ITT Technical Institute

IT400

Systems Analysis

Onsite Course

SYLLABUS

Credit hours: 4

Contact/Instructional hours: 50 (30 Theory Hours, 20 Lab Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisite: IT344 Data and Network Communications or equivalent

Course Description:

A systematic study of purpose, approach, structure, environment and architecture of networking and internetworking technologies in association with their potential users' needs. Methods on capacity planning and traffic engineering in a data communication system's environment will be introduced. Implications of such analysis on the actual deployment and management process of related technologies will also be discussed.

SYLLABUS: Systems Analysis

Instructor: _____

Office hours: _____

Class hours: _____

Major Instructional Areas

Unit 1: The Goal of Systems Analysis
Developing Robust Processes
Integrating Systems Management Processes

Unit 2: Business Considerations for an IT Systems Analysis Approach
Analyzing Business Goals and Constraints
Acquiring Executive Approach
Production Acceptance

Unit 3: Managing Work Flow and Customer Service
Organization for Systems Management
Staffing for Systems Management
Customer Service

Unit 4: Evaluating an Existing Network System
Analyzing Technical Goals and Tradeoffs
Characterizing the Existing Network
Characterizing Network Traffic

Unit 5: Network Management
Network Management
Availability
Performance and Tuning
Capacity Planning

Unit 6: Control Processes
Change Management
Problem Management
Mid-Term Exam (Units 1-5)

Unit 7: Infrastructure Processes
Facilities Management
Storage Management

Unit 8: Evaluating and Documenting Long-Term Asset Deployment

Configuration Management
Testing Your Network Design
Documenting Your Network Design

Unit 9: Security Considerations
Developing Network Security Strategies
Strategic Security

Unit 10: Disaster Recovery
Disaster Recovery

Course Objectives

After successful completion of this course, the student will be expected to be able to:

1. Explain the need to evaluate the business requirements and goals in developing a network solution that will be supported by the organization.
2. Explain how information technology is a customer service driven industry.
3. Identify methods of evaluating the effectiveness of the IT enterprise level processes.
4. Explain network design, analysis, and implementation issues for business-based computing solutions.
5. Discuss and apply analysis methods in the design for operation feasibility.
6. Use appropriate methods to conduct needs assessment.
7. Explain and evaluate the following concepts and terminology with regards to systems analysis:
    A. Reliability
    B. Capacity Measurement and Planning
    C. Availability
    D. Scalability
    E. Manageability
    F. Security
    G. Redundancy and Disaster recovery
    H. Performance and Tuning
    I. Production Acceptance
    J. Maintainability
    K. Usability
    L. Supportability
    M. System Life Cycle
    N. Executive Buy-in
    O. Affordability

8. Explain management concepts and terminology with regards to Information Systems:
    A. Problem Management
    B. Change Management
    C. Storage Management
    D. Network Management
    E. Configuration Management
    F. Capacity Analysis and Management
    G. Security Management
    H. Facilities Management
    I. Performance and Availability Management
    J. Customer Service Management
    K. Staffing Management

L. IT Organization Management (IS/IT roles in organizations)

9. Apply project management models to manage a systems analysis and design project.
10. Evaluate network plans and designs of enterprise network environments.
11. Evaluate traffic engineering in the operational phase.
12. Evaluate capacities and capabilities of an existing infrastructure.
13. Complete a case method course project which integrates the student's understanding of these Network Analysis and Management methods.

Related SCANS Objectives

1. Select and analyze information and communicate the results to others using oral, written, graphic, pictorial, or multi-media methods.
2. Communicate thoughts, ideas, information, and messages.
3. Record information completely and accurately.
4. Communicate thoughts, feelings, and ideas to justify a position.
5. Demonstrate the ability to use critical listening skills by analyzing oral information and summarizing and explaining the meaning.
6. Organize ideas and communicate oral messages appropriate to listeners and situations.
7. Participate in conversation, discussion, and group presentations.
8. Understand and respond to listener feedback; and ask needed questions.
9. Comprehend and use effective and efficient learning techniques to acquire and apply new knowledge and skills.
10. Apply basic budgeting concepts to allocate resources to meet objectives.
11. Exert a high level of effort and persevere toward goal attainment.
12. Specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
13. Recognize problems and utilize the systematic problem solving method, analyze the problem, establish criteria for the solution, analyze solution ideas, select or create solution and defend your choice.
14. Suggest modifications to existing systems and develop new or alternative systems to improve performance.
15. Recognize a discrepancy between what is and what should or could be, identify possible reasons for the discrepancy, and devise and implement a plan of action to resolve it. Evaluate and monitor progress, and revise plan as indicated by findings.
16. Identify need for data research, select, retrieve, and interpret written information from a variety of documents including computerized databases, books, periodicals, and other documents. Evaluate relevant information, and organize, maintain, analyze, interpret, communicate, and use applicable information.
17. Evaluate accuracy and reliability of information found on Internet and in electronic databases.
18. Participate cooperatively as a team member, teach, learn from, and negotiate with diverse members and make a contribution to team success.
19. In a simulation, work cooperatively and communicate clearly with clients and customers to satisfy their expectations.
20. Utilize the ITT Tech Virtual library to aid in further understanding of the material and as a research tool for the course project.

Teaching Strategies

The curriculum is designed to promote a variety of teaching strategies that support the outcomes described in the course objectives and that foster higher cognitive skills. Delivery makes use of various media and delivery tools in the classroom.

Course Resources

Student Textbook Package

- Oppenheimer, Priscilla, and Rich Schiesser. *System Analysis*. Indianapolis: Pearson Learning Solutions, 2006.

References and Resources

ITT Tech Virtual Library
Login to the ITT Tech Virtual Library (http://www.library.itt-tech.edu/) to access online books, journals, and other reference resources selected to support ITT Tech curricula.

- **General References**

  - **Books**

The following books are related to this course and are available through the ITT Tech Virtual Library

- http://www.library.itt-tech.edu >Books >Glen, Paul. *Leading Geeks: How to Manage the People Who Deliver Technology*. Jossey-Bass. 2003
- http://www.library.itt-tech.edu >Books>*IT Project+ Study Guide, Second Edition (Exam PKO-002)*, Sybex, Inc. 2004

- **Other Resources**
  - Project Management Institute: www.pmi.org
  - Systems Analysis: http://www.umsl.edu/~sauter/analysis/analysis_links.html
  - Cisco: www.cisco.com
  - CompTIA: www.comptia.org
  - OpenNMS: www.opennms.org
  - Network World: www.networkworld.com
  - IEEE Computer Society: www.computer.org

All links to web references outside of the virtual library are always subject to change without prior notice

Evaluation & Grading

COURSE REQUIREMENTS

1. **Attendance and Participation**
   Regular attendance and participation are essential for satisfactory progress in this course.

2. **Completed Assignments**
   Each student is responsible for completing all assignments on time.

3. **Team Participation (if applicable)**
   Each student is responsible for participating in team assignments and for completing the delegated task. Each team member must honestly evaluate the contributions by all members of their respective teams.

Evaluation Criteria Table

The final grade will be based on the following weighted categories:

CATEGORY	WEIGHT
Assignments	15%
Lab Exercises	15%
Quizzes	10%
Project	30%
Midterm exam	15%
Final Exam	15%
Total	**100%**

Grade Conversion Table

Final grades will be calculated from the percentages earned in class as follows:

A	90 - 100%	4.0
B+	85 - 89%	3.5
B	80 - 84%	3.0
C+	75 - 79%	2.5
C	70 - 74%	2.0
D+	65 - 69%	1.5
D	60 - 64%	1.0
F	<60%	0.0

Course Outline

Wk	Lsn	Lesson Title	Reading	Activity Type				
				Assign-ment	Quiz	Project	Lab	Exam

1	1	The Goal of Systems Analysis	Chapter 7: Developing Robust Processes, Chapter 8: Integrating Systems Management Processes	X		X	X	
2	1	Business Considerations for an IT Systems Analysis Approach	Chapter 1: Analyzing Business Goals and Constraints, Chapter 2: Acquiring Executive Support, Chapter 3: Production Acceptance	X		X	X	
3	1	Managing Work Flow and Customer Service	Chapter 4: Organizing for Systems Management, Chapter 5: Staffing for Systems Management, Chapter 6: Customer Service	X	X	X	X	
4	1	Evaluating the Existing Network System	Chapter 9: Analyzing Technical Goals and Tradeoffs, Chapter 10: Characterizing the Existing Internetwork, Chapter 11: Characterizing Network Traffic	X		X	X	
5	1	Network Management	Chapter 12: Network Management, Chapter 13: Availability, Chapter 14: Performance and Tuning , Chapter 15: Capacity Planning	X		X	X	

6	1	Control Processes Mid term exam	Chapter 16: Change Management, Chapter 17: Problem Management	X		X	X	X
7	1	Infrastructure Processes	Chapter 18: Facilities Management, Chapter 19: Storage Management	X		X	X	
8	1	Evaluating and Documenting Long-Term Asset Deployment	Chapter 20: Configuration Management, Chapter 21: Testing Your Network Design, Chapter 22: Optimizing Your Network Design	X	X	X	X	
9	1	Security Considerations	Chapter 23: Developing Network Security Strategies, Chapter 24: Strategic Security	X		X	X	
10	1	Disaster Recovery	Chapter 25: Disaster Recovery	X		X		
11	1	Review and Final Exam						X

Intent/Interface

The intent of this course is to create among students awareness of the non-technical constraints of and requirements from IT systems. This is done by evaluating the IT systems and processes through a systems analysis approach that takes into account business requirements such as customer service, budget considerations, production, and culture. The course will explain principles that will enable more successful integration of IT processes into business processes. In the long term, this type of understanding will help network engineers in successfully managing IT systems.

Before taking this course, the students should learn about project management concepts and the technical requirements to manage a network. The prerequisite for this course, Network System Management, covers these concepts.

Please read the comments made under the Instructor Notes for further guidance.