

## ELEC 6120/6126 – TELECOMMUNICATION NETWORKS

**2002 Catalog Data:** **ELEC 6120/6126. TELECOMMUNICATION NETWORKS (3). Pr., ELEC 3400.**  
Introduction to public and private telecommunication systems, including switched telephone networks, circuit and packet switching, voice and data networks, transmission technologies and protocols, switching protocols and architectures, and network management.

**Textbook:** Essential Guide to Telecommunications, by Annabel Z. Dodd, Prentice Hall 2002

**Coordinator:** C. Wu, Professor of ECE

**Goals:** This course provides an introduction to telecommunication network architecture, technologies, design and management.

### Prerequisites by topic:

1. Computer organization
2. Basic communication theory

### Topics:

1. Plain Old Telephone System (POTS) (2 classes)
2. Public Switching Telephone Network (PSTN) (3 classes)
3. circuit switching and packet switching (3 classes)
4. frame relay (3 classes)
5. local subscriber loop and trunk, (2 classes)
6. Signal System 7 (SS7) (5 classes)
7. ISDN (2 classes)
8. DSL (3 classes)
9. ATM (5 classes)
10. SONET (3 classes)
11. wavelength division multiplexing (WDM) (3 classes)
12. SMDS (3 classes)
13. voice over IP (3 classes)
14. network management (3 classes)
15. Tests (2 classes)

### Typical Methods for Evaluating Student Performance: Grading Scale:

- |                           |            |
|---------------------------|------------|
| • Homework (10%)          | A: 90-100% |
| • Project (30%)           | B: 80-89%  |
| • Two tests (30%)         | C: 70-79%  |
| • Final examination (30%) | D: 60-69%  |
|                           | F: 0-59%   |

**Class attendance:** Class attendance and its effect on course grade is the prerogative of the individual instructor and will be part of the course outline and announced the first day of class.

**Policy on unannounced quizzes:** Unannounced quizzes and their effect on course grade are the prerogative of the individual instructor and will be part of the course outline and announced the first day of class.

ABET category content as estimated by faculty member who prepared this course description:

Engineering science: 2 credits or 67%  
Engineering design: 1 credit or 33%

Students who need special accommodations should make an appointment to discuss their needs as soon as possible.

**Justification for Graduate Credit:** The material in this course is beyond what is typically taught in undergraduate electrical engineering programs, and would thus be appropriate for both incoming graduate students and advanced undergraduates. The prerequisite material is covered in a four-course sequence, culminating in ELEC 3400.

Prepared by:     C Wu    

Date:     11/11/2001