

VASAVI COLLEGE OF ENGINEERING (Autonomous)

IBRAHIMBAGH, HYDERABAD – 500 031

Department of Electrical & Electronics Engineering

**Basics of Power Systems
(Open Elective – V)
SYLLABUS FOR B.E. VI-SEMESTER**

L:T:P(Hrs./week):3:0:0	SEE Marks: 60	Course Code: OE610EE
Credits :3	CIE Marks: 40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES <i>On completion of the course, students will be able to</i>
1. To comprehend the various ways of power generation.	1. Identify the various and major ways of generation of power in India.
2. To determine the per unit cost of a power generating station.	2. Estimate the energy generated by hydel generating station.
	3. Calculate the capacitance value for p.f. improvement.
	4. Assess the tariffs of domestic and commercial loads

UNIT – I: Thermal Power Station:

Line diagram of Thermal Power Station (TPS) showing paths of coal, steam, water, air, ash and flue gasses. Brief description of TPS components-Economizers, Boilers, Super heaters, Turbines, Condensers, Chimney and cooling towers, choice of site for steam power station.

UNIT – II :Hydro Power Stations:

Power Generation Principles, Choice of site, layout and various parts of generating stations, Estimation of power in Hydel, flow duration curve, hydrograph, mass curve etc., Types of Hydel stations.

UNIT – III: Nuclear Power Stations:

Nuclear Fission and Chain reaction, Principle of operation of Nuclear reactor, Reactor Components- Moderators, Control rods, Reflectors and Coolants

UNIT – IV: Economics of Power Generation:

Load Curve, Load duration curve, load demand and diversity factors, base load and peak load operation, types of costs and depreciation fund calculations, Tariffs-Desirable characteristics of a tariff, types of tariff

UNIT – V: Power Factor:

Disadvantages of low p.f, Causes of low P.F, Power factor improvement, Methods of power factor improvement, Numerical problems.


Learning Resources:

1. C.L. Wadhwa, Electrical Power Systems, Wiley Eastern Ltd. 5th Edition, 2005
2. C.L. Wadhwa, Generation, Distribution and Utilisation of Electrical Energy, Wiley Eastern Ltd., 5th Edition, 2005
3. S.N.Singh- Electrical Power Generation, Transmission and Distribution-Prentice Hall pvt.ltd. New-2003.

The break-up of CIE: Internal Tests+ Assignments + Quizzes

1	No. of Internal Tests:	<input type="text" value="02"/>	Max.Marks for each Internal Tests:	<input type="text" value="30"/>
2	No. of Assignments:	<input type="text" value="03"/>	Max. Marks for each Assignment:	<input type="text" value="05"/>
3	No. of Quizzes:	<input type="text" value="03"/>	Max. Marks for each Quiz Test:	<input type="text" value="05"/>

Duration of Internal Test: 90 Minutes


(G. MAHESH)