Communications Engineering (ELC 318)

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Outline

Why ELC 318?

Activity: Discussion

Why ELC 318?

Power Engineering - Electrical Communications

- Multi-Discipline Engineering
- Inter-Discipline Projects
  1. Power Line Communications
  2. Smart Grids
  3. ...

Why ELC 318?

What will you study?

- Introduction to Communications Theory
- Samples of Analog and Digital Communication Systems
- Applications on "Communications" in Power Engineering

How is ELC 318 organized?

ELC 318

The course is divided into two main parts:

1. Analog Communication Systems
2. Digital Communication Systems

Course Contents (Part II)

1. Fourier Analysis
    1. Continuous Time Fourier Series
    2. Continuous Time Fourier Transform
2. Pulse Code Modulation Systems
    1. Sampling
    2. Quantization
    3. Baseband Digital Modulation
    4. Pulse Code Modulation
3. Applications
    1. **Assignment:** Group Activities will be requested

References


B. P. Lathi and Zhi Ding (2010)
Modern Digital and Analog Communication Systems, 4th Edition.
Oxford University Press.


Simon Haykin and Michael Moher (2010)
Communication Systems, 5th Edition.
John Wiley.


Alan V. Oppenheim, and Alan S. Willsky (1997)
Signals and Systems, 2nd Edition.
Prentice Hall.

Introduction: ILOs of ELC 318?

By the end of this course, the student should be able to:

- Derive the Fourier transform of a time signal
- Understand the sampling theorem
- Differentiate between analog and digital pulse modulation
- Differentiate between the different types of quantization schemes
- Differentiate between the different sub-families of pulse modulation

Introduction: ILOs of ELC 318?

By the end of this course, the student should be able to:

- Understand the meaning of amplitude and frequency modulation (AM and FM)
- Identify and differentiate between the different types of AM modulators
- Design AM systems that satisfy certain requirements
- Differentiate between the different kind of FM systems

Grading System

Item	Grade
Class Work	30
Final Exam	70
Total	100

Table: Grading System - ELC 318

Item	Grade
Midterm/Quizzes	5
Reports/Activities	5
Final Exam	35
Total	45

Table: Grading System - ELC 318 (Part II)

Instructor

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Code of Conduct

Instructor

✓

- ...
- ...

X

- ...
- ...

Students

✓

- ...
- ...

X

- ...
- ...

Thank You

Questions ?

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