guidelines. Students will be expected to complete a variety of programming lab assignments both during scheduled lab times and outside of class. This course is also offered as part of a study abroad program. Contact the International Education Coordinator for more information.

### **CPS 202 Discrete Structures (Also MAT 125)**

IAI – CS 915, IAI – MI 905

3 Hours

Prerequisites: MAT 108 or MAT 111 either with a grade of “C” or higher or assessment

3 hours weekly (3-0)

This course is a general education mathematics course which fulfills 3 hours of the core curriculum mathematics requirement. Topics include number systems, sets, relations and functions, logic, Boolean algebra, elementary matrix operations, combinations, permutations,

counting techniques, and basic concepts of probability, graphs, and trees.

**This course is ordinarily offered in the fall semester in odd numbered years.**

### **CPS 206 Computer Science I**

IAI – CS 911

4 Hours

Prerequisites: CPS 176 Introduction to Computer Programming with a grade of “C” or higher or consent of instructor and MAT 111 Pre-Calculus

5 hours weekly (3-2)

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 utilizing a popular, high-level programming language.

### **CPS 215 Computer Science II**

IAI – CS 912

4 Hours

Prerequisites: CPS 206 with a grade of “C” or higher or consent of instructor

5 hours weekly (3-2)

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, pointers, lists, stacks, queues, trees, graphs; program verification and complexity; recursion; dynamic concepts (memory, scope, block

structures); text processing; and an introduction to searching and sorting algorithms utilizing a popular, high-level programming language. **This course is offered in the fall semester only.**