

Branch Name:	Signal Processing and Communication
Program Code:	ET214
Course Name:	RF System Design for Wireless Communication Practical
Course Code:	2ET2140207P
Pre-requisite Course:	Fundamentals of RF and Wireless Communication

Course Objectives:

1. To know the fundamentals of RF design
2. To know the design consideration of radio architecture.
3. To design receiver system for RF.
4. To know the analysis of transmitter system design for RF.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCE		SEE		CCE		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-			10	25	10	25	50

Subject Contents

Sr. No	Topic	Total Hours	Weight (%)
1	To plot frequency response of high frequency resistor	2	8
2	To plot frequency response of high frequency capacitor	2	8
3	To plot frequency response of high frequency inductor	2	8
4	To plot SWR circle for an impedance	2	8
5	To plot efficiency of different types of amplifiers	4	18
6	Design a 2.4 GHz LC Oscillator with the architecture.	4	18
7	Design wideband resistive shunt feedback LNA Circuit architecture.	2	8

8	To determine the freespace loss and the power received using Matlab program.	2	8
9	To write a Matlab program to calculate the link budget for satellite communication	2	8
10	To write a Matlab program to calculate the link budget for satellite communication and also to calculate the Carrier to noise ratio for uplink and downlink and also the overall carrier to noise ratio.	4	8

List of Reference Books:

1. "Radio Frequency and Microwave Communication Circuits, Analysis and Design", D.K.Misra, John wiley & Sons., inc, 2004.
2. "Microwave Engineering", D.M. Pozar, Adison Wesley, 3rd Edition, 1990.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the needs of fundamentals of RF design	1 Remembering 2 Understanding
CLO2	Design radio architecture and RF receiver.	2 Understanding 5. Evaluate 3 Applying
CLO3	Know the analysis of transmitter system design for RF.	4 Analyze

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H				L	M							H	M	L	
CLO2	H		M	M	L					L		H		M	L	
CLO3		M	H		L									H		L

H: High, M: Medium, L: Low