



**E4 234 Aug 3:0**

## **Advanced Power Systems Analysis**

### **Instructor**

Sarasij Das

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### **Teaching Assistant**

Email:

**Department: Electrical Engineering**

Course Time: M,W,F 10-11

Lecture venue: EE B308

Detailed Course Page: <http://www.ee.iisc.ac.in/academics-courseprograms-details.php>

## **Announcements**

### **Brief description of the course**

This course is directed towards students working in the power systems area. Both research and course students can take this course. This course discusses the advanced topics related to power system analysis.

### **Prerequisites**

Undergraduate course on power systems

### **Syllabus**

Introduction to Power System Analysis; Admittance Model of Power System Elements; Kron's Reduction; Power Flow Analysis: Gauss-Seidel, Newton Raphson, Fast Decoupled; Programming Consideration for Large Systems; Balanced and Unbalanced Radial Power Flow, AC-DC Power Flow, Harmonic Power Flow, Continuation Power Flow; Steady-State Voltage Stability; Power Flow Tracing; Loss Allocation Methods; Network Congestions; Available Transfer Capability; Contingency Analysis; Z-Bus Formulations; Fault Analysis using Z-Bus; Structure of Indian Power Systems; Indian Electricity Grid Code.

### **Course outcomes**

This course discusses the advanced topics related to power system analysis. Knowledge about these advanced

topics will help students in research and professional career.

## **Grading policy**

60% for Final, 25% for Mid-term, 15% for Assignments

## **Assignments**

## **Resources**