PROF. GOUTAM DAS  
Department of Electrical Engineering  
IIT Kharagpur

TYPE OF COURSE : Rerun | Core | UG
COURSE DURATION : 12 weeks (20 Jul'20 - 9 Oct'20)
EXAM DATE : 17 Oct 2020

INTENDED AUDIENCE : B.E/B.Tech, B.Sc
PRE-REQUISITES : 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. He had been the TPC Chair of IEEE ANTS 2011, 2012, Editorial Board member of Springer Journal of Photonic Network Communications.

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