

# 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

30.11.2022

### 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 23.01.2023 to 28.01.2023. 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-VAC2201	INTRODUCTION TO SMPS AND UPS	IV	30	Mr.R.Srinivasan ASP/EEE
2	EE-VAC2202	APPLICATION OF MODERN POWER CONVERTERS	III	30	Dr.D,Periyaazhagar AP/EEE

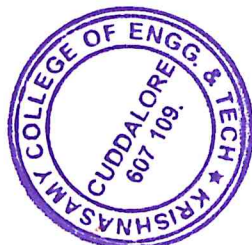
*[Handwritten Signature]*  
HOD/EEE  
30/11/22

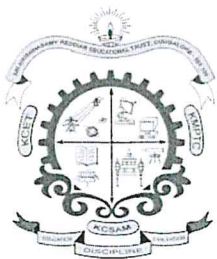
Copy to:

Class Room

Class In charge

Department File





# **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** **SYLLABUS**

**Subject Code:** EE-VAC2202

**Subject Name:** APPLICATION OF MODERN POWER CONVERTERS

**Duration:** 30 Hours

### **OBJECTIVES:**

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

### **MODULE I                      SWITCHED MODE POWER SUPPLIES (SMPS)                      8**

DC Power supplies and Classification; Switched mode dc power supplies - with and without isolation, single and multiple outputs; Closed loop control and regulation; Design examples on converter and closed loop performance.

### **MODULE II                      AC-DC CONVERTERS                      8**

Switched mode AC-DC converters. Synchronous rectification - single and three phase topologies - switching techniques - high input power factor. Reduced input current harmonic distortion. Improved efficiency. With and without input-output isolation. Performance indices design examples

### **MODULE III                      DC-AC CONVERTERS                      7**

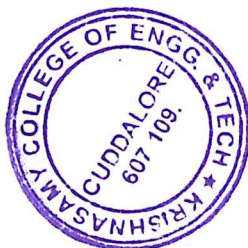
Multi-level Inversion - concept, classification of multilevel inverters, Principle of operation, main features and analysis of Diode clamped, Flying capacitor and cascaded multilevel inverters.

### **MODULE IV                      SOFT-SWITCHING POWER CONVERTERS                      7**

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 for AC-DC conversion and SMPS
- Ability to acquire knowledge on modern power electronic converters and its applications in electric power utility.
- Ability to acquire knowledge on filters and UPS

**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, New York, 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

  
HOD/EEE  
29/11/22

