



## Course Syllabus

EDTC 5250 01 \_\_\_\_\_ Mike  
Gage \_\_\_\_\_ / [mikegage@swbell.net](mailto:mikegage@swbell.net)  
COURSE NUMBER AND SECTION INSTRUCTOR E-MAIL ADDRESS

Programming Languages: Java \_\_\_\_\_ Spring 2004 \_\_\_\_\_ / 3 \_\_\_\_\_  
COURSE TITLE TERM CREDIT HOURS

\_\_\_\_\_ WEBG  
SITE

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

The course presents object-oriented programming principles using the Java™ programming language. 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 the Java™ programming language to enable her or him to design and implement Java™ programs for their own use or use in the classroom. The student will be equipped with the ability to further her or his proficiency in developing Java™ applications. 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 1.2.11.1, 1.2.11.2, 1.2.11.3, 1.2.11.4, 1.2.11.5, 1.2.11.6).

- present subject matter in multiple ways, addressing the multiple experiences and learning styles of the students to meet the goals of the curriculum (MoStep 1.2.1.2, 1.2.3.1, 1.2.3.2, 1.2.3.3, 1.2.3.4, 1.2.4.1, 1.2.4.2, 1.2.4.3).
  - develop software applications that challenge the students to approach the material in new, effective ways (MoStep 1.2.5.1, 1.2.5.2).
  - develop software applications specific to the social needs of the class (MoStep 1.2.6.1, 1.2.6.3).
  - develop software applications based upon cultural, gender, intellectual, and physical ability differences among the students (MoStep 1.2.7.1, 1.2.7.2).
  - develop software to automate repetitive or time-consuming aspects of student assessment, thereby improving student assessment effectiveness (MoStep 1.2.8.1, 1.2.8.2, 1.2.8.3, 1.2.8.4).
  - develop software to automate some aspects of self-assessment (MoStep 1.2.9.1, 1.2.9.2).
  - develop software to improve communication with colleagues, parents, and educational partners (MoStep 1.2.10.1, 1.2.10.3, 1.2.10.4).
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: General programming concepts (using Python interactive environment).
- Week 2: Installing Java™ SDK, setting up system for Java™, HelloWorld.
- Week 3: Object-oriented concepts.
- Week 4: Java™ language fundamentals, flow control.
- Week 5: Operators and assignments, variable types.
- Week 6: Classes and inheritance.
- Week 7: Introduction to Reading and writing (I/O).
- Week 8: More I/O.
- Week 9: Swing (GUI development).
- Week 10: More Swing.
- Week 11: More Swing.
- Week 12: Implementing interfaces, testing.
- Week 13: Accessing databases.
- Week 14: Threading.
- Week 15: Project demonstrations
- 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:

*The Java™ Tutorial, Third Edition – A Short Course on the Basics*, Mary Campione, Kathy Walrath, Alison Huml, Addison-Wesley, 2001, ISBN 0-201-70393-9

Supplemental Readings:

<http://developer.java.sun.com/> – various topics. (The student will become familiar with this site as a valuable programming resource.)

<http://www.python.org> -- useful, simple, interactive programming tool. (Used for introduction to programming principles.)

Other:

**Java™ 2 SDK (software development kit - the basis for Java development).**

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 end of the course. The student's grade will be primarily based upon the programs' good design.

b) Interest level( 20% ): The student's grade will also be based in part upon the interest that he or she shows in developing and advancing his or her programming skills. This includes the requirement that the student regularly attend all sessions. A maximum of one excused absence is permissible. More than one absence will result in a lower grade for the course.

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

<http://developer.java.sun.com>

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 students web page at [<<accountname>>](http://labwebs.webster.edu/).

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