Rutgers University
Finance and Economics Department
Fall 2018
Special Topic Object-Oriented Programming I (22:839:614:40)

Instructor: Dr. John Jenq  jjenq@rutgers.edu
Time: Wednesday 6:00pm – 9:00pm @ 1WP 216
Office Hour: By appointment, WP 1105F
TA: Yuanhan Hu yuanhan.hu@rutgers.edu (Office Hour: Thursday. noon-2pm, MQF study area)
Recitation: Thursday 9am to 12pm @WP 216
Final Exam: Wed, Dec. 5, 2018
Final Project: Wed, Dec. 12, 2018
Textbook: C++ How to Program, by P. J. Deitel and H. M. Deitel, 10th ed. Prentice Hall,
ISBN13: 9780134448237

Course Description
This course assumes some computer programming language experience like C. It is designed for learning
object oriented programming using C++ programming language. Basic concepts such as data types, control
structures, classes design, class hierarchy, class libraries, inheritance, polymorphism, I/O handing, exceptions,
templates and standard template libraries will be covered. Other C++ features will also be covered. This
course is focus on hand-on experience of developing financial related computer applications

Course Outline
Introduction to Computers and C++ Programming
The basic of C++
C++ data type, expression
Input/output
Flow controls
Predefined functions and user defined functions
Function overloading
Call by reference and call by value
Stubs and Drivers for debugging functions
More on I/O
Arrays, Strings and vectors
Pointers and dynamic arrays
Definition of classes
Class components
Object interaction
Grouping objects
Designing classes
Friend functions
Operator overloading
Namespaces and separate compilations
Pointers and Linked lists
Stacks and queues Recursion
Class inheritance
Polymorphism
Handling errors and exceptions
Templates
Standard template library and other C++ library
C++ applications in finance
Evaluation

- Homework: 30%
- Midterm Exams: 30% (tentatively 10/3 and 11/7 each 15%)
- Projects: 15%
- Final Exam: 25%

Reference Text

- Problem Solving with C++, by Walter Savitch, 7th ed. Addison Wesley (easy for beginner)
- Introduction to C++ for Financial Engineers: An Object-Oriented Approach, by D. Duffy, Wiley
- Introduction to C++ for Financial Engineers: An Object-Oriented Approach, by D. Duffy, Wiley

Grades

A >=93, A- >=90-93, B+ >=86-89, B >=83-85, B- >=80-82, C+ >=76-79, C >=73-75, C- >=70-72, D+ >=66-69 D >=60-65, F<60