	National Institute of Technology Meghalaya An Institute of National Importance	CURRICULUM

Programme	**Bachelor of Technology in Electronics and Communication Engineering**	Year of Regulation	**2018-19**
Department	**Electronics and Communication Engineering**	Semester	**V**

Course Code	Course Name	Credit Structure				Marks Distribution		
		L	T	P	C	CONTINUOS EVALUATION	VIVA	Total
EE 353	**Electromagnetic Waves & Radiating Patterns Laboratory**	**0**	**1**	**2**	**2**	**70**	**30**	**100**

Course Objectives	
	To develop the student's ability to analyse the radiation related issues and introduction to the simulator.
	To develop the ability to design and study on the antenna characteristics.
	To develop the ability and concepts of the RF antenna designing parameters.

Course Outcomes		
	CO1	Implement a radio frequency antenna using simulation tools
	CO2	Will develop understanding on practical scenario RF antenna design issues.
	CO3	Work in teams to plan and execute the design of RF antenna
	CO4	

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO 4
1	CO1	**3**	**3**	**2**	**1**	**3**	**1**	**1**	**1**	**3**	**1**	**2**	**2**	**3**	**3**	**2**	**-**
2	CO2	**3**	**3**	**2**	**1**	**3**	**1**	**1**	**1**	**3**	**1**	**2**	**2**	**3**	**3**	**2**	**-**
3	CO3	**3**	**3**	**2**	**1**	**3**	**1**	**1**	**1**	**3**	**1**	**2**	**2**	**3**	**3**	**2**	**-**
4	CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SYLLABUS

No.	Content	Hours	COs
I	To Study Radiation Pattern of Dipole Antenna in Two Planes	**14**	**CO1, CO2, CO3**
II	To Study Effects of Parasitic Elements in Yagi-Uda Antenna		
III	To Study Current Distribution on Dipole Antenna		
IV	To Study Radiation Pattern of Microstrip Antennas		
V	To Design & Test Helical Antennas		
VI	To Design & Test Loop Antennas		
VII	To Study Gain of Different Antennas		
	Total Hours	**14**	

Essential Readings

1. Sadiku, "Elements of Electromagnetics", Oxford, 6th Edition, 2007
2. Hayt, William Hart, "Engineering Electromagnetic", Tata McGraw-Hill,6th Edition, 2017

Supplementary Readings

1. Reitz & Milford, "Foundations of Electromagnetic Theory", Addison-Wesley Pub., 4th Edition,2014
2. Jordan E. C. and Balmain K. G., "Electromagnetic Waves and Radiating Systems", Prentice Hall, 2nd Edition, 1964
3. K. D. Prasad, "Antenna & Wave Propagation", Satya Prakashan, 2nd edition,2009
4. Kraus John D., Marhefka Roland J. and Khan Ahmed S., "Antennas and Wave Propagation", Tata McGraw-Hill, 5th Edition,2017
5. Balanis Constantine A., "Antenna Theory, Analysis and Design", John Wiley & Sons, 4th Edition, 2016
6. Harish A. R. and Sachindananda M., "Antennas and Wave Propagation", Oxford University Press, 1st Edition, 2006