Siemens TIA Portal Basics and Troubleshooting is a course deigned to prepare a technician or engineer to understand and troubleshoot machines using Siemens S7 family of PLC's. This is a 100% hands on class that is designed to last 40hrs.

Outline:
1. Basic Discrete Input and Output Wiring
2. Understanding the Siemens PLC scan cycle.
3. Search and Cross Reference
      3.1. Effective methods to search for tags
      3.2. Understanding call structures and assignment list
      3.3. Locating duplicate destructive references
4. Working with and understanding Organizational Blocks, Function Blocks and Functions, call priority and scan cycle sequence.
      4.1. Understanding scan priority within a program
      4.2. Troubleshooting scan time/ priority related issues
5. Associating field wiring with internal PLC addressing and creating tags
6. Overview and practice exercises using PLC (IEC standard) timers
      6.1. TON Timer On Delay
      6.2. TOF Timer Off Delay
      6.3. TP Pulse Timer
      6.4. RTO Retentive Timer On
7. Practice exercises in Ladder Logic, Function Block, and Structured Text Languages using all three timer instructions.
8. PLC counter instructions
      8.1. CTU Count Up
      8.2. CTD Count Down
      8.3. CTUD Count Up and Down
9. Understanding Various Data Types
      9.1. Int, Dint, Bool String, Byte, Word, DWord, Real, LReal, Time, UDint, UInt,
10. Using and understanding compare instructions
11. Overview of Basic Number Systems
      11.1. Binary, Octal, Hexadecimal, Decimal
12. Understanding and practicing with basic Structured Text and Function Block Programming
      12.1. "If Then", "For Do", "While Do", "Case of"
      12.2. Direct Assignments
      12.3. Compare Instructions
13. Performing Math and storing data in Data Blocks
14. Creating and Using arrays in a project
      14.1. Writing data to arrays
      14.2. Retrieving data stored in arrays