ANALOG COMMUNICATION

PROF. GOUTAM DAS  
Department of Electrical Engineering  
IIT Kharagpur

TYPE OF COURSE : Rerun | Core | UG
COURSE DURATION : 12 weeks (26 Jul’21 - 15 Oct’21)
EXAM DATE : 23 Oct 2021

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 has obtained his B.Tech., M.Tech. and Ph.D. degrees in E&ECE from the Bengal Engineering college, Shibpore, IIT Kharagpur and University of Melbourne respectively. He joined the Indian Institute of Technology, Kharagpur, as a faculty member in 2011, in G. S. Sanyal School of Communications, where he is presently an Assistant Professor. He has over 10 years of teaching and research experience. He has more than 60 publications to his credit in international journals and conferences. His research interests include Optical and wireless Access Networks – System and protocol design and performance evaluation.

COURSE PLAN :

Week 01 : Introduction to Fourier Series and Fourier Transform  
Week 02 : Energy and 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