

ECE373
Object Oriented Software Design
Department of Electrical and Computer Engineering
University of Arizona

Course Objective:

1. Introduce principles of object oriented design in software.
2. Introduce students to object oriented program development in two languages: Smalltalk, Java.
3. Introduce students to object oriented software engineering tools such as UML, and Rational Rose.

Text Book:

1. Mark Guzdial, *Object-Oriented Design with Multimedia Applications*, Prentice Hall, 2002.
2. Bruce Eckel, *Thinking in Java*, Prentice Hall, latest edition.
3. Handouts supplied by Dr. Marefat

Recommended Supplements:

1. Unified Modeling Language.
2. Martin Kalin, *Object Oriented Programming in Java*, Prentice Hall, 2001.

Instructor: Dr. Michael M. Marefat - marefat@ece.arizona.edu

Office: ECE 320G

Communications:

Website: www-isl.ece.arizona.edu/~ece373

Class email: ece373@ece.arizona.edu

Laboratory:

Lab Hours: This course has Lab sessions in addition to lectures. Lab sessions will cover materials that supplement class lectures. In addition to lab and office hours, you can send questions to ece373@ece.arizona.edu. Lab sessions will be held in room ECE 226.

Course Outline:

The course will include a number of programming assignments with larger assignments towards the end of the semester. Each assignment focuses on a subset of the studied topics given below:

1. Object Oriented versus procedural approach to programming
2. Classes, Instances, and Hierarchies, Instance variables and class variables
3. Messages, methods, protocols, private methods, shared methods, public methods
4. Inheritance, Polymorphism, Dynamic binding, identifier overloading
5. Unified Modeling Language: a CASE design tool
6. Object oriented classification and design techniques
7. Software development and object oriented elements in Smalltalk, Debugging techniques
8. The Visual Works environment, and the Collection classes
9. Software development and object oriented elements in Java
10. Intro to SQL Databases, and Database Interactions
11. Intro to client-server network programming
12. Intro to Graphical user interfaces and Model view controller paradigm

Electronic submission of assignments:

In ECE373 you will be submitting your programming assignments electronically to the class account. We will grade and return your graded assignments and score electronically. The class account is `ece373@ece.arizona.edu`. **It is the responsibility of the student to turn in the correct file(s) and to submit the work on time by executing the *turn in* command correctly. The clock for timing purposes is the clock on the ece computer. You can execute the *turnin* command any number of times before the final deadline for each assignment. Each new *turnin* will overwrite your previously turned in assignments. NO LATE ASSIGNMENTS WILL BE ACCEPTED.**

The class account is used to answer your questions about the class and assignments. **If you use other development platforms, you need to make sure your programs run on ece and the software we have provided for this class.**

Grading:

There will be 4-5 assignments, about 5 Labs, and an Exam. The break down will be as follows:

Assignments (4-5)	40 %
Labs (5-6)	10 %
Exam	50 %
TOTAL	100%

ACADEMIC INTEGRITY:

All the work that you submit in this course must be your own. Group efforts will be considered academic dishonesty (see the *University of Arizona Code of Academic Integrity*). **Any marked similarity in form, notation, or content between two submissions will be regarded as evidence of academic dishonesty. ACADEMIC DISHONESTY IS A SERIOUS OFFENSE THAT MAY RESULT IN SUSPENSION OR EXPULSION FROM THE UNIVERSITY. All assignments will be checked.**

You may discuss homework and assignments for the general approach with other students, but you may not consult any written work.