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Course Syllabus

SIGNALS AND SYSTEMS

Printed by: jfmoncay

Program: Telecommunications Engineering

1. Course number and name

TELG1001 - SIGNALS AND SYSTEMS

2. Credits and contact hours

2 credits and 3 contact hours

3. Instructor's course or coordinator's name

MARIA ANTONIETA ALVAREZ VILLANUEVA

4. Text book, tittle, author, and year

• Rao Deergha. Signals and Systems (First edition)

a.Other supplemental materials

• Steven T. Karris. Signals and Systems with MATLAB Computing and Simulink Modelling (Fifth Edition)

• Oppenheim, Alan V. & Willsky, Alan S. & Young, Ian T.. Signals and systems (2 edition)

• Haykin, Simon S & Van Veen, Barry. Signals and systems (2 edition)

5. Specific course information

a.   Brief description of the content of the course (catalog description)

This course presents an introduction to general concepts of signal representation in continuous and discrete systems in time and frequency domain. In addition, linear and time-invariant systems (LTI) are analyzed, through block diagrams and using mathematical tools such as convolution, Z-transform, Fourier series and transform.

b.   Prerequisites

SUPERIOR MATHEMATICS - MATG1027

c.   This course is: Required

6. Specific goals for the course

a.   Specific outcomes of instruction

1.- To represent signals in continuous and discrete time using mathematical tools.

2.- To apply integral operation or convolution sum for calculating the impulse response of continuous and discrete LTI systems, respectively.

3.- To determine the frequency spectrum of a continuous signal using the Fourier transform.

b.   Explicity indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

• An ability to function on multidisciplinary teams

• An ability to identify, formulate and solve engineering problems

7. Brief list of topics to be covered

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1.- Introduction to signals and systems

2.- Discrete-time systems

3.- Finite impulse response (FIR) filters

4.- Frequency analysis of discrete systems

5.- Continuous-time systems

6.- Frequency analysis of continuous-time systems