Information Technology, Security, and Informatics

COP 2030- Programming Concepts

Spring 2014
3 Credit Hours
Course Number: COP 2030

Course Name: Programming Concepts

Course Description: This course covers basic programming concepts for developing problem solving skills, using the Python language for implementation.

Instructor: Professor Mack (Dug) Cooley
Email: cooleym@sar.usf.edu


Prerequisites: None

Course Goals: This course is intended to be a first course in computing, focusing on problem solving strategies and skills rather than language features. Python is used as the programming language for implementation because it has a clean, simple syntax, an intuitive user environment, and
Performance Objectives: In this course students will learn:

- How to use programming concepts to develop and use programs that solve real world problems. Most of the examples will come from science and engineering, but the ideas can be applied to any domain.
- The core features of the programming language called Python. These features are included in every modern programming language such that students can use what they learn no matter what they work on next.
- How to think methodically about programming. In particular, students will learn how to break complex problems into simple ones and how then to combine the solutions to those simpler problems to create complete applications.
- Some tools that will make their programming more effective, as well as some others that help to create applications that can cope with larger problems.

Attendance Policy: This course will be conducted entirely on-line via Canvas. Logging in to the live Canvas session is considered to be “attendance.” Sessions will also be recorded for review purposes and for those students who have legitimate reasons to not be able to log in to a scheduled sessions. Weekly at 6pm ET Monday’s via Canvas. A weekly email will be sent out with the Session Link.

Performance Evaluation and Grading Student performance will be evaluated based on chapter quizzes and programming exercises. The weight of each component is:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exercises</td>
<td>50%</td>
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<tr>
<td>Quizzes</td>
<td>50%</td>
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100

A grade will be determined based on the total of possible points earned, as follows:

- B+: 89 – 87, B: 86 – 83, B-: 82 – 80
- C+: 79 – 77, C: 76 – 73, C-: 72 – 70
- F: below 60

a short learning curve.
### Class Schedule:
(Revised: 12/26/13)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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| **Week 1** (01/06/14) | Course Introduction / Overview  
Use of Canvas for Assignments / Class Attendance |
| **Week 2** (01/13/14) | **Readings:**  
*Zelle2e* – Chapter 1, “Computers and Programs” |
| **1/20/14** | **Holiday** |
| **Week 3** (01/27/14) | **Readings:**  
Chapter 2, “Writing Simple Programs” |
| **Week 4** (2/03/14) | **Readings:**  
*Zelle2e* – Chapter 3, “Computing with Numbers” |
| **Week 6** (02/10/14) | **Readings:**  
*Zelle2e* – Chapter 4, “Objects and Graphics” |
| **Week 7** (02/17/14) | **Readings:**  
*Zelle2e* – Chapter 5, “Sequences: Strings, Lists, and Files” |
| **Week 8** (02/24/14) | **Readings:**  
*Zelle2e* - Chapter 6, “Defining Functions” |
| **Week 9** (03/03/14) | **Readings:**  
*Zelle2e* - Chapter 7, “Decision Structures” |
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Readings</th>
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<tbody>
<tr>
<td>(3/10/14)</td>
<td>Spring Break – No Classes</td>
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<tr>
<td>Week 10</td>
<td>(03/17/14)</td>
<td>Readings: Zelle2e – Chapter 8, “Loop Structures and Booleans”</td>
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<td>Week 11</td>
<td>(03/24/14)</td>
<td>Chapter 9. “Simulation and Design”</td>
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<tr>
<td>Week 12</td>
<td>(03/31/14)</td>
<td>Readings: Zelle2e – Chapter 10. “Defining Classes”</td>
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<td>Week 13</td>
<td>(04/07/14)</td>
<td>Readings: Zelle2e – Chapter 11. “Data Collections”</td>
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<td>Week 14</td>
<td>(04/14/14)</td>
<td>Readings: Zelle2e – Chapter 12. “Object-Oriented Design”</td>
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<tr>
<td>Week 15</td>
<td>(04/21/14)</td>
<td>Course Summary / Overview, Wrap-Up, and Evaluation</td>
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