Instructor: Curt Hill, 845-7103
Office: 139C McFarland
Office hours: Curt's Schedule

E-mail: Curt.Hill@vcsu.edu

Skype: curt.Hill.vcsu
Term: Spring of 2014

Meetings: 8:00 MWF in Vangstad 117 (Broadcast over IVN)

Credits: 3

Text: *Introduction to Computing & Programming with Java* by Guzdial and Ericson. ISBN 0-13-149698-0

Catalog Entry: An introduction to computer programming using the Java language.

Prerequisite: Prerequisite: Math 102 or equivalent. **Goals**: This course is designed to be an introductory programming class with few pre-requisites. Programming is a difficult skill to master, but a worth while activity for most people. The programming of this class satisfies NCATE standard 11010.4.

Programming projects: Since we wish to produce programmers we need to produce many programs, though many of them will be quite small, somewhere in the range of 6 to 9. Programming projects are normally worth 20 points. There is a late penalty of 10% (normally 2 points) per school day that the program is late. After five days there is no additional penalty, but the program must be turned in within ten working days and before the final examination for any points. Remember! Programming courses are hazardous to your free time! Warning: if the machine or network is unavailable at the time a project is due that will not be accepted as an excuse for a late project.

Project cooperation: It is normally the case that students talk to each other about programming projects and this is encouraged. It is also the case that a certain amount of cheating goes on and this is strongly discouraged. Worse yet it is not always clear where to draw the line that separates good cooperation from unacceptable cheating. However an attempt must be made. It is acceptable to: talk about programs, read other student's programs with their permission, suggest changes to programs up to several lines or have group study sessions where several students do any or all of these to each other's programs. What is not acceptable is: two (or more) students turning in one program or two copies of the same program, mailing or disk copying parts or all of a program from one student to another, browsing or copying programs without the author's permission and knowledge, or several students designing the entire program together and then separately typing it in. The standard policy for cheating on a program is for **all** copies of the program to receive a zero, regardless of who wrote it and who copied it.

Class Attendance Class attendance is strongly encouraged but not required. The correlation between class attendance and mastery of the material is not coincidental. However, this is not high school, so no grade incentives are placed just on class attendance. There are occasional in class exercises over the concepts discussed in the class. These are graded, but are more important

to the instructor for determining the understanding of the class then for grading. If you are to be absent for a class, send email or leave voice mail with the instructor before the start of class. Any such absence can be made up, regardless of cause, with advance notice. However, the missing of exam better have a non-trivial excuse!

Tests: There will four tests. There will be three exams during normal class period, as well as a two hour final. The final is worth two times the amount of an ordinary exam, since it combines the testing of all untested material with that of the comprehensive final. The lowest test will be thrown out. All test grades will be based on the high score for that test, with tests being equally valued regardless of the number of points on the test.

Grading: There will be several components which will determine a final score. The test portion will be worth 60% of your grade and the programming projects will be worth 40%. In-class exercises will be part of the programming component. The final score will then be a range of 0 - 100. Given that score, the grades will be determined in a conventional percent way, greater than 90: A, 80 - 89: B etc.

Electronic communication: In an effort to waste less paper, much important information and most of the important documents are going to put on and maintained on the class web page. This page is linked to Curt's web page, which is in turn linked to the Math department web page, which in turn is linked to the VCSU page. All assignments will be posted to the web page first. This document, among others will be maintained there. We will hand in our programs through e-mail.

Portfolio Project: Like all good VCSU classes there will be a portfolio project. It will cover the Technology ability and Applies skill at level three. You will complete a Java application that uses a GUI interface and modifies a picture in many different ways. You will start with the WinShell from the web site. You will need the one button to open a picture, one button to save the picture, one button to exit the program and one button to show the about box. In addition you will need six manipulation buttons. These should include lightening, darkening, blurring, rendering the picture black and white (or sepia) and convert to line drawing. In addition one other transformation is required, this could be mirroring, color modification or anything else you choose, preferably nothing yet seen or demonstrated. This should give ten different buttons. This project will be uploaded into your eFolio site.

Topics:

- Basics of Java programs.
- Console programs.
- Using the Eclipse Interactive Development System.
- Variables, expressions and assignments.
- Turtles and line drawing
- Looping statements.
- Pictures
- Decision statements.
- Applications and applets.

• Windows programs.

Learning outcomes: At the conclusion of this course the student should be able to:

- Compile and run Java applications and applets.
- Effectively write Java code using flow of control statements.
- Debug Java programs.

Policies:

<u>Academic Integrity</u> Final Exam Policy reference

Support Services:

<u>Disability support services</u> <u>Learning Center</u> <u>Library</u>

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Last time I updated this page: January 14, 2014.