

PTSC-7.1

**“PVCNSSK” GOVT. POLYTECHNIC BILASPUR at KALOL**  
**PLANNED THEORY SYLLABUS COVERAGE**

GPB		Department: Electrical Engg.		Subject: Energy Management		
SYLLABUS COVERAGE		Sem. & Branch :6 <sup>th</sup> & EE		Duration : 3years		
		Total Periods: Theory:56				
Sr No	Period No	Topic	Details	Instruction Reference	Additional Study Recommende	Remarks
1.	10 (1-10)	Review of Various Energy Sources	Brief overview of present energy scenario in India and worldwide, brief overview of share (in %age) of various energy sources in present energy scenario in India & worldwide, Basic concept and importance of Energy Management.			
2.	18(11-28)	Energy Conservation	<p>Energy Conservation and its Need</p> <p>Energy Conservation opportunities &amp; energy efficient technologies in domestic and industrial sectors:</p> <ul style="list-style-type: none"> <li>- Energy Efficient lighting: Methods/Technologies of energy efficient lighting systems.</li> <li>- Heating: Energy efficient Methods/Technologies for energy savings in Furnaces, Ovens, Boilers, Heat Exchangers, Cooling Towers, and Pumps.</li> <li>- Cooling Systems : Methods/Technologies for Energy Savings in Ventilating systems and Air Conditioners (HVAC Systems)</li> <li>- Energy Efficient Motors, Soft Starters, and Variable Frequency Drives.</li> <li>- Power Factor improvement devices and their significance in energy conservation.</li> <li>- Amorphous Core Transformers</li> </ul>			
3.	08( 29-36)	Energy Conservation in Transmission and Distribution Systems	Reactive power compensation, Demand Side Management, Losses in transmission and distribution system and its minimization			

Sr No	Period No	Topic	Details	Instruction Reference	Additional Study Recommende	Remarks
4	14(37-50)	<b>Energy Audit</b>	Need of Energy Audit, Types of Energy Audit: Preliminary Audit, General or Mini audit, and Comprehensive Audit, Energy Audit methodologies/Procedure, Energy Flow Diagram and its importance. Measurements in energy audit, List of measuring instruments and equipment used in energy audit, Questionnaires for the energy audit, Energy audit checklist, Calculation of payback period, Case studies (any <i>Two</i> ) of Energy Audit of any Commercial building and Small Industrial installation.			
5	6(51-56)	<b>Energy and Environment</b>	Environment and social concerns related to energy utilization, Environment impact assessment and its need, Environmental impact assessment in India.			

<b>APPROVED</b>	<b>SIGN HOD/OIC</b>
DATE <u>27/1/2024</u>	