General Sir John Kotelawala Defence University
Department of Electrical, Electronics and Telecommunication Engineering
Module Descriptor - Communication Theory II

Module Code	ET3223	**Module Title**	Communication Theory II				
Credits	3	**Hours/ Semester**	**Lectures**	40	**Prerequisites**	ET1202 ,ET2213	
GPA/ NGPA	GPA		**Continuous Assessments/ Tutorials**	10			
Module Objectives	To provide the students with the knowledge of digital communication schemes						
Learning Outcomes	After the completion of this module, the learner will be able to,						
	LO1:	**Analyze** the concepts of baseband digital transmission					
	LO2:	**Examine** the digital modulation techniques					
	LO3:	**Analyze** noise in Digital Communication					
	LO4:	**Demonstrate** the knowledge of principles of Information Theory					
	LO5:	**Apply** source coding for digital data compression					
	LO6:	**Apply** channel coding for error control					
Contents	**Base Band Data Transmission** Baseband Transmission of Digital Data, Intersymbol Interference, Nyquist channel, raised cosine pulse spectrum, Baseband transmission of M-Ary data, The eye pattern						**LO1**
	Digital Bandpass Modulation Techniques Binary Amplitude shift Keying, Phase shift Keying, Frequency Shift keying, Noncoherant digital modulation scheme, M-ary Digital Modulation scheme, Mapping of digitally modulated waveforms onto constellations of signal points.						**LO2**
	Noise in Digital Communication BER, Detection of a single pulse in noise, Optimum detection of binary PAM in noise, Optimum Detection of BPSK Differential Detection in noise.						**LO3**
	Introduction to Information Theory Probabilities, measure of information						**LO4**
	Source Coding for Digital Data Properties of codes, Code Length, Huffman code, techniques of data compression.						**LO5**
	Channel Coding Principle of channel coding, Structure of digital communication systems, Linear block codes, Convolutional codes, Trellis Code modulation, Turbo Coding						**LO6**
Laboratory/ Practical Sessions	•	Detection of NRZ signals in noise					LO2, LO3, LO6
	•	Generation an Demodulation of BPSK Signals					
	•	BPSK Performance in Noise					
	•	MATLAB Simulation on Convolution Codes.					
Method of Assessment	Continuous assessments : 30% End semester examination : 70%						
References	**1.**	Simon S. Haykin_(2000)._Communication Systems_Wiley;.					
	2.	John Proakis._(2007)._Digital Communiactions._McGraw-Hill Education.					