



BASIC ELECTRIC CIRCUITS

PROF. ANKUSH SHARMA

Department of Electrical Engineering
IIT Kanpur

TYPE OF COURSE : New | Core | UG**COURSE DURATION** : 12 weeks (29 Jul'19 - 18 Oct'19)**EXAM DATE** : 17 Nov 2019

INTENDED AUDIENCE : Students belonging to Electrical Engineering, Electronics Engineering streams; and for those students for whom Basic Electrical Circuits course is compulsory core course

INDUSTRIES APPLICABLE TO : All companies working in Electrical Engineering area

COURSE OUTLINE :

This course offers comprehensive knowledge about basic electrical circuits. This is considered to be the foundation course for all electrical and electronics engineers.

ABOUT INSTRUCTOR :

Prof. Ankush Sharma has around 18 years of teaching, consultancy, and R&D experience. He has worked in TCS, Wipro, and IIT Bhubaneswar at various capacities. He is now an Assistant Professor in Department of Electrical Engineering at IIT Kanpur. His research Interests are Power Systems, Smart Grid Technology, State Estimation, IT Application into Power Systems, Smart City, Multi-Agent Systems, Wide Area Monitoring & Control of Power System, Energy Market, Demand Response Management and Internet of Things.

COURSE PLAN :

Week 1: Basic circuit elements and waveforms

Week 2: Mesh and node analysis

Week 3: Network Theorems -1

Week 4: Network Theorems -2

Week 5: First Order And Second Order Networks

Week 6: The Laplace Transform And Its Application

Week 7: Circuit Analysis Using Laplace Transform

Week 8: Twoport Network

Week 9: Sinusoidal Steady State Analysis -1

Week 10: Sinusoidal Steady State Analysis -2

Week 11: Analogous System

Week 12: State Variable Analysis