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| Course Code ECE-552 | Course Title Digital Communications | ECTS Credits 8 |
| Department Engineering | Semester Fall or Spring | Prerequisites ECE-332, ECE-350 |
| Type of Course Required | Field Engineering | Language of Instruction English |
| Level of Course 2 st Cycle | Year of Study 1 st | Lecturer(s) Dr Ioannis Kyriakides |
| Mode of Delivery Face-to-face | Work Placement N/A | Co-requisites None |

Objectives of the Course:

The main objectives of the course are to:

- explain digital modulation for digital transmission of a message
- explain the concept of digital amplitude and angle modulation
- explain pulse shaping
- explain channel estimation and tracking
- identify receiver performance

Learning Outcomes:

After completion of the course students are expected to be able to:

- represent signals using digital modulation
- identify linear and non-linear, analog and digital, amplitude and angle modulation methods
- apply amplitude and angle digital modulation methods
- explain the basics of pulse shaping
- explain the basics of channel estimation and tracking
- explain the basics of receiver performance in terms of bit error rate

Course Contents:

- Characterization of signal and systems
- Digital Modulation
- Amplitude modulation
- Angle modulation
- Channel estimation
- Receiver performance – Bit error rate

Learning Activities and Teaching Methods:

Lectures, in-class assignments.

Assessment Methods:

Homework, in-class assignments, projects, exams, final exam.

Required Textbooks/Reading:

| Authors | Title | Publisher | Year | ISBN |
|--------------------------------|-----------------------------------|------------------|-------------|-------------|
| Simon Haykin, Michael Moher | Modern Wireless Communications | Prentice Hall | 2005 | 0130224727 |

Recommended Textbooks/Reading:

| Authors | Title | Publisher | Year | ISBN |
|-----------------------------------|--------------------------------------|------------------|-------------|-------------|
| John G. Proakis, Masoud Salehi | Digital Communications | McGraw Hill | 2007 | 0072957166 |
| John G. Proakis | Communication Systems Engineering | Prentice Hall | 2003 | 0130617938 |