

**Fayetteville State University**  
**College of Arts and Sciences**  
**Department of Mathematics and Computer Science**  
**CSC 480-01 User Interface Development**  
**Course Syllabus, Fall Semester, 2010**

**I. Locator Information:**

Instructor: Dr. K. C. Wong  
Course # and Name: CSC480-01 User Interface Development      Office Location: SBE 343  
Semester Credit Hours: 3      Office hours: M, W: 3:00 p.m. – 6:00 p.m.  
Day and Time Class Meets: **T, R: 11:00 a.m. – 12:15 p.m.**      T, R: 11:00 p.m. –12:00 p.m.  
Total Contact Hours for Class: 36.25      Office Phone: (910) 672-1697.  
Building and Room Class Meets: **SBE 224**      Email address: [kwong@uncfsu.edu](mailto:kwong@uncfsu.edu)

TEST 1..... Tuesday, September 14, 2010  
TEST 2..... Tuesday, October 12, 2010  
TEST 3..... Tuesday, November 16, 2010  
Final Exam: 12:00 p.m. – 1:50 p.m. Tuesday, December 7, 2010

**FSU Policy on Electronic Mail:** Fayetteville State University provides to each student, free of charge, an electronic mail account that is easily accessible via the Internet. The university has established email as the primary mode of communicating with enrolled students about impending deadlines, upcoming events, and other information important to student progression at the university. Students are responsible for reading their email on a regular basis to remain aware of important information disseminated by the university. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail.

Students making inquiries via email to FSU faculty and staff about academic records, grades, bills, financial aid, and other matters of a confidential nature are required to use their FSU email account.

Rules and regulations governing the use of FSU email may be found at:  
<http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf>

**II. Course Description:**

A course on user-interface technology and human-computer interaction issues including user productivity, system habitability, abstraction barriers, and human factors. Topics include command languages, hierarchical menus, direct manipulation (graphical user interfaces), multimedia interfaces, multimodal interaction, and user interface management systems. **PREREQUISITE:** CSC 220, **Corequisites:** CSC452, OR csc470, or consent of instructor.

**III. Disabled Student Services:** In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1<sup>st</sup> Floor); 910-672-1203.

**IV. Textbook:**

Will McGugan, Beginning **Game Development** with **Python** and **Pygame**, From Novice to Professional, Apress, 2007

**V. Student Learning Outcomes:**

Upon completion of this course, the student will be able to:

- (1) Use the Pygame library to develop games. Also to create 3-dimensional graphics using OpenGL;
- (2) Use Pygame to set up a graphical display, draw to the screen, handle events and read input devices;
- (3) Create game characters with artificial intelligence and playing sound including music;
- (4) Manipulate objects in a virtual world and render visuals with lighting and special effects.
- (5) Set up a graphical display and handling events;
- (6) Create visual and various ways to draw to the screen with Pygame, and explores the techniques that game programmers use to make those images move;
- (7) Interface his/her game with virtually any gaming device to move a character around with the keyboard, mouse, and joystick;
- (8) Add seemingly intelligent characters to any game;
- (9) Use Pygame to add sound effects and music;
- (10) Render and manipulate a 3-dimensional object on the screen;
- (11) Create impressive 3D visuals and generate special effects.

## VI. Course Requirements and Evaluation Criteria:

2 highest test scores out of 3 tests totaling ..... 30%  
8 programming assignments totaling ..... 30%  
Final Exam..... 40%

+ \_\_\_\_\_  
Semester\_Grade\_Points (SGP) 100%

Semester Grade Semester\_Grade\_Points

A	92% - 100%
B	83% - 91%
C	73% - 82%
D	64% - 72%
F	0% - 63%

WN See the University's Attendance/Withdrawal Policy.

This will be applied to all students.

W Student initiated withdrawal from class.

I Incomplete grade by PRIOR APPROVAL of the instructor. A university form must be completed and signed by BOTH the student and the instructor.

**Please note: If these evaluation criteria must be revised because of extraordinary circumstances, the instructor will distribute a written amendment to the syllabus.**

**Student Behavior Expectations:** -The instructor will respect all students and will make every effort to maintain a classroom climate that promotes learning for all students. Students must accept their responsibility for maintaining a positive classroom environment by abiding by the following rules:

1. Students are expected to arrive to class on time, remain in class until dismissed by the instructor, and refrain from preparing to leave class until it is dismissed.
2. Students are not permitted to sleep in class.
3. Student/teacher relationships, as well as relationships among peers, must be respectful at all times.
4. Students are not permitted to wear headphones or other paraphernalia that may be distracting to the classroom environment.
5. Students must refrain from any activity that will disrupt the class; this includes turning off cell phones and pagers.
6. Students are not permitted to use profanity in the classroom.
7. Students should not pass notes or carry on private conversations while class is being conducted.

**Consequences for Failing to Meet Behavioral Expectations:** The first time a student violates one of these rules, the instructor will warn him or her privately, either after class or before the next class. The second time a student violates the guidelines; the instructor may deduct as many as twenty points from the student's next exam grade. If a student violates the guidelines three times, the instructor will report the student to the Dean of Students for disciplinary action according to the FSU Code of Student Conduct.

## VII. Academic Support Resources:

Support resources for this course are available at the following locations:

- (1) Computer laboratories on campus including but not limited to SBE 214 Open laboratory, HTC bldg;
- (2) Classrooms: SBE 218, SBE 221, SBE 224 when no class is being held there;
- (3) Chestnut Library, Student dormitories, Lyon Science Bldg New Wing Room 125.

## VIII. Course Outline and Assignment Schedule

WEEK	TOPICS
1	Administrative details, introduction to Python, Pygame. Demonstration of game programs. How to run programs in COMMAND/IDLE environments. Introducing Python: Numbers, Strings, Lists, and Tuples, loops. (Assignments #1)
2, 3	Exploring Python, creating scripts, working with logic, understanding Booleans, Functions, Object-Oriented Programming, using Classes. Using the Standard library, introducing import, and useful module for games. (Assignments #2)

- 4, 5            Introducing Pygame, history of Pygame, installing Pygame, using Pygame, understanding, Retrieving events, handling Mouse Motion events, Mouse Button events, keyboard events, filtering events, posting events. (Assignment #3)
- 6, 7            Opening a display, full-screen displays, resizable pygame windows, windows with no borders, additional display flags, using the font module. (Assignment #4)
- 8, 9            Using pixel power, working with color, representing color in Pygame, scaling colors, blending colors, using images, working with surface objects. (Assignment #5)
- 10, 11          Drawing with pygame, `pygame.draw.rect`, `pygame.draw.polygon`, `pygame.draw.circle`, `pygame.draw.ellipse`, `pygame.draw.arc`, `pygame.draw.line`, `pygame.draw.lines`, `pygame.draw.aaline`, `pygame.draw.aalines`. . (Assignment #6)
- 12, 13          Understanding frame rate, moving in a straight-line, horizontal movement, vertical movement, Diagonal movement, exploring vectors, creating vectors, storing vectors, vector magnitude, unit vectors, vector addition, subtraction, negation, scalar multiplication and division, gameobject vector class, using vectors to create movement. Diagonal movement. (Assignment #7)
- 14, 15, 16      Accepting user input, controlling the game, understanding keyboard control, detecting key presses, Directional movement with keys, rotational movement with keys, implementing mouse control, rotational movement with the mouse, joystick basics, joystick direction controls, joystick objects, seeing joystick in action. (Assignment #8)

- This schedule is subject to change for the optimum benefit of the class as a whole.
- Therefore it is important to stay alert and attend class regularly.

## **IX. Teaching Strategies**

The primary teaching strategy for this course will be lecture, discussion and computer programming laboratory work.

## **X. Bibliography**

- (1) Mark Lutz & David Ascher, Learning Python, O'Reilly, 3<sup>rd</sup> Edition, 2008
- (2) Mark Lutz, Programming Python, O'Reilly, 3<sup>rd</sup> Edition, 2006
- (3) <http://www.Python.org>
- (4) <http://www.VPython.org>
- (5) <http://www.pygame.org>
- (6) <http://pyopengl.sourceforge.net/>