COSC 121 (3) Computer Programming II Advanced programming in the application of software engineering techniques to the design and implementation of programs manipulating complex data structures. [3-2-0] *Prerequisite:* A score of 60% or higher in one of COSC 111, COSC 123. Specific description: The goal of this course is to give students a creative introduction to programming. Students learn programming basics such as decisions, iteration, objects, methods, and classes through the Processing language. Near the end of the semester, the course transitions to Java language to allow for building larger programs. Students will explore events, graphics, animation, 2D gaming, and file manipulation while practicing programming concepts. Programming is performed in pairs to encourage collaboration and understanding. Some lectures require finishing a pre-class reading or assignment which will give more time for in-class practices. Students completing this course will understand programming fundamentals, have created interesting and fun programs and animations, and have the ability to continue in following computer science courses. Weekly topics: Intro to the Course, OOP basics, Intro to inheritance. inheritance, array of objects, final, visibility, Object Polymorphism, Dynamic binding, Object casting, instanceOf, equals, Abstract Classes, intro to interfaces, User-defined Interfaces, Built-in interfaces: Comparable, Cloneable, Exception Handling, Text I/O, Binary I/O, Recursion, ArrayLists, Intro to Generics, List, Stacks, and Queues, Implementing List, Stacks, and Queues, Sorting, Lambda expression.