Course Syllabus

TELECOMMUNICATIONS FUNDAMENTALS

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Program: Telecommunications Engineering

1. Course number and name

TELG1009 - TELECOMMUNICATIONS FUNDAMENTALS

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

JORGE ANDRES BRITO COLLANTES

4. Text book, tittle, author, and year

• Jeanne Liedtka, Andrew King, Kevin Bennett.. Solving Problems with design thinking: Ten stories of what works (Columbia Business School Publishing (Book 2))

a.Other supplemental materials

• Vijay Kumar. 101 Design Methods: A structured approach for driving innovation in your organization. (1st)

5. Specific course information

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

In this course, the skills to define the problem and the development of innovative solutions to everyday problems in the telecommunications environment associated with a community, an institution or company in the local area are enhanced. Tools and concepts of the "design thinking" methodology are exploited. In addition, hardware and software rapid prototyping techniques are applied.

b. Prerequisites

PROBLEM SOLVING I - INDG1001

c. This course is: Required

6. Specific goals for the course

a. Specific outcomes of instruction

1.- To identify the problem statement by applying fundamental concepts of telecommunications engineering.

2.- To analyze telecommunications problems using the methodological processes of design thinking.

3.- To investigate creative and innovative solutions for the implementation of prototypes in hardware or software.

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

• A broad education necessary to understand the impact of engineering solutions in a social, environmental, economic and global context

• A recognition of the need for, and an ability to engage in life-long learning

7. Brief list of topics to be covered

1.- Analysis and problem resolutions.

2.- Understanding user's needs and active listening of user's needs.

3.- Problem definition.

4.- Generation of ideas.

5.- Prototyping tools.

6.- Validation and tests.