



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 (Advance 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. 2<sup>nd</sup> year completed in any one of the following streams.
  - Software: basic knowledge of PLC hardware, PCS7 and APL library
- **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) Introduction to standard architecture of PCS7 like ES, OS, AS
  - 2) Introduction to AS Hardware like PS, CPU and CPs.
  - 3) PCS7 Project from Scratch:
    - a. Working with SIMATIC Manager in PCS7 fashioned way
    - b. Multi-project concept and Hardware configuration
    - c. Concept of different Views like component view, Plant view
    - d. Working with CFC chart and templates from APL
    - e. Auto and Manual Sequence
  - 4) Working With OS:
    - a. AS-OS communication
    - b. Basic Operation and Monitoring
    - c. User Administration in PCS7
    - d. Working with Alarms, Trends

### Additional topics:

- PLC to PLC communication through S7-Connection
- Working with OPC Scout V10
  - a. PC Station Configuration
  - b. NetPro configuration and S7-connection
  - c. OPC Scout configuration
  - d. Data exchange among OPC, PLC and WinCC