EE 516: SCADA SYSTEMS & APPLICATIONS (3-0-0: 3)

SCADA

Data acquisition system, evaluation of SCADA, communication technologies, monitoring and supervisory functions.PLC: Block diagram, programming languages, Ladder diagram, Functional block diagram, Applications, Interfacing of PLC with SCADA.

SCADA System Components

Schemes, Remote Terminal Unit, Intelligent Electronic Devices, Communication Network, SCADA server.

SCADA Architecture

Various SCADA Architectures, advantages and disadvantages of each system, single unified standard architecture IEC 61850 SCADA / HMI Systems.

SCADA Communication

Various industrial communication technologies- wired and wireless methods and fiber optics, open standard communication protocols.

Operation and Control of Interconnected Power System

Automatic substation control, SCADA configuration, Energy management system, system operating states, system security, state estimation.

SCADA Applications

Utility applications, transmission and distribution sector operation, monitoring analysis and improvement. Industries oil gas and water.

Text Books & References

1. Stuart A Boyer, “SCADA: Supervisory Control and Data Acquisition”, ISA.
2. Gordan Clark, Deon Reynders, “Practical Modem SCADA Protocols”, Elsevier.
1. Sunil S Rao, “Switchgear and Protections”, Khanna publication.