

MTS Hardware Concepts & Series 793 Software

5 day course

COURSE OUTLINE

- I. Introduction
 - A. Test system definitions and overview
 - B. Lab demonstration
- II. Hardware
 - A. Hydraulic power supplies
 - B. Hydraulic service manifolds
 - C. Accumulators
 - D. Servovalves
 - 1. 2-stage servovalve
 - 2. 3-stage servovalve
 - E. Actuators
 - F. Mechanical components
- III. Project Manager
 - A. Project basics
 - B. Default projects
- IV. Station Builder
 - A. Hardware/closed-loop fundamentals
 - B. Resource identification
 - C. Configuration
 - D. Channel/control mode/hydraulic design/
Channel Limited Channel (CLC)
 - E. Inputs - internal/external/calculated
 - F. Outputs
 - G. Digital I/O
- V. Station Manager
 - A. Setup/Initial arrangement
 - B. Windows/menus
 - C. Display options
 - D. Command options
 - E. Detectors and actions
 - F. Input offset/zero
 - G. Calibration file management
(not calibration procedures)
 - H. Scopes and meters
 - I. Digital inputs/outputs usage
 - J. Parameter set management
 - K. Tuning principles
- VI. Basic TestWare (BTW)
 - A. Data acquisition setup
 - B. Data file buffers training
 - C. Peak valley change detector training
- VII. MTS MultiPurpose TestWare fundamentals
 - A. Window navigation and definitions
 - B. Executing procedures
- VIII. MTS TestSuite fundamentals
 - A. Window navigation and definitions
 - B. Executing test runs

The MTS Hardware Concepts and Series 793 Software* class will introduce and familiarize the students with the correct set-up and operation of MTS material, simulation, and component test systems. The course content is designed for individuals new to servohydraulic testing. The instructor will discuss major system components and present the principles of closed-loop servo control. The course also introduces the students to basic operating principles of a digitally controlled servohydraulic test system. Students are provided with a hands-on approach to learn the operation of the controller and its related system electronic, hydraulic, and mechanical components. The five-day course will cover opening and running a test in both MultiPurpose TestWare (MPT) and MTS TestSuite (mpe) Software. The course does not cover designing tests in these applications. Sessions consist of a combination of classroom and laboratory exercises using the Series 793 software.

Who should attend

This five-day course is geared toward users who are new to servohydraulics or have limited experience using them. They need to learn the basics of the hardware and be able to operate the digital controller software. The pace of the class is designed to ensure all students have the opportunity and time to engage all topics and concepts presented.

Learning outcome

The students will have a functional understanding of the hydraulic power unit (HPU), hydraulic service manifold (HSM), servovalve, fluid care, closed loop control, actuators and load frames, limit functions, tuning. They will have an understanding of the relationship of software adjustments to the hardware.

The students will be able to launch the application, open the proper configuration/parameter set, properly control the hydraulics, manually command the control channel, install specimens safely in their fixturing, manually tune control modes, set limits, offset inputs. The students will be able to open and run a test in MultiPurpose TestWare (MPT) and MTS TestSuite Multipurpose (mpe) software.

* Series 793 Software operates the FlexTest and TestStar controllers.