

- Overview of OFDM Communications
- System Architecture
- Cyclic Prefix (CP): Why and How
- IFFT/FFT, QAM mapping/de-mapping, Gray coding
- Channel coding and interleaving for Coded OFDM
- 802.11a OFDM system
- Synchronization, channel estimation and equalization in OFDM
- Preambles and pilots in OFDM
- Symbol synchronization
- Carrier frequency offset (CFO) estimation and compensation
- Channel impulse response (CIR) estimation and equalization
- Hands-on experiments using MATLAB
- BER simulation for Uncoded OFDM
- BER simulation for OFDM using convolutional encoding & Viterbi decoding
- BER simulation for OFDM with timing-offsets or CFOs

