

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

**SYSTEMS ANALYSIS & DESIGN
CSIT 2810**

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

Revised: Fall 2006

NOTE: This course is not intended for transfer credit.

Catalog Course Description:

This course examines established and evolving methodologies for the analysis, design and development of a business information system. Students practice software engineering principles and documentation techniques through team projects. Emphasis is placed on business systems characteristics, prototyping, CASE tools and SDLC phases.

Entry Level Standards:

The entering student is expected to be familiar with database concepts and should have adequate programming abilities in at least one high-level language. Problem solving skills will be essential. Knowledge of Visual programming as well as object-oriented programming is preferred.

Prerequisites:

CSIT 2425 or CSIT programming elective or department approval; and CSIT 1810 and ENGL 1010

Textbook(s) and Other Course Materials:

Required Textbook:

Systems Analysis and Design Methods: 6th Edition, by Jeffrey Whitten & Lonnie Bentley.

Suggested Reading Materials:

Software Engineering, by Ian Sommerville

Object-Oriented Systems Analysis and Design, by George, Batra, Valacich, and Hoffer

Software Project Management, by Joel Henry

Systems Analysis & Design, Second Edition, by Alan Dennis and Barbara Wixom

Introduction to Object-Oriented Analysis and Design with UML and the Unified Process, by Stephen R. Schach.

Object-Oriented Systems Analysis and Design with UML, by Stumpf and Teague.

I. Week/Unit/Topic Basis:

| Week | Topic |
|-------------|--|
| 1 | The Context of Systems Analysis and Design Methods Information System Building Blocks |
| 2 | Information Systems Development Project Management |

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| 3 | Systems Analysis |
| 4 | Fact-Finding Techniques for Requirements Discovery Modeling System Requirements with Use Cases |
| 5 | Data Modeling and Analysis |
| 6 | Process Modeling |
| 7 | Feasibility Analysis and the System Proposal |
| 8 | Object-Oriented Analysis and Modeling Using the UML |
| 9 | Systems Design |
| 10 | Application Architecture and Modeling Database Design |
| 11 | Output Design and Prototyping Input Design and Prototyping User Interface Design |
| 12 | Object-Oriented Design and Modeling Using the UML Systems Construction and Implementation |
| 13 | Systems Operations and Support; Presentation of Team Projects |
| 14 | Presentation of Team Projects |
| 15 | Final Exam Period |

II. Course Objectives*:

- A. Become familiar with the steps in developing and designing a system. V, VIII
- B. Become familiar with the qualifications of a systems analyst and tools that are available to an analyst for solving a problem. IV, IX, X
- C. Demonstrate through group discussion how to approach a problem and come up with different solutions. I, XII
- D. Develop and write a system proposal. V, XI
- E. Implement a system. III, VI
- F. Analyze different alternatives available in getting hardware and software. II
- G. Become familiar with the major guidelines in evaluating hardware/software, and vendors. VII, IX

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

III. Instructional Processes*:

Students will:

1. Analyze, design and develop a well-documented project based on end-user request.

Communication Outcome, Technological Literacy, Transitional strategy, Active Learning Strategy

2. Participate in a software development team. *Communication Outcome, Transitional Strategy, Active Learning Strategy*
3. Practice elements of work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Social/Behavioral Sciences Outcome*
4. Use professionally accepted methods and materials in completion of applications. *Technological Literacy, Transitional Strategy, Active Learning Strategy*
5. Present a finished product to the class. *Communication Outcome, Transitional Strategy, Active Learning Strategy*
6. Participate in a peer review of team projects. *Communication Outcome, Transitional Strategy, Active Learning*
7. Use the Internet as a medium for obtaining documentation and instruction. *Communication Outcome, Technological Literacy, Transitional Strategies, Active Learning Strategy*
8. Work as a team member with the team to solve problems presented in case studies, make oral presentations using visuals of findings to classmates, and conduct discussions of those findings. *Communication Outcome, Transitional Strategies, Active Learning Strategy*

*Strategies and outcomes listed after instructional processes reference TBR'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. Demonstrate an overview of general concepts of system and system analysis and design. A,C,E
2. Understand the tools which are available in providing preliminary and detailed investigation and a major guideline in developing general and detailed design specification. A,B,C,D,E
3. Develop an understanding of the system's life cycle and the tools and techniques available to the analyst. A,B,C,D,E
4. Develop an understanding of different alternative solutions to a given problem and cost/benefit analysis associated with each. A,B,C,D,E
5. Develop an understanding of the Rent/Buy/Lease methods. F
6. Develop an understanding of Request for Proposal and different methods of evaluation including benchmarking. B,D
7. Develop an understanding of different criteria used in evaluating hardware/software and making a final decision. A,B,F,G

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

V. Evaluation:

A. Testing Procedures:

Students are evaluated primarily on the basis of tests and laboratory assignments. Each instructor must provide full details the first week of class via a syllabus supplement.

A minimum of three tests is recommended. Tests will cover material presented in class. Tests are not to be missed without a valid excuse.

B. Laboratory Expectations:

Lab attendance is required. Assignments will be given and must be completed and handed in at the designated date.

Team Project: Students will be assigned to a project team. Teams will consist of 2 to 3 students. The team may pick a business application from work experience. The team will define and formulate its project during the first few weeks, then apply the tools and techniques of systems analysis and design learned in class to develop, design, and code the team's system. CASE tools, such as Designer 2000/Developer 2000, UML modeling tools, Database, MS Project, various programming languages, and prototyping tools may be used in development of the team project.

The prospect of working in a team carries the possibility that not all team members will pull their fair share of the load. For this reason, there will be a confidential peer evaluation during the semester. Individual evaluations are the property of the instructor and will not be shared with other team members under any circumstances.

C. Field Work:

Students are required to read all library materials/handouts assigned in class.

D. Other Evaluation Methods:

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. Each instructor must provide full details the first week of class via a syllabus supplement.

E. Grading Scale:

93 - 100 A
88 - 92 B+
83 - 87 B
78 - 82 C+
73 - 77 C
65 - 72 D
Below 65 F

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. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.] (*Pellissippi State Catalog*)

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which 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. (*Pellissippi State Catalog*)

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately. Please see the instructor privately after class or in his/her office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-7153.

D. Other Policies:

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