PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

ADVANCED RPG PROGRAMMING
CST 2670

Class Hours: 3.0  Credit Hours: 4.0
Laboratory Hours: 3.0  Date Revised: Spring 02

Catalog Course Description:

An advanced course in RPG programming for the AS/400 midrange environment. The course covers advanced syntax, program logic, coding specifications, documentation standards, file structures, data throughput, secure data storage concepts and client interactive coding development for terminal and pc-based client access data handling.

Entry Level Standards:

The student must have math, writing, verbal, and English language skills at the college level.

Prerequisites:

CST 1670 or department approval

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

Essentials of Subfile Programming and Advanced Topics in RPG IV, Phil Levinson, 29th St Press, 1999.
Optional:
AS/IV RPG Language Guide(s) - On-line access

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, Pretest, Migration History</td>
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<tr>
<td>2-3</td>
<td>Interactive Application Development</td>
</tr>
<tr>
<td>4-5</td>
<td>Storage, Tables and Arrays, Subfiles</td>
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<tr>
<td>6-7</td>
<td>Advanced Data Definition</td>
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<tr>
<td>8</td>
<td>Review, Midterm, Project Set 1 due</td>
</tr>
<tr>
<td>9-10</td>
<td>Interactive Programming Techniques</td>
</tr>
<tr>
<td>11</td>
<td>Data Manipulation at the Byte Level</td>
</tr>
<tr>
<td>12-13</td>
<td>Communications and Modular Programming</td>
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II. Course Objectives*:

A. Analyze problems and then design, code and debug RPG business application products designed to solve the original problem and test and debug to real-world standards. II, III, IV, VII, VIII, IX, XI, XII

B. Demonstrate a working knowledge of the products and tools associated with RPG end-product development. II, III, VI, VII, VIII, IX, XI, XII

C. Demonstrate a working knowledge of the Peripheral I/O and storage facilities and the system environment running the language. I, II, III, IV, VI, VII, VIII, IX, X, XI, XIII

D. Demonstrate problem solving skills and individual and team-oriented programming work ethic skills. I, III, VI, VII, IX, X, XI

E. Develop Client-based Interactive RPG programs. II, III, IV, VI, VII, VIII, IX, X, XI, XII

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

III. Instructional Processes*:

Students will:

1. Develop coding compliant with each RPG required expectation. Problem Solving and Decision Making Outcome, Technological Literacy Outcome, Information Literacy Outcome, Active Learning Strategy

2. Produce working programs. Problem Solving and Decision Making Outcome, Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy

3. Participate in a software development team. Communication Outcome, Problem Solving and Decision Making Outcome, Transitional Strategy, Active Learning Strategy

4. Use professional tools (PDM, SEU, Testing and Debugging) to produce software components and documentation. Technological Literacy Outcome, Transitional Strategy, Personal Development Outcome

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

6. Use professional methods and materials in completion of program development. Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy, 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. Effectively use terminology associated with the computer system, the RPG language,
utilities and the editor. B,C,E

2. Develop data storage and information outcomes using RPG code. A,B,C,D,E

3. Produce required interactive code. A,B,C,D,E

4. Produce required external documentation. A,B,C,D,E

5. Correctly design programs to produce correct results and develop testing procedures to insure the validity of those results. A,B,C,D,E

6. Write programs that meet or exceed client expectations. A,B,C,D,E

7. Develop professional level programs with well designed screens, error handling techniques and security of the data. A,B,C,D,E

8. Effectively apply good work ethics, teamwork, professionalism and quality standards. A,B,C,D,E

9. Effectively use software tools to develop and document working RPG applications. A,B,E

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

**V. Evaluation:**

A. Testing Procedures:

   A midterm test which will count 200 points. There will be a final comprehensive test consisting of a project, producing a working program and written test, which will count 300 points. Tests may consist of multiple choice, matching, fill-in-the-blank, code development or short answer questions. There will be no make-up tests unless prior arrangements are made with the instructor.

B. Laboratory Expectations:

   Lab attendance is required. Assignments will be given and must be completed and handed in at the expected date and time. All assignments turned in late will be reduced by 5 points per day. No assignment will be accepted more than one week late unless approved in advance by the lab instructor. The lab assignments will count 300 points total.

C. Field Work:

   N/A

D. Other Evaluation Methods:

   Pop-quizzes, reading assignments and "outside-class" take-home assignments will be given which will total 200 points.

E. Grading Scale:

<table>
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<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>900 - 1000</td>
<td>A</td>
</tr>
<tr>
<td>870 - 899</td>
<td>B+</td>
</tr>
<tr>
<td>800 - 869</td>
<td>B</td>
</tr>
<tr>
<td>770 - 799</td>
<td>C+</td>
</tr>
<tr>
<td>700 - 769</td>
<td>C</td>
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</tbody>
</table>
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.

B. Academic Dishonesty:

Plagiarism, cheating, software piracy, non-educational use of the computer systems and other forms of academic dishonesty are strictly prohibited. A student caught cheating or infracting specific rules will be given a grade of "F" for the course.

C. Other Policies:

Students are expected to promptly attend all lecture and lab classes as assigned. If a class is missed, students are encouraged to make-up all work and get notes and/or handouts.