

# 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

11.01.2022

### CIRCULAR

Ref.: KCET/EEE/VAC/CIRCULAR/2021-22/01.

The following Value Added Course will be conducted during the academic year 2021-2022. The course will be conducted from 18.01.2022 to 22.01.2022. 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-VAC2101	SMPS	IV	30	Mr.R.Srinivasan ASP/EEE
2	EE-VAC2102	UPS	III	30	Dr.D.Periyazhagar AP/EEE

  
HOD/EEE  
- 11/1/22

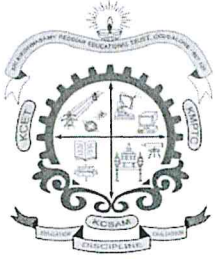
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### DEPARTMENT OF EEE

**Subject Code:** EE-VAC2102

**Subject Name:** UPS

**Duration:** 30 Hours

#### **OBJECTIVES:**

- Modern power electronic converters and its applications in electric power utility.
- Resonant converters

#### **MODULE – I**

**8**

Analysis and state space modeling of fly back, Forward, Push pull, Luo, Half bridge and full bridge converters- control circuits and PWM techniques.

#### **MODULE – II**

**8**

Single phase and three phase inverters, control using various (sine PWM, SVPWM and PSPWM) techniques, various harmonic elimination techniques- Multilevel inverters- Concepts - Types: Diode clamped- Flying capacitor- Cascaded types- Application.

#### **MODULE – III**

**7**

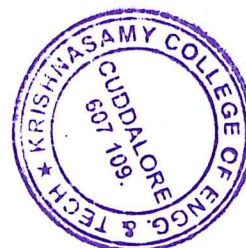
Introduction- classification- basic concepts- Resonant switch- Load Resonant converters- ZVS , Clamped voltage topologies- DC link inverters with Zero Voltage Switching- Series and parallel Resonant inverters

#### **MODULE - IV**

**7**

Principles of step down and step up converters – Analysis and state space modeling of Buck, Boost, Buck- Boost and Cuk converters.

**TOTAL: 30 PERIODS**



## **COURSE OUTCOMES:**

On Completion of the course, the students should be able to:

- Ability to analyze the state space model for DC – DC converters
- Ability to analyze the PWM techniques for DC-AC 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. Simon Ang, Alejandro Oliva, "Power-Switching Converters", Third Edition, CRC Press, 2010.
2. KjeldThorborg, "Power Electronics – In theory and Practice", Overseas Press, First Indian Edition 2005.
3. M.H. Rashid – Power Electronics handbook, Elsevier Publication, 2001

## **REFERENCES:**

1. Philip T Krein, "Elements of Power Electronics", Oxford University Press
2. Ned Mohan, Tore.M.Undeland, William.P.Robbins, Power Electronics converters, Applications and design- Third Edition- John Wiley and Sons- 2006
3. M.H. Rashid – Power Electronics circuits, devices and applications- third edition Prentice Hall of India New Delhi, 2007.
4. Erickson, Robert W, "Fundamentals of Power Electronics", Springer, second edition, 2010



  
HOD/EEE 11/1/22