

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Computer Information Technology Program
Revision Date: August 22, 2022

I. CATALOG DESCRIPTION

Course Number: INFO2644
Course Title: PC & Web Capstone
Prerequisite(s): INFO2431, INFO2514, INFO2534
Catalog Description: Students learn to analyze and design extensible object-oriented software applications by applying various design patterns. Working in teams, students use an iterative approach with ongoing analysis and design as a key focus. In addition, students develop an individual project that can be used to showcase their skills to potential employers.

Credit Hours: 4
Class Hours: 60
Lab Hours: 0
Total Contact Hours: 60

II. COURSE OBJECTIVES: *Course will:*

- A. Introduce various tools and techniques for writing customer based solutions.
- B. Investigate teaming systems for the Design.
- C. Provide training in a workflow strategy to produce programs on time.
- D. Examine various OOP design patterns.
- E. Introduce unit testing.
- F. Explore documentation methodologies.
- G. Describe skills on working in a small team environment.
- H. Demonstrate time management and planning and versioning skills using a tool such as Agile and version control system such as Git.
- I. Demonstrate individual skills learned during their degree focus.
- J. Provide a forum for students to exhibit the formal presentation of a completed functioning project.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Demonstrate the use of Agile and Scrum.
 - 2. Apply the Agile organizational/ planning process.
 - 3. Develop teamwork and communications skills.
 - 4. Demonstrate documentation with UML.
 - 5. Successfully code, test, and debug programs.
 - 6. Effectively work with project team members in the creation of a computer application.
 - 7. Apply the iterative approach to application development.
 - 8. Design and code an application representative of the student's programming coursework.
 - 9. Demonstrate the ability to incorporate Unit test into a developing application.
 - 10. Use a version control system.
 - 11. Demonstrate the full implementation of a application develop cycle.
 - 12. Develop, present and defend the design and code to the portfolio evaluation team.
- B. General Education Learning Outcomes (GELOs)

1. GLEO #3: Critical Thinking & Problem Solving
Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

- A. The Agile /scrum system
- B. User stories
- C. Time estimation
- D. Dividing user stories into tasks
- E. UML
- F. Design patterns
- G. Unit Testing
- H. Versioning software
- I. Group project requirements
- J. Individual portfolio requirements
- K. Presentation to group project to an evaluation panel
- L. Presentation to individual project to instructor and the class

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Pilone, Miles, *Head First Software Development* (Refer to CID and/or instructor for current edition)
- B. Other Resources: Required software available as a free download
- C. Computer and Internet access

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. Technology enhanced lectures
 2. Group discussions
 3. Engaged learning activities

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 1. Attendance and/or participation activities
 2. Homework assignments
 3. Quizzes