STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

SOET 373 – MANAGEMENT TELECOMMUNICATIONS

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SCHOOL OF ENGINEERING TECHNOLOGY
ENGINEERING SCIENCE & ELECTRICAL ENGINEERING
TECHNOLOGY DEPARTMENT
SPRING 2012

SOET 373 – MANAGEMENT TELECOMMUNICATIONS

A. TITLE : MANAGEMENT TELECOMMUNICATIONS

B. COURSE NUMBER: SOET 373

C. CREDIT HOURS: 3

D. WRITING INTENSIVE COURSE: YES

E. WEEKS PER SEMESTER: 15

F. SEMESTER OFFERED: FALL/SPRING

G. HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY: 3- hours lecture per week

H. CATALOG DESCRIPTION: This course provides the student with opportunity to learn both voice and data communications, why companies and corporations feel that telecommunications is vitally important as well as how the regulatory environment affects the telecommunications industry. The technology is explained in an easy to understand, yet thorough, manner. Current and emerging technologies, the International Organization for Standardization, how telecommunications works, designed, and managed are covered. The student will learn why it is necessary to manage telecommunications, the functions of the telecommunications department, issues that telecommunications managers will be dealing with, and many real-world case studies.

I. PRE-REQUISITES/CO-COURSES: Junior status or permission of instructor.

J. GOALS (STUDENT LEARNING OUTCOMES)

By the end of this course, the student will be able to:

a. Explain why telecommunications is an integral part of the contemporary business environment, and many of the requirements for voice and data communications systems.
b. Describe the structure of the U.S. telecommunications industry, and the difference between communications architectures and communications standards.
c. Explain the need for communications architecture, standards, and ISO-OSI models.

d. Explain why it is desirable to manage voice and data communications together, and where the telecommunications department fits within the organization.
e. Describe the functions of the telecommunications department, and the telecommunications management responsibilities.
f. Describe many of the trends that are shaping the future capabilities of telecommunications systems.
g. Understand why these new telecommunications capabilities are likely to have profound impact on our society.
h. Understand some of the reasons for telecommunications Act of 1996, and the basics of satellite, fiber, and copper communications.
i. Understand the difference between analog and digital communications, and distinguish among communications lines, circuit, and channel.
j. Describe the primary error prevention and detection techniques for communications circuits, analyze various case studies.

Institutional Student Learning Objectives (SLO)

(1) Communication (2) Critical Thinking (3) Professional Competence
(4) Inter-Intrapersonal Skills

Course Objectives	Institutional SLO
a. Explain why telecommunications is an integral part of the contemporary business environment, and many of the requirements for voice and data communications systems.	1. Communication 3. Professional Competence
b. Describe the structure of the U.S. telecommunications industry, and the difference between communications architectures and communications standards.	3. Professional Competence 1. Communication
c. Explain the need for communications architecture, standards, and ISO-OSI models.	1. Communication 3. Professional Competence
d. Explain why it is desirable to manage voice and data communications together, and where the telecommunications department fits within the organization	1. Communication 3. Professional Competence

e. Describe the functions of the telecommunications department, and the telecommunications management responsibilities.	3. Professional Competence
f. Describe many of the trends that are shaping the future capabilities of telecommunications systems.	1. Communications 3. Professional Competence
g. Understand why these new telecommunications capabilities are likely to have profound impact on our society.	3. Professional Competence
h. Understand some of the reasons for telecommunications Act of 1996, and the basics of satellite, fiber, and copper communications.	3. Professional Competence
i. Understand the difference between analog and digital communications, and distinguish among communications lines, circuit, and channel.	2. Critical Thinking
j. Describe the primary error prevention and detection techniques for communications circuits, analyze various case studies.	2. Critical Thinking

K. TEXTS:
Jerry FitzGerald and Alan R. Dennis, Business Data Communications Networking, 11th Edition, 111 River Street, Hoboken, NJ 07030: John Wiley & Sons, Inc., 2009.

L. REFERENCE:

Stanford H. Rowe II, Telecommunications for Managers, 5th Edition, Upper Saddle River, New Jersey: Prentice Hall, 2002.

M. EQUIPMENT: Computer and Internet Connectivity.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS: Examinations, Participation, Assignments and Term paper.

P. DETAILED TOPICAL OUTLINE:

1. Introduction to Telecommunications

    a. Basic Elements of Telecommunications System
    b. Importance of Telecommunications to Business
    c. New Technology
    d. Requirements for Telecommunications Systems
    e. Case Study

2. External Influences on Telecommunications in the Enterprise

    a. Regulatory Environment
    b. Telecommunications in Other Countries
    c. The Telecommunications Industry in the United States
    d. Equipment Manufacturers and Providers
    e. Case Study

3. Telecommunications Architectures and Standards

    a. Standards and Standards-Making Organizations
    b. Advantages and Disadvantages of Standards
    c. The ISO-OSI Reference Model
    d. Communications Architectures

4. Voice Communications

    a. Central Office Equipment
    b. Central Office Organizations
    c. The Public Telephone Network
    d. Analog Signals
    e. Multiplexing
    f. Modulation
    g. ISDN
    h. Private Branch Exchange/Private Automatic Branch Exchange
    i. Wireless Communications
    j. Case Study

5. Communications Circuits

    a. Types of Circuits
    b. Circuit Media
    c. Circuit Acquisition and Ownership

d. Circuit Identification
e. Circuit Error Conditions
f. Impact of Errors
g. Error Prevention
h. Error Detection
i. Error Correction
j. Case Study

6. Network Management and Operations

a. Why it is important to manage the Network
b. The functions of Network Management
c. Network Security
d. The Physical Facility
e. Staffing the Network Operations Group
f. Network Management Outsourcing
g. Communications Technical Support
h. Staffing the Communications Technical Support Group
i. Case Study

7. Network Design and Implementation

a. The Network Design and Implementation Process
b. Network Analysis and Design
c. Network Implementation
d. LAN Design
e. Voice Network Design
f. Case Study

8. Telecommunications Department Management

a. The need for Proactive Telecommunications Management
b. Where the Telecommunications Organization Fits Within the Company
c. The Function of the Telecommunications Department
d. Telecommunications Management Responsibilities
    - Planning
    - Staffing
    - Organizing
    - Planning
    - Directing
    - Controlling

Cost Effectiveness/Other Management Issues
- Selling the Capabilities of the Telecommunications Department
- Project Justification Criteria
- Transnational Data Flow

Survey of Telecommunications Management Trends

Case Study

9. Future Directions in Telecommunications

    a. Trends in Electronics
    b. Trends in Communications Circuits
    c. Trends in Standardization
    d. Trends in Regulation
    e. Trends in the Applications of Communications Technology
    f. Sociological Impact of Telecommunications Capabilities
    g. Case Studies