Birla Institute of Technology & Science, Pilani
Hyderabad Campus

SECOND SEMESTER 2023-24

Course Handout Part II

09/01/2024

In addition to Part-I (General Handout for all courses appended to the timetable), this portion gives further specific details regarding the course.

Course No. : ECE F312
Course Title : Electromagnetic Fields and Microwave Engineering Laboratory
Instructor-in-Charge : Harish V. Dixit
Instructors :

Scope and Objective of the Course: Microwave components and systems have made a great impact on our society with the rapid proliferation of various consumer products. The focus of the Microwave Laboratory will be the development and use for scientific studies of the microwave frequencies. Experiments based on the designing of Microstrip based filters, power dividers, TEE junctions, couplers and antennae and various microwave various will be carried out in this lab. This lab will also motivate the students to work towards the design and analysis of microwave circuits, filters, couplers and microstrip antennas for microwave wave applications using design software.

Textbooks:

1. Lab Manual on Electromagnetic Fields and Microwave Engineering Laboratory
2. Basic microwave techniques and laboratory manual by M.L. Sisodia
3. EM software manual

Course Plan:

The laboratory classes will be conducted in the Microwave Engineering laboratory. The practical experiments are intended to provide hands-on experience on the concepts learnt in the Electromagnetic Fields and Microwave Engineering course. Details of the experiments will be available in the “Laboratory Manual”. Laboratory marks mentioned includes marks for record and attendance in lab practical.

List of Experiments

Experiment No.	Name of the Experiment
1.	Design of microstrip-based filters
2.	Characterization of the microwave filters
3.	Design of microwave passive devices
4.	Characterization of the passive devices
5.	Design of the microstrip-based antenna
6.	Characterization of the antenna

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Laboratory Practical Regular class work	2 hours/ week	70%	Regular lab Performance	Open Book
Mini project/ assignment	Will be announced	30%	Will be announced	Open Book

Chamber Consultation Hour: To be announced in lab

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Notices: All notices of this course will be displayed in CMS

Make-up Policy: Only One Lab Make-up will be granted for genuine reason with prior-permission from Instructor-in-charge.

Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Harish V. Dixit
INSTRUCTOR-IN-CHARGE
ECE F312