

# KRISHNASAMY

College of  
**ENGINEERING & TECHNOLOGY**

Approved by AICTE & Affiliated to Anna University  
Anand Nagar, Nellikuppam Main Road, S. Kumarapuram, Cuddalore - 607 109, Tamil Nadu.  
☎ (04142) 285 601 - 604    🌐 www.kcet.in    ✉ info@kcet.in

## DEPARTMENT OF EEE

05.07.2023

### CIRCULAR

Ref.: KCET/EEE/VAC/CIRCULAR/2022-23/01.

The following Value Added Course will be conducted during the academic year 2022-2023. The course will be conducted from 17.07.2023 to 21.07.2023. Students are instructed to register their names in the course allotted to them.

**Note: Students are instructed to attend the program without fail.**

S.No.	Course Code	Name of the Course	Year	No. of Period	Course Coordinator
1	EE-VAC2203	MODERN CONVERTERS	II	30	Mr.R.Srinivasan ASP/EEE
2	EE-VAC2204	POWER SYSTEM STABILITY	II	30	Dr.D,Periyazhagar AP/EEE

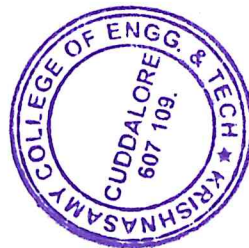
  
HOD/EEE  
5/7/23

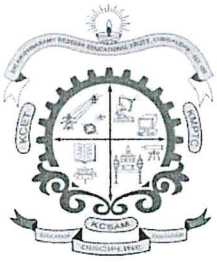
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## DEPARTMENT OF EEE

### SYLLABUS

**Subject Code:** EE-VAC2203

**Subject Name:** MODERN CONVERTERS

**Duration:** 30 Hours

#### **OBJECTIVES:**

- Switched mode power supplies
- Matrix Converter
- Soft switched converters

<b>MODULE I</b>	<b>POWER SUPPLIES</b>	<b>8</b>
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Power supplies and Classification with and without isolation, single and multiple outputs; Closed loop control and regulation; Design examples on converter and closed loop performance.

<b>MODULE II</b>	<b>CONVERTERS</b>	<b>8</b>
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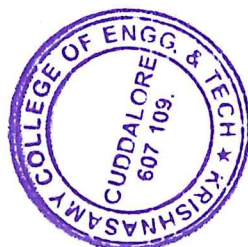
Switched mode AC-DC converters. synchronous rectification - single and three phase topologies - switching techniques - high input power factor . reduced input current harmonic distortion.

<b>MODULE III</b>	<b>INVERTER</b>	<b>7</b>
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Multi-level Inversion - concept, classification of multilevel inverters, Principle of operation, main features and analysis of Diode clamped, Flying capacitor and cascaded multilevel inverters.

<b>MODULE IV</b>	<b>SWITCHING</b>	<b>7</b>
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Soft switching techniques. ZVS, ZCS, quasi resonance operation; Performance comparison hard switched and soft switched converters.AC-DC converter, DC-DC converter, DC-AC converter.; Resonant DC power supplies.



**TOTAL:30 PERIODS**

## **COURSE OUTCOMES:**

- Ability to suggest converters.
- Ability to acquire knowledge on modern power electronic converters and its applications in electric power utility.
- Ability to acquire knowledge on filters

## **TEXT BOOKS:**

1. Power Electronics Handbook, M.H.Rashid, Academic press, New york, 2000.
2. Advanced DC/DC Converters, Fang Lin Luo and Fang Lin Luo, CRC Press, NewYork, 2004.

## **REFERENCES:**

1. Power Electronic Circuits, Issa Batarseh, John Wiley and Sons, Inc.2004
2. Power Electronics for Modern Wind Turbines, Frede Blaabjerg and Zhe Chen, Morgan & Claypool Publishers series, United States of America, 2006.
3. Krein Philip T, Elements of Power Electronics, Oxford University press, 2008

  
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