



## Course Syllabus

EDTC 5250 W1	Mike Gage	/ mikegage@swbell.net
COURSE NUMBER AND SECTION	INSTRUCTOR	E-MAIL ADDRESS
Introduction to Programming	Spring 2005	/ 3
COURSE TITLE	TERM	CREDIT HOURS
WEBG		
SITE		

1. Course Description: (provide details of student focus, rationale, scope, and prerequisites)

The course presents various aspects of computer programming. The Python programming language is used as a means of teaching these concepts. Good programming practices will be presented, with emphasis on actual development. Emphasis will be on applications that may be useful in the classroom. Prerequisite: Classroom Technologies, or permission of the Educational Technology Coordinator.

2. Learning Outcomes: (goals, objectives, course outcomes, etc.) Identify any MOSTEP or professional standards that are met by each learning outcome.

The course is designed to provide the student with an adequate understanding of programming concepts and principles to enable her or him to design and implement programs for his or her own use or use in the classroom. At the completion of the course, the student will be able to develop programs using the Python programming language. The student will be equipped with the ability to learn to develop programs using other programming languages. This capability will provide the classroom teacher with the freedom to use the computer as a tool not constrained by the design of purchased applications.

In particular the classroom teacher will be enabled to:

- develop software applications to create meaningful learning opportunities for all students (MoSTEP 1.d., 1.e)
- present subject matter in multiple ways, addressing the multiple experiences and learning styles of the students to meet the goals of the curriculum (MoStep 1.b., 2.b., 3.b., 4.a., 4.b.).

- develop software applications that challenge the students to approach the material in new, effective ways (MoStep 1.d., 1.e., 5.a., 5.b., 6.c., 7.c., 7.d.).
  - develop software to automate repetitive or time-consuming aspects of student assessment, thereby improving student assessment effectiveness (MoStep 8.d.).
  - develop software to improve communication with colleagues, parents, and educational partners (MoStep 10.a., 10.d.).
  - teach computer programming in the classroom (MoStep 1.a.).
3. Schedule of required readings, class preparations and assignments, lectures, discussions, student presentations, out-of-class assignments and exams.

The content and pace of the course will be tailored to the experience level and needs of the students. The schedule will approximate the following:

- Week 1: Downloading, Installing, Using the Python Environment, Including IDLE.
- Week 2: Variables, Expressions, Statements, Operators, Data.
- Week 3: Branching, Looping.
- Week 4: Input and Output.
- Week 5: Modules and Functions.
- Week 6: Files, Reading and Writing.
- Week 7: Good Coding Practices.
- Week 8: Exception Handling.
- Week 9: More on Functions, Methods.
- Week 10: Graphical Applications – GUIs.
- Week 11: Integrating Concepts.
- Week 12: More Integrating Concepts.
- Week 13: Accessing databases.
- Week 14: Threading.
- Week 15: Project submissions
- Week 16: Project demonstrations

The Missouri Show-Me Standards are addressed within the content of this course. Identification of specific standards are included within course assignments. Integration of Missouri Assessment Program (MAP) standards and grade levels will be integrated into this course when appropriate.

4. Resources:

Text:

*Learn to Program Using Python: A Tutorial for Hobbyists, Self-Starters, and All Who Want to Learn the Art of Computer Programming*, Alan Gauld, Addison-Wesley, 2001, ISBN 0-201-70938-4

Supplemental Readings:

<http://www.python.org> -- official website for the Python language. Includes several other resources, including tutorials, regarding Python and programming concepts.

5. EVALUATION: (basis of evaluation with explanation regarding the nature of the assignment and the percentage of the grade assigned to each item below)

- a) Software projects (80%): The student will be developing short software applications throughout the course. Each student will also develop one comprehensive application to be completed by the penultimate week of the course. The student's grade will be primarily based upon the programs' good design.
- b) Engagement level (20%): The student's grade will also be based in part upon the level of commitment that he or she shows in developing and advancing his or her programming skills.
- c) Online expectation: The student is expected to actively participate in each online session during its assigned week. Each missed session will lower the grade for the course by one letter grade. As this is a graduate-level course, I don't expect to encounter problems in this regard.
- d) Assignment submission: The student is expected to complete the work for each session by the due date. Failure to complete all assignments by the end of the course will result in a grade of "incomplete." Each late assignment will be lowered by one letter grade for each week or partial week that it is late. As this is a graduate-level course, I don't expect to encounter problems in this regard.
- e) Instructor feedback: The instructor will provide feedback on each assignment within one week of its submission. The instructor will on a weekly basis provide each student with his or her current grade in the course.
- f) Plagiarism or cheating: Plagiarism or cheating will not be tolerated. Any student involved in plagiarism or cheating will be immediately dismissed from the course with a failing grade and will be reported to the department chairperson for further action.

6. Supplements (study guide, sample tests, project outlines may be attached.) Please list.

<http://www.python.org>

7. 3 Hour Courses: Students taking an 8 week course for 3 credit hours will complete the following additional assignments and/or attend the following additional class meetings:

(not applicable)

8. FINAL PROJECTS: Final projects/papers will be returned to students in the following manner:

Each student will design and develop an application based upon her or his interests. The application will be presented during the final two sessions of the course. The final application as well as applications written during the semester will be submitted by posting them to the student's web page at <http://labwebs.webster.edu/⟨⟨accountname⟩⟩>.

- This syllabus is subject to change at the discretion of the instructor.
- Regular class attendance is required.