Northwest Arkansas Community College

Business and Computer Information Systems Division

Discipline Code
PROG

Course Number
1403H

Course Title
Programming Logic II Honors

Catalog Description
(F, S, On Demand) This course is a continuation of PROG 1003. After an introduction to object-oriented concepts, the course focuses on problem-solving with the object-oriented paradigm. Topics covered are: classes, objects, encapsulation, polymorphism, inheritance, File I/O, exception handling, and the use of advanced data structures. This is an honors course. Please refer to the NWACC Honors Program section in the current catalog for more information. (Outside lab time will be required) Prerequisites: PROG 1003.

Prerequisites
PROG 1003

Credit Hours
3 Credit Hours

Contact hours
45 Lecture/Lab Contact Hours

Load hours
3 Load Hours

Semesters Offered
Fall, Spring, On Demand

ACTS Equivalent
None

Grade Mode
A-F

Learning Outcomes

The student will:

- Develop and design appropriate procedures, functions, and classes for a given a task.
- Debug a given program.
- Create a program to read and write a given set of data to/from an external file
- Utilize the Java Collection Framework to manipulate data and perform a given task
- Design appropriate classes for a given set of related data
- Apply object-oriented design techniques of encapsulation, polymorphism, and data abstraction using classes to model real-world data.

Honors Outcomes

Honors classes (and the Honors Program) promote the following core values:

- Community students will demonstrate civic engagement through Service Learning and exploration of local, national, and global communities.
- Curiosity students will cultivate personal and intellectual curiosity through investigation, discussion, and scholarship.
- Diversity students will explore multiple perspectives through interdisciplinary learning.

General Education Outcomes Supported

None

Standard Practices

Topics list

- Program Development using an object-oriented approach
- Encapsulation
- Polymorphism
- Classes and Objects
- File IO
- Arithmetic Calculations
- Data manipulation
- Programming Control Sequence, selection, and repetition
- Advanced data structures

Learning activities

- Assignments and Projects
- This course requires some in class, hands-on work and also additional hands-on work in a virtual or on-campus computer lab.
- Individual projects/presentations

Assessments

Homework, Quizzes, Exams, and Projects

- Program Level Project: The student will demonstrate an understanding and application of object-oriented programming concepts such as encapsulation, inheritance, polymorphism, and user-defined types.

Grading guidelines

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 0-59%

Last Revision Date: Spring 2022