CSC/CPE 435 Introduction to Object Oriented Design Using Graphical User Interfaces

1. CSC/CPE 435 Introduction to Object Oriented Design Using Graphical User Interfaces

2. **credit units** 4  **contact hours** 6

3. **Course Coordinator:** Clint Staley

4. **Textbook:** (and/or other required material) Varies by choice of GUI environments
   a. **References:** Varies by choice of GUI environments

5. a. **Course Description:** Principles of object-oriented design, with emphasis on use of these principles in the design of graphical interfaces. Comparison and contrasting of two major object-oriented languages and their corresponding GUI class libraries. Language-independent object-oriented design methods, and application of these methods in the construction of a GUI-based project. Course may be offered in classroom-based or online format. 3 lectures, 1 laboratory. Crosslisted as CPE/CSC 435.

   b. **Prerequisite:** CPE/CSC 305.

   c. **Required/Elective/Selective Elective for CPE, CSC, EE, SE**

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6. a. **Course Goals/Outcomes**

   The student will be able to:

   These skills are arranged from lower order to higher order as follows:
   - **Knowledge:** Student to **recall** specific information.
     - Basic features of object-oriented languages and software. Basic features of GUI interfaces.
   - **Comprehension:** Student to **interpret** the information.
     - Understanding of object-oriented design, including use of design patterns.
       Understanding of principal concepts underlying GUI design.
   - **Application:** Student to **use** abstractions in new situations.
     - Ability to adapt object-oriented principles to new software problems.
   - **Evaluation:** Student must **choose** from alternatives in making a judgment.
     - Ability to select between different OOD options, and to evaluate the strengths and weaknesses of different GUI systems and OO languages.

   b. **How Student Outcomes addressed**
7. **Major Topics Covered: (number of lecture hours each)**

- Overview of object-oriented principles
  - Inheritance (2)
  - Polymorphic functions (2)
  - Generic classes (2)
  - Design and use of class libraries (2)
  - Object-oriented design techniques, with emphasis on design templates (5)

- Overview of GUI design concepts
  - Event-driven programming (2)
  - Basic GUI components: windows, menus, dialogs, resources (8)
  - Use of object-oriented GUI class libraries (4)