

ELEG 4623 - COMMUNICATION SYSTEMS

Fall Semester, 1996

Catalog Data: ELEG 4623 Communication Systems. Credit 3. Various modulations systems used in communications.

1995-96 AM and FM fundamentals, pulse modulation, signal to noise ratio, threshold in FM, the phase locked loop, matched filter detection, probability of error in PSK, FSK, DPSK. The effects of quantization and thermal noise in digital systems. Information theory and coding. Prerequisite: ELEG 3123. Corequisite: ELEG 3143 or consent.

Textbook: Communication Systems Engineering, Proakis and Salehi, Prentice Hall, 1995.

References: Analog & Digital Communications, W. David Gregg, Wiley, 1979.

Principles of Digital & Analog Communications, B. P. Lathi, Holt, Rinehart and Winston, 1983.

Coordinator: R. A. Jones, Professor of Electrical Engineering.

Goal: To introduce the students to concepts, systems, practical applications, and services in the electrical generation and dissemination of aural, visual, and data information.

Prerequisites by Topic:

1. Fourier theory.
2. Convolution.
3. Probability, random variables, stochastic processes.

Topics:

1. Introduction & Overview. (2 classes*)
2. Linear modulation. (3 classes)
3. Angle modulation. (3 classes)
4. Attention, interference and distortion. (4 classes)
5. Signal output quality. (3 classes)
6. Pulsed communication systems. (3 classes)
7. Digital communication systems. (4 classes)
8. Multiplexing and compound modulation. (3 classes)
9. Quantized systems. (4 classes)
10. Pulse code modulation. (3 classes)
11. Carrier systems. (3 classes)
12. Matched filters. (2 classes)
13. Tests. (8 classes)

Computer Usage:

1 computer project. "C" or "FORTRAN"

Laboratory Projects:

None

ELEG 4623
Fall Semester, 1996
Page Two

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

Engineering Science:	2.5 Credits or 83%.
Engineering Design:	0.5 Credits or 17%.

* Three 50 minute classes per week.

Prepared By: _____ Date: _____