Advanced Radio Frequency Engineering

Course Code: CT451

Students: B. Tech. VII Semester

Structure: 3-0-2-4

Faculty: Deepak K. Ghodgaonkar (deepak_ghodgaonkar@daiict.ac.in) (Extn. 623)

Pre-Requisite: Electromagnetic Theory (SC217)

Time Table: Tuesday, Wednesday and Friday (8:30 to 9:30 am)

Lecture Schedule:

1. Introduction to RF and Microwave Engineering (1 Lecture) (Peter Rizzi)
2. Introduction to TEM mode transmission lines (3 Lecture) (Peter Rizzi)
3. Rectangular and Circular Waveguides (4 Lectures) (Peter Rizzi)
4. Introduction to Antennas and Fundamental Parameters (5 Lectures) (C. A. Balanis & G. Kennedy)
5. Couplers, Waveguide Circuits, Resonators and Filters at Microwave Frequencies (5 lectures) (Peter Rizzi)
6. Microwave Vacuum Tube Devices (5 Lectures)
7. Microwave Solid State Devices (5 Lectures)
8. MMIC (Monolithic Microwave Integrated Circuits) and MIC Technology (3 Lectures)
9. Microwave Measurements (6 Lectures)
10. Microwave Radiation Hazards (1 Lecture)
11. Applications of Microwaves (6 Lectures)

References:

1. Peter A. Rizzi, Microwave Engineering: Passive Circuits, Prentice Hall
2. Constantine A. Balanis, Antenna Theory: Analysis and Design, John Wiley
6. K. C. Gupta and Amarjit Singh, Microwave Intergated Circuits, John Wiley
7. Om P. Gandhi, Microwave Engineering and Applications, Maxwell Macmillan

Evaluation:

First Quiz - 7%
First In-Sem. Exam. - 20%
Surprise Quiz - 4%
Second Quiz - 6%
Second In-Sem.Exam. - 20%
End-Sem. Exam. - 20%
Laboratory Work - 10%
Attendance - 10%
Assignments - 3%

Office Hours: Wednesday 5 to 6 pm