1.	Title of the course	Advanced Communications Laboratory
2.	Course number	EE510P
3.	Structure of credits	0-0-3-2
4.	Offered to	PG
5.	New course/modification to	Modification To EE5292/6
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** The primary objective of this lab is to understand the principles and design of communication systems. The course involves design and simulation of different signalling/modulation/coding techniques under the additive white Gaussian noise (AWGN) channel. This course will help the students not only to assimilate the critical concepts involved in the theory but also give them some flavour on how to design a communication system.	
10.	**Course Content:** Generation of different probability density functions and probability mass functions; Performance analysis of memoryless modulation schemes in AWGN channel; Performance analysis of memory based modulation schemes in AWGN channel; Design and simulation of channel encoding and decoding under AWGN channel; Performance analysis of advanced communication techniques such as MC-CDMA and OFDM.	
11.	**Textbook(s):** 1. John Proakis and Massoud Salehi, *Digital Communications*, McGraw Hill (2008).	
12.	**Reference(s):** 1. Simon Haykin, *Digital communication systems*, Wiley (2013). 2. Lathi B P, Zhi Ding, Modern Digital & Analog Communication Systems, Oxford Publication, (2011). 3. David Tse, Pramod Viswanath, Fundamentals of Wireless Communication, Cambridge University Press, (2005).	