

T3/DS3 Fundamentals and Applications

Course Length:	2 Days
Course Code:	1310
Prerequisites	None, however a basic understanding of telecommunications and wireless transmission principles will be useful for students taking this course.
Course Overview:	This course focuses on proper troubleshooting and installation practices as well as an overview of DS1/DS3 fundamentals. The course is designed to teach proper testing techniques to ensure minimal down time. The majority of the course will be focused around hands-on testing with DS1/DS3 testers and analyzers.
Required Equipment:	It is highly recommended that the student bring DS1/DS3 test equipment to class. This will enable the student to learn on the actual equipment they will be using on a daily basis.

Course Outline

DS1/DS3 Overview

- Wireless applications
- Basic speeds/abilities

DS1 Review

- Formatting the signal
- Equipment
- Basic testing concepts

DS3 Technology

- Multiplexing the signal
- Framing the signal
- Coding the signal
- Errors and alarms



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T3/DS3 Fundamentals and Applications

DS3 Network Equipment

- Multiplexers, DSX-3, DCS
- Cables and Connectors
- Demarcation

DS3 Test Equipment

- Types of test equipment
- Equipment operation/setup
- Test set connections
- Testing techniques
- Test parameters

Installation testing of DS3s

- BERT
- Recommended Stress patterns
- Test Access points
- DS3 loop back Testing
- End/End testing
- Verifying service parameters
- Analysis of Test Results

Maintenance testing of DS3s

- Test Access points
- Monitoring DS1s/channels
- Monitoring signal quality
- Monitoring Alarms and Errors
- Equipment emulation

Channelized Testing

- Monitoring DS1s from DS3s
- Monitoring DS0s from DS3s
- Monitoring Fractional T1s (FT1s) from DS3s
- Drop and Insert testing