COURSE OUTLINE:
This course intends to provide a foundation for microwave engineering to the undergraduate students. Rigorous treatment of the fundamentals of microwave engineering will be provided. Design of different passive and some active microwave circuits/subsystems will be covered in detail. This course will also provide an overview of application of microwave in communication and other areas.

ABOUT INSTRUCTOR:
Prof. Ratnajit Bhattacharjee received his B.E. in Electronics and Telecommunication Engineering (First Class Hons) from REC-Silchar, Gauhati University, M.Tech. (E and ECE Department, Microwave Engineering specialization) from IIT Kharagpur and Ph.D. (Engineering) from Jadavpur University, Kolkata. Presently, he is a Professor in the Department of Electronics and Electrical Engineering, IIT Guwahati. Prior to joining IIT Guwahati in 2002, he was a faculty member in REC (NIT) Silchar. His research interest includes Wireless communication, Wireless networks, Microstrip antennas, Microwave Engineering and Electromagnetics.

COURSE PLAN:
Week 1: Introduction to Microwave Engineering and Transmission line theory
Week 2: Rectangular and Circular waveguides
Week 3: Microwave Networks and Scattering Matrix
Week 4: Impedance Matching
Week 5: Microwave Resonators
Week 6: Power divider, directional couplers and filters
Week 7: Microwave Semiconductor Devices
Week 8: Microwave Amplifiers and Oscillators
Week 9: Microwave Tubes
Week 10: Ferrite devices
Week 11: Introduction to Microwave Integrated Circuits (MIC)
Week 12: Microwave Communication Systems and other application areas