

<b>Course Code</b>	<b>PEC1EE604</b>			<b>Semester</b>	<b>SIXTH</b>
<b>Category</b>	<b>professional Elective Course</b>				
<b>Course Title</b>	<b>Advanced Power Electronics</b>				
<b>Scheme &amp; Credits</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>	<b>Max Marks: 100</b>
	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	
<b>Prerequisites</b>	<b>Power Electronics</b>				

**Course Objectives:**

1. Analyse the operation of multilevel inverters.
2. Analyse the operation of DC-DC Converters.
3. Analyse the operation of UPS.

<b>Unit</b>	<b>Topic</b>	<b>No. of Hours</b>
I	DC-DC switched mode converters: introduction, control of dc-dc converters, Continuous and discontinuous conditions of buck, boost and buck-boost converters, Cuk dc-dc converter, full bridge dc-dc converter	8
II	Switched dc power supplies: Flyback converter, forward and push- pull converter	8
III	Uninterruptible Power Supply (UPS): Off Line UPS, On- Line UPS, Rating of Battery Bank, Calculation of Back-up-time.	8
IV	Cascaded H-Bridge Multilevel Inverters: Introduction, Bipolar and unipolar for H- Bridge Inverter, Multilevel Inverter Topologies, Carrier-Based PWM Schemes, Staircase Modulation, Applications	9
v	Diode-Clamped and Flying-Capacitor Multilevel Inverter: Introduction, Three-Level Inverter, Neutral- Point Voltage Control, Carrier-Based PWM Scheme, other modulation schemes, Applications	9
<b>Total</b>		<b>42</b>

**Textbooks:**

<b>S. No</b>	<b>Name of Book</b>	<b>Author</b>	<b>Publisher</b>
1	High-Power Converters and AC Drives	Bin Wu	Wiley
2	Power Electronics - converters, Applications, and Design	Ned Mohan, T. M. Undeland, W.P. Robbins	Wiley