Course Number: 3460:421/521
Course Name: Introduction to Object Oriented Programming
Course Credits: 3
Schedule: Fall (last offered Fall 2007)

Syllabus Date: August 28, 2007
Prepared By: Drs. Wolfgang Pelz and Yingcai Xiao

Prerequisites: Completion of 3460:316 with a grade of C- or better.

Text:
UML Distilled, Martin Fowler & Kendall Scott, Addison-Wesley
Thinking in C++, Volumes 1 & 2, Bruce Eckel, PH/PTR

Bulletin Description:
Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.

Detailed Description:
An introduction to the object-oriented paradigm and how it relates to other models. Covers Unified Modeling Language (UML), C++, Design Patterns, Design by Contract, CRC Cards.

Course Goals:
The student will be able to model a system using object-oriented design techniques and then be able to implement the design using the C++ programming language. The student will also be able to identify the differences between Java and C++ features, and will be able to determine what tools are most appropriate for a given situation.

Topics:
1. Introduction
2. Basic C++
3. Basic UML
4. Design Patterns
5. Advanced C++
6. Advanced UML
7. Design by Contract
8. CRC Cards

Computer Usage:
Five programming assignments and a term project.

References:
The Unified Modeling Language User Guide, Booch et al, Addison-Wesley
UML Toolkit, Hans-Erik Eriksson et al, Wiley
UML in a Nutshell, Sinan Si Alhir, O’Reilly
Design Patterns, Erich Gamma et al, Addison-Wesley
Applying UML and Patterns, Craig Larman, Prentice-Hall
The Practice of Programming, Brian Kernighan et al, Addison-Wesley
C++: How to Program, Deitel & Deitel, Prentice Hall. (level 2/5)
C++ Primer", Stanley Lippman, Addison-Wesley. (level 3/5)
C++ for Java Programmers, Mark Allen Weiss, Pearson / Prentice Hall. (3/5)
The Annotated C++ Reference Manual, Bjarne Stroustrup and Margareth Ellis, Addison Wesley. (level 5/5)