EE6130 ANTENNAS AND PROPGATION FOR WIRELESS SYSTEMS

Acad Unit: 3
Pre-requisite: Nil
Effective: Academic Year 2013-2014
Last update: June 2012

LEARNING OBJECTIVE

This course is intended to provide students with a good understanding of the general characteristics of different antennas, the principles and theory behind their operation, and modeling and measurement techniques for different antenna systems. In addition, the principles and characteristics of radio waves propagating in various environments and wireless channels are also dealt.

CONTENT

Review of EM Theory and Basic Antenna Parameters. Wire and Aperture Antennas. Planar Antenna and Antenna Arrays. Small Antennas and Antenna Measurements. Principles of Radio Wave Propagation. Ground Wave and Ionospehric Propagation. Mobile Communication Channel.

LEARNING OUTCOME

1. Gain understanding of different parameters used to characterize antennas. Know how to analyze wire and aperture radiating elements.
2. Be able to design various antennas and arrays for many wireless communication systems.
3. Have the knowledge of radio wave propagation mechanisms

STUDENT ASSESSMENT

Continuous Assessment	20%
Final Examination	80%

TEXTBOOKS

1. C. A. Balanis, Antenna Theory and Design, John Wiley & Sons Inc., 3rd Edition, 2005.

2. R. L. Freeman, Radio System Design for Telecommunications, John Wiley, 2nd Edition, 1997.

REFERENCES

1. J. D. Kraus and R. J. Marhefka, Antennas for All Applications, 3rd Edition, McGraw-Hill, 2003.

2. C. A. Levis, J. T. Hohnson, and F. L. Teixeira, "Radiowave Propagation: Physics and Applications, John Wiley & Sons, 2010.