

**SARDAR PATEL UNIVERSITY**  
**Programme: B.Sc (Electronics & Communication)**  
**Semester:VI**  
**Syllabus with effect from: November/December-2013**

<b>Paper Code: US06CELC01</b>	<b>Total Credit: 3</b>
<b>Title Of Paper: Power Electronics</b>	

<b>Unit</b>	<b>Description in detail</b>	<b>Weighting (%)</b>
I	<b>Thyristors</b> Introduction of Thyristors, Power Semiconductor devices, Types of Electronic circuits, Thyristor Type : SCR (Silicon Controlled Rectifier), Triggering device for SCR, Series and Parallel Operation of SCR, DIAC, TRIAC construction, Characteristics, Phase Control of TRIAC using DIAC.	
II	<b>Commutation Methods of Thyristors</b> Introduction, Commutation of Thyristors, Classification of forced commutation methods : Class-A, Class-B, Class-C, Class-D, Class-E, Class-F, Auxiliary current commutation.	
III	<b>Choppers (DC-DC Converters)</b> Classification of Chopper, Control Strategies, Step down Type-A Chopper with resistive Load, Type-A Chopper with RL Load, Step up Chopper, Current Commutated Chopper, Voltage Commutated Chopper.	
IV	<b>Three Phase Uncontrolled Rectifiers</b> Basic And Introduction of Three Phase Supply, draw three phase and line voltage, three phase half wave uncontrolled rectifier, three phase full wave uncontrolled rectifier, Comparison between halfwave and bridge circuits.	

**Basic Text & Reference Books:-**

- Power Electronics – P.S.Bhimbra.
- Power Electronics : Converters, Applications & Designs – N.Mohan.
- Power Electronics-1 – J.S.Katre.
- Thyristorized Power Controllers – G.K.Dubey.

