**Course Syllabus**

**CS 176L - Introduction to Computer Science II Lab**

**Credits:** 1 **Contact hours:** 1

**Instructor’s or course coordinator’s name:** Gil Eckert

**Required Textbook and Other Materials:**

Cay Horstmann, Java Concepts: Early Objects, 8th Edition, 2015

**Course Description:**

Continuation in depth and breadth of problem solving and algorithm development, using the same modern object-oriented language as in CS 175. More advanced object-oriented design. Introduction to polymorphism, inheritance, and interfaces. All work will be done in a ‘hands on’ computer lab setting.

**Prerequisite:** Completion of CS175 and CS175L with a grade of C or better

**Corequisite:** CS-176

**Required or selected elective:** Required

**Course Goals:**

After completing this course, students will be able to:

• Create and use non-trivial classes and methods

• Work with arrays

• Write programs with interacting classes

• Use and understand inheritance in object-oriented applications

• Define, recognize and use polymorphism

• Utilize an Application Development Environment (ADE)

• Utilize an Application Programming Interface (API)

• Utilize a Debugger

• Utilize source code control and versioning

**Relationship of course to student outcomes listed in criterion 3:**

In this course students are given an opportunity to:

• Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

• Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

**Topics Covered:**

Arrays and ArrayLists

Constructors

Static Class Members

Overloading Methods

Inheritance

Polymorphism and Interfaces

File I/O

Object-Oriented Design

Recursion