Course Syllabus

DIGITAL TELEPHONY

Program: Telecommunications Engineering

1. Course number and name

TELG1017 - DIGITAL TELEPHONY

2. Credits and contact hours

2 credits and 2 contact hours

3. Instructor's course or coordinator's name

JORGE ANDRES BRITO COLLANTES

4. Text book, tittle, author, and year

• Sun, Lingfen & Mkwawa, Is-Haka & Jammeh, Emmanuel & Ifeachor, Emmanuel C.. Guide to voice and video over IPfor fixed and mobile networks (;)

a.Other supplemental materials

• Jonathan Davidson, James F. Peters, Manoj Bhatia, Satish Kalidindi, Sudipto Mukherjee. Voice over IP Fundamentals (Segunda)

• John G. van Bosse & Fabrizio U. Devetak. Signaling in telecommunications networks (2da Ed.)

• Chakraborty, Tamal, Misra, Iti Saha, Prasad, Ramjee.. VoIP Technology: Applications and Challenges. (Primera)

5. Specific course information

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

The course studies traditional telephone systems including numbering plans and access networks. Protocols and quality assurance mechanisms of the telephony service on the Internet protocol (IP) are analyzed in depth, to perform traffic and signaling simulation in IP telephony, as well as network troubleshooting. Additionally, a general description of the new generation network architectures (NGN) and IP multimedia subsystem (IMS) is made.

b. Prerequisites

SWITCHING NETWORKS DESIGN - TELG1013

c.   This course is: Required

6. Specific goals for the course

a.   Specific outcomes of instruction

1.- To explain the operation of conventional telephone networks for service assessment.

2.- To analyze the potential of IP telephony networks through comparison with conventional telephone networks.

3.- To determine basic traffic parameters of IP telephony networks through simulation tools.

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

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outcomes are addressed by the course

- An ability to design a system, component or process to satisfy realistic constraints
- A knowledge of contemporary issues

7. Brief list of topics to be covered

1.- Traditional telephone network.

2.- Voice over IP and IP telephony.

3.- Introduction to new generation network (NGN) and IP Multimedia Subsystem (IMS).

4.- Traffic simulations and signaling in IP telephony.