

Hughes Technical Training



Course Catalog

2019

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PRODUCT TRAINING FOR EXTERNAL AND INTERNAL CUSTOMERS

COURSE OFFERINGS AND FACILITY OVERVIEW

The Hughes Technical Training Group's objective is to provide customers and employees with world-class training that supports our products and services. We have a state-of-the-art training facility located in our Shady Grove (SGZ) building, with fully functioning laboratory and professionally qualified staff. A training registrar is available to take customer course reservations through the program manager.

Technical Training consists of a staff of professional trainers that instruct customers on Hughes' major products, utilizing over several independent courses. Our SGZ facility includes a modern training rooms equipped with glassed-in laboratories dedicated to our program. At our training facility, customers and employees learn the technical and operational aspects of Hughes' products and systems. Students obtain direct exposure to the hardware and receive hands-on training that is not limited to the restrictions of a live network operations center. Multiple courses are offered on major company product lines. Special course sequences can be designed with adequate advance notice. Global customer site delivery of training remains an option available to our customers. Customer-site training will be subject to reduced curriculum and equipment limitations.

Customers are strongly encouraged to attend class at our local facility in Gaithersburg, Maryland to maximize student participation in class exercises performed on dedicated training equipment. Customer-site training using the customer's equipment reduces the effectiveness of the exercises due to access limitations, preventing some exercises from being performed at all. Course duration will be adjusted to accommodate these limitations.

The following courses are regularly offered at the training facility in Gaithersburg, Maryland, USA

JUPITER SYSTEM

The Jupiter System is a latest Hughes VSAT network providing high speed broadband TCP/IP connections for consumer and enterprise customers. The system is comprised of one or more Gateways and multiple HT2xxx terminals. The courses cover a system design overview, terminal installation and management, network operations and maintenance and sizing.

PRODUCT LINE COURSES**Local Training Courses:**

Course Number	Course Title	Duration Days**	Cost Per Student
TC-JS0300	Jupiter System Introduction	2	\$1,800
TC-JS0310	Jupiter System Terminal Installation and Operations	1	\$900
TC-JS0320	Jupiter System Network Operations and Maintenance	7	\$6,300
TC-JS0330	Jupiter System Sizing	2	\$1,800

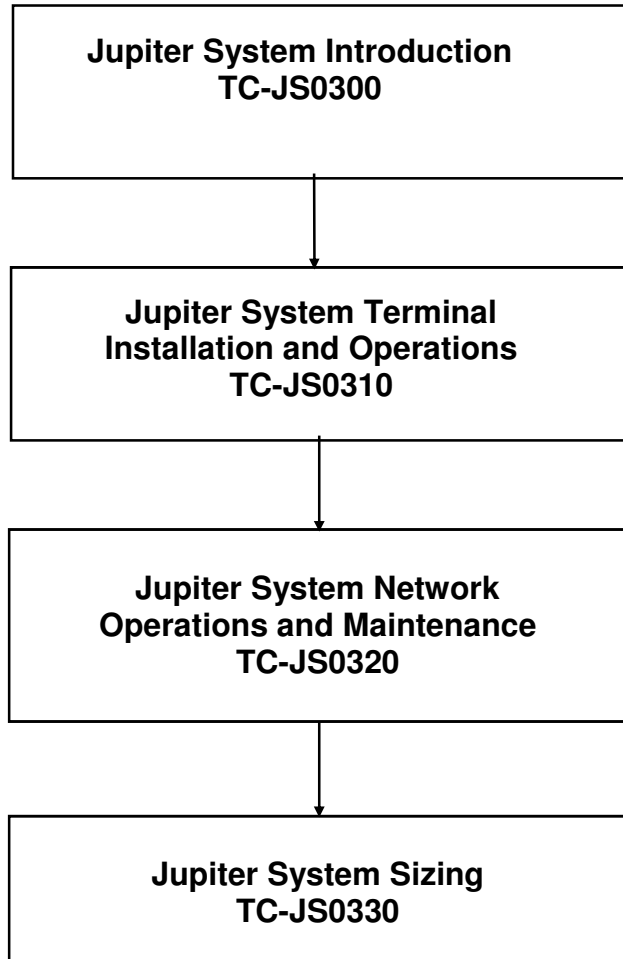
Onsite Training Courses:

Course Number	Course Title	Duration Days**	Cost Per Class
TC-JS0300	Jupiter System Introduction	2	\$8,400
TC-JS0310	Jupiter System Terminal Installation and Operations	1	\$4,200
TC-JS0320	Jupiter System Network Operations and Maintenance	7	\$29,400
TC-JS0330	Jupiter System Sizing	2	\$8,400

**Maximum class size is 12 students and the minimum is 4 students. Course duration is adjusted for customer-site training based on customer's network design and access to the onsite equipment and resources. Customers are strongly encouraged to attend local training in Gaithersburg Maryland in order to prevent limited and interrupted training environments. Onsite courses are subject to an additional 25% and customized courses are subject to an additional 35%.

JUPITER SYSTEM COURSES

Recommended Sequence for Jupiter System training courses:



Jupiter System Introduction Course TC-JS0300

Course Purpose:

This course is designed to provide a detailed introduction to the Jupiter System, which includes the high level system architecture and major key features. The course provides fundamental knowledge for engineers, managers, technicians, operators, and other individuals who require a working knowledge of the product. Connectivity, traffic flow, and component functionality are discussed. This course is a prerequisite to Jupiter System NOC Operations and Maintenance training courses

Objectives:

This course introduces the major components of the Jupiter System. It is intended to provide the student with a functional knowledge of the following subjects and equipment:

1. Overview of satellite communications and TCP/IP
2. Jupiter System Architecture
3. Jupiter System Key Features
4. Jupiter Gateway Description

Topical Outline:

- Satellite Communications and TCP/IP Overview
- Jupiter System Architecture
 - Outroutes /Inroutes
 - NOC Gateway and terminals
- Jupiter System Features
 - TCP/IP Features
 - Advanced Bandwidth Management Features
 - Satellite Link Features
- Jupiter Gateway description

Class Size:

- **Minimum Number of Students:** 4
- **Maximum Number of Students:** 12

Course Location: Hughes Technical Training, Gaithersburg, Maryland

- **Duration:** 2 Days

Course Location: At mutually agreeable customer location

- **Duration:** To be determined based on customer network design and facilities

Course Number: TC-JS0300

Prerequisites: None

Jupiter System Terminal Installation and Operations Course TC-JS0310**Course Purpose:**

This course covers the installation, commissioning and maintenance of the Jupiter terminals (HT2xxx). Maintenance of the Hughes terminals is limited to the FRU level.

Objectives:

Upon completion of the program the student should be able to:

1. Install Hughes indoor unit
2. Commission a terminal
3. Familiar with the terminal Web UI

Topical Outline:

- Terminal Equipment
- Site Survey
- Remote Commissioning
- VSAT Antenna Pointing

Class Size:

- **Minimum Number of Students:** 4
- **Maximum Number of Students:** 12

Course Location: Hughes Technical Training, Gaithersburg, Maryland

- **Duration:** 1 Day

Course Location: At mutually agreeable customer location

- **Duration:** To be determined based on customer network design and facilities

Course Number: TC-JS0310

Prerequisites: None

Jupiter System Network Operations and Maintenance Course TC-JS0320

Course Purpose:

Introduce basic day-to-day operations and maintenance of the NOC Gateway.

Objectives:

This course introduces the day-to-day operations and maintenance of Jupiter Gateway. It is intended to give the Gateway Operator prerequisite knowledge to be able to perform the following tasks:

1. Introduction to Jupiter Gateway components
2. Monitor Jupiter network via Jovian NMS
3. Manage Jupiter terminal services
4. Configure, monitor and control Jupiter terminals via Jovian
5. Manage Gateway components
6. Perform routine system maintenance
7. Demonstrate basic troubleshooting skills via Jovian and Device Web UI

Topical Outline:

- Introduction to Gateway Components
- Jupiter Network Monitoring
- Terminal Management
- Gateway Management
- System Maintenance

Class Size:

- **Minimum Number of Students:** 4
- **Maximum Number of Students:** 12

Course Location: Hughes Technical Training, Gaithersburg, Maryland

- **Duration:** 7 Days

Course Location: At mutually agreeable customer location

- **Duration:** To be determined based on customer network design and facilities

Course Number: TC-JS0320

Prerequisites: Jupiter System Introduction course TC-JS0300

Jupiter System Sizing TC-JS0330

Course Purpose:

This advanced course is designed to introduce the concepts and procedures used in Jupiter system sizing. During the course, space link and virtual network sizing are discussed.

Objectives:

Upon successful completion of this program, the student should be able to:

1. Estimate Jupiter space link capacity
2. Prepare Jupiter frequency plan
3. Understand VN subscription and terminal QoS parameters
4. Monitor VN capacity configuration
5. Size VN capacity based on the terminal QoS requirements

Topical Outline:

- Jupiter space link capacity and spectrum planning
- Virtual network subscription and monitoring
- Virtual network capacity sizing based on terminal QoS
- New service considerations

Class Size:

- **Minimum Number of Students:** 4
- **Maximum Number of Students:** 12

Course Location: Hughes Technical Training, Gaithersburg, Maryland

- **Duration:** 2 Days

Course Location: At mutually agreeable customer location

- **Duration:** To be determined based on customer network design and facilities

Course Number: TC-JS0330

Prerequisites: Jupiter System Introduction TC-JS0300