

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Wireless Communication Technology (EC)

Semester: I

Subject Name: **VLSI in Wireless Communication System (Major Elective-I)**

Subject Code: **714404**

Sr. No	Course Content
1	Designer's perspective of communication system : Overview of Modulation Scheme, Classical Channel, Wireless Channel description, Path loss, Multi path Fading,
2	Receiver Architecture : Receiver Front End, Filter Design, Rest of receiver Front end, Derivation of IIP3 of receiver front end.
3	Low Noise Amplifier : Introduction, Wideband LNA Design, Narrowband LNA: Impedance Matching and Core Amplifier
4	Active and Passive Mixer : Balancing, Description Gilbert Mixer, Analysis of Gilbert Mixer, Noise, complete Active Mixer, Switching Mixer, Distortion, conversion gain and Noise in Unbalanced Switching Mixer
5	Analog to Digital Converters : Demodulators, A to D Converters used in receivers, Low pass Sigma delta modulators and its implementation.
6	Frequency Synthesizer : PLL based Frequency Synthesizer, Phase Detector/Charge Pump, VCO, Ring oscillator
7	Design Technology for Wireless Systems : Design and simulation of Front and Backend systems.

Text Book:

1. Bosco Leuing, VLSI for Wireless Communication, PE

Reference Books

1. T Lee, The design of CMOS Radio frequency integrated circuits, Cambridge university press
2. P Gray and R Meyer, Analysis and design of analog integrated circuits, John Wiley & Sons