REAL TIME CONTROL OF POWER SYSTEM

Course Code:13EE2103 **L P C**
4 0 3

Pre requisites: Power system operation and control.

Course Educational Objectives:

1. To familiarize with SCADA.
2. Understand the operation of power system.
3. To apply real time software for power system control.

Course Outcomes: At the end of the course**,** the student will be able to

1. Learn various activities of operator.
2. Understand about Supervisory control and data acquisition.
3. Real time software and state estimation.
4. Understand Security management.

UNIT-I

Power system control-operation**,** operator activities, control center, elements of computer control system Supervisory and control functions – data acquisition, monitoring and event processing, control functions

UNIT-II

Time tagged data, disturbance data collection and analysis, reports and calculations. Man-machine communication – operators console, VDU display, operator dialogs, mimic diagrams, printing facilities

UNIT-III

Real time software – Classification of programs, Structure of real time programs, construction techniques and tools, Programming language requirements for process control

UNIT-IV

Computer control of power systems – Evolution, time scale of system control, online control, Software for state estimation, Generation and

load control, security analysis, Software coordination

UNIT-V

Application functions- real time network modeling, security management: system security, security analysis functions, security modeling; production control: load prediction, local control, automatic generation control, economic dispatch, training simulators.

TEXT BOOKS:

1. Torsten Cegrell, "*Power system Control-Technology*",Prentice Hall., 1986.

2. S. Bennett and D.A. Linkens,"*Real Time Computer Control*", IEE Series., London Pcregrinus, 1984.