NEW YORK CITY COLLEGE OF TECHNOLOGY

THE CITY UNIVERSITY OF NEW YORK

Department of Computer Engineering Technology

300 Jay Street, Brooklyn, NY 11201-1909

CET 3640 – Software for Computer Control

Syllabus[1]

Term: Fall 2013
Credits: 3

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Office Hours: Monday/Wednesday 1:00 PM - 2:00 PM

Textbook:

Java How to Program (early objects), 9/E, Prentice Hall, 2011. Paul Deitel, Harvey Deitel. ISBN-10: 0132575663, ISBN-13: 9780132575669.

Your C++ Book

Course Description:

Programming concepts and software development techniques for computer-controlled systems. Laboratory exercises apply these concepts to a variety of systems and devices.

Prerequisites: CST 2403, CET 3510

Learning Objectives:

This course will introduce the students to software for computer control, moving from basic programming to intermediate level programming. It is assumed that the students have a working knowledge of assembly language, operating system (OS), and a high-level programming language such as C++. This course will reinforce that knowledge and teach them object-oriented programming, popular data structures, code portability, multi-platforms support, and how to use these for computer control. At the end of the course the student should be able to write and understand code that interacts with devices, the OS, and other software. Student should have object-oriented programming concepts and widely used data structures clear. Student's knowledge will be demonstrated in a project in which they must apply these concepts.

[1] The instructor reserves the right to modify the syllabus anytime.

Attendance:

The professor will take attendance at each class as it is required for you to be there. If you are absent more than twice you may receive a WU grade. Excessive lateness (more than 15 minutes) will be considered an absence. You must provide documentation for justified absences such as doctor's appointment, family emergency, jury duty, military service, etc. You are responsible for any material covered in class treated in class and compliance with deadlines.

Grading Criteria:

- **Quizzes and Homework:**

  There will homework and/or quizzes assigned regularly related to the material covered on class. Sharing ideas and engaging in intellectual discussions is encouraged, however individual assignments must represent the student's own work. No late homework or quizzes will be accepted.

- **Labs:**

  Labs will consist of programming assignments where you have to solve a particular problem using the programming techniques learned in class. No late labs will be accepted.

- **Midterm Exam:**

  A midterm exam will be administered to test the knowledge acquired up to half of the semester. Students are required to take exams the day and time they are scheduled. There is no make-up exam unless you have a valid reason according to CityTech's policy.

- **Project:**

  Students will work on a project where they will apply to a greater extent the concepts learned in the course. For the project students will work in groups and the deliverables are: proposal, implementation, report, and presentation.

- **Final Exam:**

  A final exam will be administered in the week of finals according to CityTech calendar. This exam is comprehensive, testing material for the entire semester. Students are required to take the exam the day and time scheduled. There is no make-up exam unless you have a valid reason according to CityTech's policy.

Academic Integrity:

Students and others individuals who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion.

General:

Refer to the schedule of classes for appropriate deadlines and procedures. Course material as well as assignments and labs will be distributed electronically on Blackboard and on the class website. It is your responsibility to checked for new material frequently. Ignorance of applicable deadlines and procedures is not a basis for a waiver of existing regulations.

Course Schedule:

Programming Review: Review of programming language concepts and commands such variables, operators, functions, decision statements, loops etc. Review of C++ and comparison to Java. Transition from C++ to Java. Weeks 1-3

Object-Oriented Programming (OOP) Concepts: Covers object-oriented programming providing more details of concepts such as encapsulation, inheritance, and polymorphism. Weeks 4-7

Midterm Exam. Week 8.

Data Structures and Advanced Concepts: Discusses memory references and basic data structures such as arrays, lists, sets, stacks, queues, and trees. We will cover concepts such as threads, sockets, device drivers, and APIs. How these are used in general and for computer control. Presentation of the project and submission of implementation and report. Review for the final exam. Weeks 9-10.

Android Programming and Project Selection: Introduction to the Android System and the tools to program it. Project proposal will take place during these weeks. Weeks 11-14.

Final Exam. Week 15.

Grade Criteria:

Quizzes/Homework	20%
Labs	20%
Midterm Exam	20%
Project	20%
Final Exam	20%

Grading Scale:

Letter Grade	Numeric Average
A	93 - 100
A-	90 - 92
B+	87 - 89
B	83 – 86
B-	80 - 82
C+	77 - 79
C	70 – 76
D	60 – 69
F	0 – 59