



ANALOG COMMUNICATION

PROF. GOUTAM DAS

Department of Telecommunication
IIT Kharagpur

INTENDED AUDIENCE : Electronics and Communication Engineering / Electrical Engineering

PRE-REQUISITES : Familiarity with a Signals and System

COURSE OUTLINE :

The course will introduce the participants to the signal representation in both time and frequency domain, basic analog communication techniques like modulation theory, system design for analog modulator and demodulator, random process and noise analysis.

ABOUT INSTRUCTOR :

Prof. Goutam Das received the Ph.D. degree from the University of Melbourne, Melbourne, Australia, in 2008. He has worked as a Postdoctoral Fellow at Ghent University, Ghent, Belgium, from 2009–2011. He is currently working as an Associate Professor in the Indian Institute of Technology Kharagpur, Kharagpur, India. His research interests include optical access networks, optical data center networks, radio over fiber technology, optical packet switched networks and media access protocol design for application specific requirements.

COURSE PLAN :

Week 01 : Introduction to Fourier Series and Fourier Transform

Week 02 : Energy and Power Spectral Densities

Week 03 : Modulation Theory

Week 04 : Amplitude Modulation – AM and DSB-SC

Week 05 : SSB-SC and VSB

Week 06 : Angle Modulation – FM, PM

Week 07 : Sampling Theorem

Week 08 : Pulse Modulation and PCM

Week 09 : Introduction to Random Process

Week 10 : Spectral Analysis of Random Process

Week 11 : Characteristics of Band-pass noise

Week 12 : Performance Analysis of AM, DSB-SC with Noise