Course Number: 3460:209
Course Name: Introduction to Computer Science
Course Credits: 4
Schedule: Fall, Spring, Summer
Syllabus Date: October 2007
Prepared By: Tim Margush and modified by Z.-H. Duan & Michael Collard

Prerequisites: Completion of 3450:145, 149 with C- or better or equivalent.


Bulletin Description: An introduction to problem-solving methods and algorithm development. Programming in a high-level language including how to design, code, debug and document programs using techniques of good programming style.

Detailed Description: This course introduces the students to the fundamental concepts in computer science. After a short description of computer hardware, it concentrates on the basic constructs of a high-level, object-oriented programming language: data types, arithmetic operations, control structures, methods, classes, arrays, strings, and IO. Extensive lab and programming assignments will help students to practice using the constructs to solve problems.

Course Goals: To learn the basic syntax of a high-level, object-oriented language, basic programming constructs and basic solution designs. Be able to design and code programs to solve real problems.

Topics:
- Introduction to computer systems, algorithms, programs, and Java
- Introduction to variables, literals, fundamental data types
- Decision structures
- Iteration structures
- Simple file I/O
- Introduction to methods, Objects and Classes
- Simple graphics user interface
- Introduction to Array and ArrayList
- Text processing and wrapper classes

Computer Usage: A series of weekly computer-based labs and 8-9 programming assignments.

References:
• *Introduction to Programming Using Java: An Object-Oriented Approach*, David Arnow and Gerald Weiss, Addison-Wesley
• *Java How To Program, Second Edition*, Deitel & Deitel, Prentice Hall
• *Thinking in Java, 3rd Edition*, Bruce Eckel, Prentice-Hall, 2002