EEL 6534  Digital Communication Systems
3 Credit Hours (available online)

Instructor:
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State of Florida 21st Century World Class Scholar
Distinguished University Professor, Agere Systems Chair, and NAE Member

Course objectives:
The course covers topics related to the reliable transmission of digital data streams between two points, the fundamental principles and essential components and tradeoffs in modern digital communication systems. This includes transmitter and receiver architectures, and designs at the system level, the ability to apply this knowledge to practical communication channels, and the ability to quantify and evaluate the performance of communication systems, as well as assess and optimize tradeoffs under various channel conditions.

Topics Include:
- Introduction to Digital Communications Systems.
- Deterministic and Random Signal Analysis.
- Digital Modulation Schemes.
- Detection and Estimation Theory for the AWGC.
- Synchronization for Single-Carrier (QAM) Systems.
- Information Theory, Error Control and Coding.
- Communications over Band-Limited Channel
- MIMO --- Smart Antennas

Prerequisite (recommended): Undergrad courses in probability, linear systems, and communications.