

Course ID  
**MICROWAVE**  
Course Duration  
**2 days**

Course Title  
**Microwave and Fixed Line-of-Sight Link Design**

**Related Courses**

- Wireless Network Structure, Operation, and Technologies (WIRELESSNET, 3 days)
- RF Propagation Models, Fading Characteristics, and Link Budget Analysis (RFPROP, 3 days)
- Technologies: A Comparative Study (COMPARISON, 2-4 days)
- GSM: Network Architecture, Operation, and Design (GSM-I, 5 days)
- iDEN™: Network Architecture, Operation, and Design (IDEN, 4 days)
- cdmaOne/IS95 (IS95, 2 days)
- Traffic Engineering Models for Network Design (TRAFFIC, 3 days)

**Aimed At**

The standard presentation of this course assumes a bachelor of science in Electrical Engineering, Mathematics, Physics, or a related subject along with some background in communications engineering.

**Group Size**

5-25

**Prerequisites**

- At least one year experience in the field of communication engineering, fixed or wireless telephony, or related fields.

**Course In a Nutshell**

Microwave links -- fixed line-of-sight in particular -- present some unique problems in areas such as propagation and fading characteristics. Mobility not being an issue, the relationship of the wave-length to the lengths of man made or natural obstacles becomes the principal concern in such environments.

This course will help you understand the (often non-intuitive) effects various obstacles in the transmitter-receiver path have on the received signal. You will learn how even those structures that are not in the direct path but merely close to it can have nontrivial effect on the signal. Upon completion of this course, you will be able to evaluate fixed links, determine the correct positions for the transmitting and receiving antennas, and identify the mitigating mechanisms for those occasions when the antennas cannot be optimally located.

**Customize It!**

*Customize this course to your specific requirements at little-to-no additional cost. We offer distinct versions tailored for audiences such as:*

- Network design and optimization engineers
- Equipment or application designers
- Less technical audiences such as managers, executives, business planners, sales and marketing specialists, and operations and support personnel.

**Course Outline**

We will provide a detailed course outline following training needs assessment. Please call or e-mail to schedule a no-obligation conference call to help us understand your audience background and training objectives.

**How You Will  
Learn**

- You will learn in interactive lecture format from an instructor who's among the most knowledgeable and dynamic in the industry.
- Along with lecture, we use exercises, puzzles, case studies, and interesting group activities to enrich the instruction and drive home the essential points.
- If you already know something about the technology, we will build on that. We'll compare and contrast what's familiar with what's new, making new ideas easier to learn as well as more relevant.
- If your background is less technical, we will use meaningful and ingenious examples and analogies to simplify the complex subject matter.
- The Participant Handbook will provide you with a structure to which you can add the information and insight provided in real-time, turning it into a valuable reference resource you can take back to your job.

*Revised*

*Nov 7, 2005*