Pellissippi State Community College  
Master Syllabus  

SYSTEMS ANALYSIS & DESIGN  
CITC 2335  

Combined lecture/lab hours: 4.0  
Credit Hours: 3.0  
Date Revised: Fall 2017  

Catalog Course Description  
This course examines established and evolving methodologies for the analysis, design, and development of a business information system. Software engineering principles and documentation techniques are practiced through case studies.

Prerequisite(s)  
CITC1311, CITC 1303, and ENGL 1010

Textbooks(s) and Other Course Materials   

Required Textbook  
(2) (Second Textbook to be determined)  

Suggested Reading Materials  
(1) Object-Oriented Classical Software Engineering, 8th Edition by Stephen Schach  
(2) UML, A Beginner’s Guide, by Jason Roff  
(3) Software Engineering, by Roger Pressman, and Bruce Maxim  
(4) Object-Oriented Systems Analysis and Design, by George, Batra, Valacich, and Hoffer  
(5) Software Project Management, by Joel Henry  
(6) Introduction to Java Programming, 10th Ed., by Y. Daniel Liang, Pearson/Prentice Hall  
(7) Oracle Database 11 g SQL, by Jason Price, McGraw-Hill, 2008

WEEK/UNIT/TOPIC BASIS  
1  Chapter 1       Introduction  
     Chapter 2       Software Process and Methodology  
2  Chapter 3       System Engineering  
     Chapter 23      Software Project Management  
3  Chapter 4       Software Requirements Elicitation  
     Chapter 5       Domain Modeling  
4  Chapter 6       Architectural Design  
5  Chapter 7       Deriving Use Cases from Requirements
Chapter 8  Actor-System Interaction Modeling
6  Chapter 9  Object Interaction Modeling
7  Chapter 10  Applying Responsibility-Assignment Patterns
Chapter 11  Deriving Design Class Diagram
8  Chapter 12  User Interface Design,
Chapter 13  Object State Modeling for Event-Driven Systems
9  Chapter 14  Activity Modeling for Transformational Systems
Chapter 15  Modeling and design of Rule-Based Systems
10  Chapter 16  Applying Patterns to Design a State Diagram Editor
11  Chapter 17  Applying Patterns to Design a Persistence Framework
Chapter 18  Implementation Considerations
12  Chapter 19  Software Quality Assurance
Chapter 20  Software Testing
13  Chapter 21  Software Maintenance
Chapter 22  Software Configuration Management
14  Chapter 24  Software Security
15  Final Exam

**COURSE GOALS**

The course will

A. Build the student’s skills to analyze, design and develop a well-documented project based on end-user request. I, II, III, IV, V
B. Demonstrate through group discussion how to approach a problem and come up with different solutions. I, V
C. Enhance the student’s effective use of professionally accepted methods and materials in completion of projects. I, II, III, IV, V
D. Require students to practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. I
E. Expand students’ critical thinking, problem solving, goal setting, and planning skills through the performance of course assignments such as case analysis, and team case studies. I, V
F. Allow opportunities for students to practice and learn various methods, tools and techniques used by the systems analyst at each phase within the systems development cycle. I, II, III, IV, V
G. Reinforce the student’s ability to manage time and efforts as a team to achieve the project goal. I

*Roman numerals after course objectives reference goals of the Computer Information Technology program.*
EXPECTED STUDENT LEARNING OUTCOMES*

Students will

1. Demonstrate an understanding of general concepts of system analysis and design. (A, F)
2. Construct a plan by using Project Management tools for system study through teamwork and cooperation. (A, B, C, D, E, F, G)
3. Develop an understanding of the system's life cycle and the tools and techniques available to the analyst. (A, C, E, F)
4. Develop different alternative solutions to a given problem. (B, E, F)
5. Create Requirements Definition Documents using variety case studies. (A, C, E, F)
6. Create Use Cases, and other UML models using modeling tools. (C, F)
7. Develop software solution after a complete system study using various case studies. (A, F, G)

*Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

EVALUATION

A. Testing Procedures: 70% of grade
   A minimum of three tests is recommended. Tests will cover material presented in class.

B. Laboratory Expectations: 20% of grade
   Lab exercises will be given using Project Management software, as well as various UML modeling tools.

C. Field Work
   N/A

D. Other Evaluation Methods: 10% of grade
   Students are expected to do in-class group discussion on various cases/projects. Class participation, group work and homework will also comprise the final grade for the course.

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

Attendance Policy

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

• Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
• Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
• Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
• Taking an exam for another student.
• Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
• Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services (http://www.pstcc.edu/sswd/) may be contacted via Disability Services email or by visiting Alexander 130.