ADVANCED JAVA PROGRAMMING
CSIT 2655

Class Hours: 3.0
Credit Hours: 4.0
Laboratory Hours: 3.0
Revised: Spring 03

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

A study of advanced Java programming including advanced GUI components, security, connecting to a database, servlets and JavaBeans. Both applets and applications are covered. Several case studies will be reviewed. A team project that integrates the concepts of the course is required.

Entry Level Standards:

The entering student should have a familiarity with the DOS and Windows operating systems and should be competent in at least one high-level programming language. The student must have a student general user account and knowledge of its use. An elementary knowledge of Unix would be helpful.

Prerequisites:

CSIT 2650 or department approval

Textbook(s) and Other Reference Materials Basic to the Course:

Recommended References: java.sun.com

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Review, javadoc</td>
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<tr>
<td>2</td>
<td>javadoc, Collections</td>
</tr>
<tr>
<td>3</td>
<td>Threads</td>
</tr>
<tr>
<td>4</td>
<td>Design Patterns (UML)</td>
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<tr>
<td>5</td>
<td>Advanced GUI Components</td>
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<tr>
<td>6</td>
<td>XML</td>
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<tr>
<td>7</td>
<td>Model-View-Controller</td>
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<tr>
<td>8</td>
<td>Java Beans</td>
</tr>
<tr>
<td>9</td>
<td>Java Database Connectivity</td>
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</tbody>
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II. Course Objectives*:

A. Use the syntax and object-oriented constructs of the Java programming language utilized in CSIT 2650, Java Programming. II III IV VI IX XI

B. Use classes of the Java API. II III IV VI IX XI

C. Write multithreaded client/server Java programs. II III IV VI IX XI

D. Write Java programs that connect to a database. II III IV VI IX XI

E. Use UML to model Java programs. II III IV VI IX XI

F. Use search tools, Email, FTP, TELNET and other available resources found on the Internet to locate, use, download, upload and communicate effectively. II III IV VIII IX

G. Write programs that meet written requirements. I II III IV V VII VIII XI XII

H. Demonstrate individual and teamwork standards to accomplish given tasks within timeframes established. I VII XI

I. Develop application(s) and/or applet(s) that serve customer and/or market needs. I II IV V VI VII VIII IX X XII

J. Write Java programs to solve a wide variety of problems. II III IV VI VIII IX XI XII

*Roman numerals after course objectives reference goals of the CSIT program.

III. Instructional Processes*:

Students will:

1. Produce Java programs as applets, standalone applications and applet/application combinations. Problem Solving and Decision Making Outcome, Technological Literacy Outcome, Information Literacy Outcome

2. Produce a fully working end-product as part of a collaborative effort that is shared with other class members. Communication Outcome, Problem Solving and Decision Making Outcome

3. Use the Internet as a medium for obtaining documentation and instruction and for submitting assignments. Communication Outcome, Technological Literacy Outcome, Information Literacy Outcome
4. Develop a client/server software product meeting requirements. *Communication Outcome, Technological Literacy Outcome, Information Literacy Outcome, Problem Solving and Decision Making Outcome*

5. Use professional tools to produce software components and documentation. *Technological Literacy Outcome, Transitional Strategy, Personal Development Outcome*

6. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Personal Development Outcome, Communication Outcome*

7. Participate in a peer review of term projects. *Problem Solving and Decision Making Outcome, Communication Outcome*

8. Use professionally accepted methods and materials in completion of program development. *Technological Literacy Outcome, Personal Development Outcome*

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

**IV. Expectations for Student Performance***:

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

1. Use Java development tools prevalent in the industry. A, B, C
2. Use graphic user interfaces to perform specific tasks. C, E, F
3. Find resources and information to perform specific tasks. C, D, E
4. Use web pages and search tools effectively. D, E, F
5. Use communication tools effectively. D, E, F
6. Show effective operational use of available utilities, products, software and hardware. C, D, E
7. Produce applications, documentation, sources of information, and tests in a timely, well-organized manner. C, D, E
8. Use Java GUI and collection classes. A, B, C
9. Use Java threads. A, B, C
10. Use the Model-View-Controller model to update Java swing GUI components. A, B, C
11. Use Remote Method Invocation. A, B, C
12. Create Java servlets. A, B, C
13. Use Java Database Connectivity classes. A, B, C
14. Use JavaBeans. A, B, C

*Letters after performance expectations reference the course objectives listed above.

**V. Evaluation:**
A. Testing Procedures:

At least 4 tests will be given. Tests may only be made up for excused absences. An excused absence is one that can be verified by supporting documentation. Failure to make a passing quiz average will result in a grade of F for the course.

B. Laboratory Expectations:

At least 3 project assignments will be given during the course of the semester. At least 1 project or project part will be a team project which includes at least one presentation. Failure to make a passing project average will result in a grade of F for the course.

C. Field Work:

N/A

D. Other Evaluation Methods:

N/A

E. Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
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<tr>
<td>B+</td>
<td>88 – 92</td>
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<tr>
<td>B</td>
<td>83 – 87</td>
</tr>
<tr>
<td>C+</td>
<td>78 – 82</td>
</tr>
<tr>
<td>C</td>
<td>73 – 77</td>
</tr>
<tr>
<td>D</td>
<td>65 – 72</td>
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<tr>
<td>F</td>
<td>Below 65</td>
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VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog).

B. Academic Dishonesty:

Plagiarism, cheating and other forms of academic dishonesty are prohibited. A student guilty of academic misconduct, either directly or indirectly through participation or assistance, is immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions that may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course.

C. Other:

In the event that you have an emergency beyond your control, you must notify the instructor as soon as possible.