

## EE 330 – Power Systems

**Instructor: Dr. S. Chakrabarti, ACES 105, Tel: 6598 Email: saikatc@iitk.ac.in**

### **Instruction Timings:**

**Lec:** M, W, F 10:00-11:00 (L2)

**Tut:** Tuesday, 10:00-11:00 (T104-107)

### **Syllabus:**

- Introduction, structure of power systems, major components
- Circuit fundamentals, three-phase circuits, power calculations.
- Generators, transformers.
- Transmission line parameters.
- Transmission line modeling for steady state operation.
- Network modeling, power flow solution methods.
- Symmetrical faults.
- Symmetrical components.
- Unsymmetrical faults.
- Power system protection.
- Economic operation of power system.
- Power system stability and control.

### **Reference Books:**

1. J. D. Glover, M. S. Sarma, and T. J. Overbye, *Power system analysis & design*, Cengage Learning India, 2012.
2. J. J. Grainger, W. D. Stevenson, *Power system analysis*, McGraw-Hill, 1994.
3. H. Saadat, *Power system analysis*, Tata McGraw-Hill, 1999.
4. O. L. Elgerd, *Electric energy systems theory*, Tata McGraw-Hill.
5. C. L. Wadhwa, *Electrical power systems*, New Age International, 2010.

### **Distribution of Marks:**

Midsem	→	30 %
Quiz	→	20 %
End Sem.	→	50 %
<b>Total</b>	→	<b>100 %</b>

## Tutorial Sessions

Sections	Tutorial (Tuesday)	
	Instructors	Tut. Room
E1	Prof. A. Joshi (ajoshi)	T104
E2	Prof. N. Gupta (ngupta)	T105
E3	S. K. Mallik (skmallik)	T106
E4	V. Vignesh (vignesh)	T107

### **Instructions:**

1. Most of the instructions, announcements, and resource material for the course can be found in the following link:  
<http://home.iitk.ac.in/~saikatc/EE330/EE330.htm>
2. Make-up for mid semester exams may be taken on production of medical certificate. and no make-ups are allowed for the quizzes.
3. Tutorial will start from the week beginning from August 6, 2012. Quizzes will be taken in most of the tutorial classes.