1.	Title of the course	Advanced Topics of RF-CAD Lab-based Project
2.	Course number	EE559M
3.	Status of the course	Elective
4.	Structure of credits	0-1-3-3
5.	Offered to	PG
6.	New course/modification to	New
7.	To be offered by	Department of Electrical Engineering
8.	To take effect from	January 2023
9.	Prerequisite	CoT
10.	Whether approved by the Department	Yes
11.	**Course Objective(s):** To provide hands-on experience on advanced topics of RF-CAD design-based projects (RF front-end modules, actives, passives, millimeter wave, and terahertz circuits and systems) for modern communications and other Industrial-Scientific-Medical (ISM) applications.	
12.	**Course Content:** RF and millimeter/THz wave passive components; Active devices; RF/Microwave amplifiers and oscillators; Engineered transmission line components; Advanced radiation systems and arrays; THz systems and associated transmission lines; Metamaterials, metasurfaces, fractals, electromagnetic-band-gap structures; Machine learning inspired design in RF domain.	
13.	**Textbook(s):** 1. Balanis C A, *Antenna Theory: Analysis and Design*, 4th Edition, John Wiley & Sons (2015). 2. Pozar D M, *Microwave Engineering*, 4th Edition, John Wiley & Sons (2010).	
14.	**Reference(s):** 1. Ludwig R and Bretchko P, *RF Circuit Design*, 1st Edition, Pearson Education (2000). 2. Mishra D K, *Radio-frequency and Microwave Communication Circuits*, 1st Edition, John Wiley & Sons (2001).	