To be deactivated: CSC 435 – Introduction to Object Oriented Design Using Graphical User Interfaces

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

2. credit units  4  contact hours  6

3. Course Coordinator: Clint Staley

4. Textbook (or other required material): None

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.

b. Prerequisite: CSC 305.

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

<table>
<thead>
<tr>
<th></th>
<th>CSC</th>
<th>CPE</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Selective Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. a. Course Learning Objectives
The student will be able to:
- Recall basic features of object-oriented languages and software.
- Recall basic features of GUIs.
- Explain object-oriented design, including use of design patterns.
- Explain principal concepts underlying GUI design.
- Adapt object-oriented principles to new software problems.
- Select between different OOD options, and to evaluate the strengths and weaknesses of different GUI systems and OO languages.

b. Level at which Student Outcomes are addressed
(“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td>A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>SE/CPE</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>
7. Major Topics Covered: (number of lecture hours per)

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

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