## PROFILE OF THE INSTITUTE

Vasavi College of Engineering is established in the year 1981 under the aegis of Vasavi Academy of Education, The college has been granted autonomy by the University Grants Commission, New Delhi and Osmania University, Hyderabad for all the programmes for a period of six years with effect from 2014-15. The college is currently offering 6 UG and 5 PG Programmes. All the six UG programmes are accredited by the NBA. The college has well qualified and experienced faculty.

## ABOUT THE DEPARTMENT

The Department of Electrical and Electronics Engineering was started in the year 1999 offering BE programme in EEE. The Department has started PG programme in Power Systems and Power Electronics from 2012. It has well equipped and laboratories, well qualified experienced faculty with a deep sense of commitment towards the students. The department is a recognized research center under Osmania University.

## ABOUT THIS FDP

Modern power systems are changing fast with Power plants based on Renewable Energy Sources (RES). The Solar PV Power Plant (SPP) and Wind Turbine Generator (WTG) are most widely used for generating power based on RES. These SPPs & WTGs generate power using Power Electronic Power Converters. SPPs are classified as (a) Stand alone type feeding a group of local loads (b) Grid-Tied Type connected only to the Utility Grid (c) Hybrid Type which are connected to a utility grid and in addition they also feed the local loads. Power generated by these SPPs & WTGs is not continuous, due to variations in weather conditions, like sunlight/ wind speed/ temperature of the atmosphere. Hence, Battery based Energy Storage Systems (BESS) in combination with Power Electronic Bi-Directional Convertor are being used to mitigate the limitations of discontinuous energy supply from SPPs & WTGs in RES. All these are creating new challenges and opportunities in developing new technologies and operation of the Power systems at various levels.

Many industries and academic institutions are extensively working to solve various issues related to the SPPs/ WTGs/ BESS and Power Electronic Bi-Directional Convertors. Considerable R&D work is in progress and this is results in advanced New Products.

Many of these developed products are already commercially deployed in view of energy efficient and reliable operation.

This FDP is designed to focus on creating know-how/ know-why on various aspects of Power Electronic Power Converters in RES, including issues related to their topology/ interconnection/ grid integration, battery energy storage systems/ Bi-Directional Convertor technologies, local generation and power flow control.

## RESOURCE PERSONS

1. Dr. R.K.Pandey, Director General,NPTI,Faridabad
2. Prof. M.Sydulu, Professor, EED,NIT, Warangal
3. Dr.Subramanyam, Ex Deputy Director, CPRI, Bangalore
4. Prof. N.Vishwanathan, Professor, EED,NIT, Warangal
5. Dr. A.Kribakaran, NIT, Warangal
6. Sri. Srinath Topucharla, Sr engineering manager-ABB
7. Dr. P.Chandra Sekhar,Asst.Prof, IIT,Bhubaneshwar
8. Dr. B.Mallesham,Professor,OUCE,Hyd
9. Dr. B.Mangu, Professor,OUCE,Hyd
10. Sri. A.Pampapathy, Director, Analogics Tech India.Ltd,Hyd
11. Sri A.Srinivas Nagaraja, Joint Director, M/s Poly Wires and Metals, Hyderabad
12. Sri. A.S. Naidu, GM,M/s Greenko Group, Kurnool
13. Sri. A V N L Jagannadha Sarma, EE APEPDCL.
14. R.Venkatesh, Protection Engineer, GE, Hyderabad

## TOPICS TO BE COVERED

- Smart Grid and their Implementations
- Application of AI Techniques in smart micro grids.
- Power Electronics Systems and their applications in Renewable Energy based Power Generation
- Solar Power Plants (SPP)/ Installation, Operation &Maintenance for Roof Top Applications.
- Battery Energy Storage Systems for Solar Power Plants.
- Bidirectional power converters for Battery Energy Storage Systems connected to Solar Power Plants Connected to Utility Grids
- Utility Grid Connected Solar Power Plant-System Design, Installation & Operation
- 1 MW Battery Energy storage system for Utility grid
- Energy Management System (EMS) and Its Implementation/ Demonstration
- WTGs & their Power Electronic Converters
- Power evacuation techniques from PV and wind sources
- Simulations of Power Systems and Power Electronic Convertors
- FACTs for Power Transmission Control
- Solar Grid Inverters in smart Grid Environment
- Hands on sessions on smart grid and renewable energy systems by PRDC

## WHO CAN ATTEND?

The FDP is Open to the Faculty Members of AICTE approved Technical Institutions, Research Scholars, PG Students, Working Professionals fromR&D organizations & industry.

## REGISTRATION AND FEE PARTICULARS

Number of participants is limited to Forty. The filled in application should reach the Coordinator on or before 30th November 2019.

Selected participants will be informed by 2nd December 2019.

There is no registration fee for faculty from AICTE approved institutions and Travelling expenses will be reimbursed to outstation participants as per AICTE norms subject to submission of original travel tickets.

Accommodation will be provided to the outstation participants only as per AICTE norms.

Registration for participating in the FDP may be done by sending the application (soft/hard copy) in the prescribed format duly signed by theconcerned Head of the institution.

Application forms may be downloaded from the college website: www.vce.ac.in

**Registration can be done online at:**
https://docs.google.com/forms/d/1UUFm8dz0KKe2FpMD6yhKwZk7TzxzsuXKz_QTKtGhCvw/edit

Note: Participants who register online has to bring the hard copy of it with Head of the Institution signature on the first day of FDP for registration.

## IMPORTANT DATES

Submission of Registration Form: 06/12/2019
Intimation of selection to the participants: 07/12/2019
Program dates: 9th to 21st December 2019

**Filled in application form is to be sent to:**

Coordinator, AICTE sponsored FDP on "Recent Advances in Power Systems and Power Electronics Applications in the Environment of Smart Grid and Renewable Energy Systems" EEE Department, Vasavi college of Engineering, Hyderabad-500031, TS

## CONTACT:

Dr.K.Ravi Kumar, 8639517714, 040-23146031/39
**Email:k.ravikumar@staff.vce.ac.in,drkadali12345@gmail.com**
P.Ravi, 9989600881
**Email: ravi.ponnala237@gmail.com**

## PROGRAM EDUCATIONAL OBJECTIVES (PEOS):

- **PEO 1:** Graduates will acquire technical competence to analyze, design and solve engineering problems in the field of Electrical and Electronics engineering and use modern engineering tools, techniques and software.
- **PEO 2:** Graduates will be able to acquire necessary skills and obtain employment and will be productive in the professional practice of Electrical and Electronics Engineering and related fields.
- **PEO 3:**Graduates will be sensitive to professional and social contexts, committed to ethical action and engaged in lifelong learning skills.

## PROGRAM OUTCOMES (PO'S)

- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **Conduct investigations of complex problems:** : Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The engineer and society:**Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:**Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSOs)

- EEE students will be able to design, analyze Power Systems & Electrical Machines to solve complex engineering problems.
- EEE students will be able to design and analyze Electrical and Power Electronic Circuits.
- EEE students will be able to use and apply modern software tools and techniques related to Electrical Engineering.

**CHIEF PATRONS**
Sri. P.Ram Mohan Rao
President, Vasavi Academy of Education
Sri. M.Krishna Murthy
Secrertary, Vasavi Academy of Education

**PATRON**
Sri. P.Balaji,
CEO, Vasavi College of Engineering

**CHAIRMAN**
Dr. S.V. Ramana, Principal

**CO-CHAIRMAN**
Dr. M. Chakravarthy, Professor & HOD-EEE

**ADVISORY COMMITTEE**
Dr. M. Sydulu
Professor, EED, NIT, Warangal
Dr. P.V. Rajgopal
Retd. GM, BHEL corporate R&D
Dr. P.M.Sarma
Professor, EEE

**PROGRAMME COORDINATOR**
Dr. K. Ravi Kumar
Professor, EEE Department

**COORDINATION COMMITTEE**
Dr. Ch.V.S.S.Sailaja, Assoc. Prof.
Mrs. G.Sandhya Rani, Sr Asst. Prof
Mr. M. Sreenivasulu, Sr Asst. Prof
Mr. G. Mahesh, Asst. Prof
Dr. G.Pranava, Asst. Prof
Mr. U.Elisha, Asst. Prof
Mr. N.Uday Kumar, Asst. Prof
Mr. P.Ravi, Asst. Prof
Mr. P.Rajasekhar Reddy, Asst. Prof
Mr. M.Dhanunjaya Rao, Asst. Prof

## Department Vision:

Excellence in quality education by keeping pace with rapidly changing technologies and to create man power of global standards in the field of Electrical and Electronics Engineering.

## Department Mission:

To impart knowledge to electrical engineering students so that they have the skills to innovate, excel and lead in their professions with values for the benefit of the society.

# AICTE
# Sponsored Two Week
# Faculty Development Programme (FDP)
# on
# "Recent Advances in Power Systems and Power Electronics in the Environment of Smart Grid and Renewable Energy Systems"

## 9-21, December 2019

**Organized by**

Department of
**Electrical & Electronics Engineering**
Vasavi College of Engineering
(Autonomous)
(Sponsored by Vasavi Academy of Education Regd.)
(Approved by AICTE)
(Affiliated to Osmania University)
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**Email: k.ravikumar@staff.vce.ac.in (O)**
**drkadali12345@gmail.com (P)**

## College Vision:

"Striving for a symbiosis of technological excellence and human values."

## College Mission:

"To arm young brains with competitive technology and nurture holistic development of the individuals for a better tomorrow."