

1.	Title of the Course	Wireless Communication
2.	Course Number	EE556L
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	Modification To EE5022/4
7.	To be Offered by	Department of Electrical Engineering
8.	To take effect from	July 2020
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: To introduce fundamentals of wireless communication techniques. To design and analyse the performance of wireless communication systems.	
12.	Course Content: Random vectors and random processes, complex Gaussian random vectors, scalar and vector detection in Gaussian noise, physical modeling of wireless channel, multipath and fading in wireless communication system, Doppler spread, delay spread, single carrier versus multi carrier systems, orthogonal frequency division multiplexing (OFDM), modulation and demodulation in OFDM systems, direct sequence spread spectrum signals, frequency hopping spread spectrum signals, introduction to multi-carrier (MS) DS-SS; Multiple antenna systems: MIMO receivers, introduction to space-time codes.	
13.	Text book(s): 1. Proakis J and Salehi M, <i>Digital Communications</i> , McGraw Hill (2008). 2. Tse D and Viswanath P, <i>Fundamentals of Wireless Communication</i> , 1st Edition, Cambridge University Press (2005).	
14.	Reference(s): 1. Goldsmith A, <i>Wireless Communication</i> , 1st Edition, Cambridge University Press (2005). 2. Madhow U, <i>Introduction to Communication Systems</i> , 1st Edition, Cambridge University Press (2014). 3. Madhow U, <i>Fundamentals of Digital Communication</i> , 1st Edition, Cambridge University Press (2008).	