

1.	Title of the course	RF Transceiver Design
2.	Course number	EE550L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To EE5056/17
6.	To be offered by	Department of Electrical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	CoT
9.	Course Objective(s): To present a cohesive overview of the fundamental concepts required for the design and analysis of RF stages of a modern wireless system.	
10.	Course Content: Basic introduction to wireless systems; Noise and distortion in microwave systems; An overview and recap to microwave networks, transmission lines, antennas and filters; Amplifiers: 2-port power gains and stability; Amplifier design using S-parameters; Low-noise amplifiers; Power amplifiers; Mixers: mixer characteristics; Diode mixers; FET mixers; Balanced mixers; Image reject mixers; Devices for microwave switches: PIN diode, BJT, FET; Device models; Types of switches; Switch configurations; Basic theory of switches; Multi-port, broad-band and isolation switches; RF and microwave oscillators and frequency synthesizers; Receiver architecture and design.	
11.	Textbook(s): 1. Gonzalez G, <i>Microwave Transistor Amplifiers: Analysis and Design</i> , 2nd Edition, Prentice-Hall (1997). 2. Pozar D M, <i>Microwave and RF Design of Wireless Systems</i> , 1st Edition, John Wiley & Sons (2000).	
12.	Reference(s): 1. Bahl I and Bhartia P, <i>Microwave Solid State Circuit Design</i> , 2nd Edition, John Wiley & Sons (2003). 2. Chang K, Bahl I and Nair V, <i>RF and Microwave Circuit and Component Design for Wireless Systems</i> , 1st Edition, Wiley Interscience (2002). 3. Larson L E, <i>RF and Microwave Circuit Design for Wireless Applications</i> , 1st Edition, Artech House (1996). 4. Rohde U L and Newkirk D P, <i>RF/Microwave Circuit Design for Wireless Applications</i> , 2nd Edition, John Wiley & Sons (2013).	