RADIO WAVE PROPAGATION AND ANTENNAS

COURSE OVERVIEW

This 5-day, hands-on course assumes no prior knowledge and is intended to teach:

- The fundamental nature of radio waves and propagation
- Characteristics of line-of-sight terrestrial radio wave propagation in open and cluttered environments
- Link budget calculations and the effects of real-world propagation modifiers such as diffraction, multi-path interference, and attenuation
- Fundamental properties of antennas and the metrics used to assess antenna performance
- Transmission lines and measurements
- Network and spectrum analyzer operation
- Construction details and properties of many different antenna types. This includes both lecture and hands-on building
- How to design and build an antenna to fit a specific set of requirements
- How to build field expedient or rapid prototype antennas out of common everyday material

COURSE OBJECTIVES

To teach the underlying thought processes and innovations that have gone into many different antenna developments.

- Though many of the covered antenna types could be directly applicable to immediate requirements, the intent is to impart the basic understanding of how antennas are made to yield specific properties and operate effectively in specific environments.

Each of the many antenna types in existence capitalize on some nuance in electromagnetic physics to achieve a specific property.

- Understanding as many of these nuances as possible will enable the students to draw upon a large body of antenna innovation to solve a specific requirement with an optimal solution