



राष्ट्रीय प्रौद्योगिकी संस्थान वारंगल
National Institute of Technology Warangal
An Institute of National Importance

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PROCESS INSTRUMENTATION LAB

NITW SIEMENS CENTRE OF EXCELLENCE, NIT WARANGAL

Course Name: SIMATIC PCS7 with WinCC SCADA (Intermediate Course)

Course Duration: 40 Hrs.

Course overview:

- **Intended Audience:**
 - This course is suitable for Automation, Instrumentation, Electrical, Electronics, and Mechatronics Engineers.
- **Prerequisites**
 - Education: B.E/B.Tech. 2nd year completed in any one of the following streams.
 - Software: Basic understanding on Process instruments and its operation
- **Course objectives**
 - After successfully completing this course you should be able to:
 - Understand the Process Automation System overview, use of the PCS7 engineering software.
 - Understand different operations for the process instruments
 - Write CFC program for various applications
 - Establish communication between Automation Station(AS) and Operator Station (OS)
- **Course contents**
 - 1) PCS7 software and S7-400 PCS7 hardware Kit overview
 - 2) New project and Hardware Configuration (AS)
 - 3) Master Data Library and Advance process Library, and GSD file
 - 4) Digital and Analog Input driver (PCS7DiIn, FbDiIn, FbAnIn, PCS7AnIn)
 - 5) Digital and Analog monitoring block (MonDiL, MonAnL)
 - 6) Digital and Analog Logical blocks (AND, OR, NOT, Comp_I, MUX_I, Timer, counter, etc.)
 - 7) Advance process Library (APL) Templates
 - ✚ DigitalMonitoring and DigitalMonitoring_FB template
 - ✚ AnalogMonitoring and DigitalMonitoring_FB template
 - ✚ Motorlean and ValveLean template
 - ✚ PID_Lean template
 - 8) Use of FB, FC, DB and Variable table
 - 9) SIMATIC PC Station Configuration, Station Configuration editor, and NetPro
 - 10) Different Views, hierarchy folder and process Picture
 - 11) OS and WinCC Setup
 - 12) WinCC Graphic designer, Faceplates, Picture Tree and Tag management
 - 13) WinCC Runtime and SCADA operations
 - 14) Parameterization of process instruments through manual configuration or PDM tool
 - 15) Integration of process instruments with Automation Station
 - 16) Reading the transmitters and controlling the valve
 - 17) Reading the transmitters in SCADA