KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

ELECTRICAL ENGINEERING DEPARTMENT

EE441 –RF and Microwave Transceivers Design and Analysis

First Semester 2011-2012 (121)

EE 441 – RF and Microwave Transceivers Design and Analysis (3-0-3)
Tx and Rx architectures, RF link and RF budget, Noise analysis, Linearity analysis, System level design, Microwave measurements for transmitters characterization, CAD tools with application to system level design and analysis, Linear amplifier design (power and LNA), Design case studies.

Pre-requisite: EE340

Textbook:
To be identified once the materials are finalized.

Other references:
Other references will be provided by the instructor.

Tentative Schedule: (Theory / Practice on ADS)

1. Wireless communication standards Overview (1/0)
2. Advanced Design System Software (0/2)
3. Transmitters and Receivers Architectures and Systems (2/1)
4. Metrics for Transmitter and Receiver Performance Evaluation (2/2)
5. Noise Analysis (2/1)
6. Linearity Analysis (3/1)
7. Smith Chart and Impedance Matching (4/2)
8. Linear Amplifiers Design (9/3)
9. Power Amplification Systems (3/1)
10. PA LineUp Design for Modulated Signals (4/2)

Grading:
Quizes and Home works (15%), Design Project (15%), Two majors (15%+15%), Final Exam (40%)