

EE4610: Communication Electronics

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Course Description:

This is an introductory course of integrated circuits for wireline/wireless/optical communications. It covers basic modulation/demodulation schemes, system design considerations, and key function blocks. All material is based on modern VLSI implementation viewpoints.

Prerequisites: Microelectronics

Textbook: Class Notes and Technical Papers

Teaching Method:

Lecture: 3 hours

Outside Study: 3 hours

References:

1. Design of Integrated Circuits for Optical Communications, B. Razavi, McGraw-Hill, 2003.
2. RF Microelectronics, B. Razavi, Prentice Hall, 1998.

Grading:

1. Homework: 40%
2. Final Exam: 30%
3. Case Study and Presentation: 30%

Outline:

1. Introduction of modern communication systems
2. Overview of wireline/optical communication circuits
3. Channel
4. Drivers
5. Equalizers
6. Phase-Locked Loops (PLLs)
7. Clock and data recovery (CDR) Circuits