**Self Sponsored Short Term Training Program (STTP) in virtual/online mode On "Sustainable Development and Recent Advances in Electrical Engineering (SDRAEE) (Virtual mode)",
From 26th September to 30th September 2022.
At Department of Electrical Engineering, SVNIT Surat, Gujarat-395007**
Program Coordinators: Dr. Vasundhara Mahajan Dr. Anandita Chowdhury,
Dr. Ashish K. Panchal, Dr. Akanksha Shukla.

1. The Motivation:

The sustainable development has become integral part of electrical network. The technological advancements and modernization has led to the advanced control and programming techniques. In this context, artificial Intelligence based techniques have become popular for solving different problems in power systems such as energy management, planning, scheduling, forecast etc. These techniques can deal with difficult tasks faced by applications in modern large power systems with added interconnections installed to meet increasing load demand. Artificial neural network (ANN) and fuzzy logic controllers (FLC) are very versatile and popular. The latest machine/deep learning tools are giving more flexibilities and freedom of operation. Power systems are living in an era of major changes, pushed forward by the emergence of new technical issues and the availability of innovative technologies, enabling new functions for monitoring and control of transmission network operation and stability. This includes the addition of renewable energy sources and changes in energy market.

This course serves to bring communities together to share knowledge, learn from one another and propose new collaborations in order to further advance the field. This course is aimed at the full spectrum of people involved in electrical engineering/science from model development, validation and all the way through to application. The experts will identify the prioritize areas in the field that require further research. This consist of hands-on intensive modules involving a combination of lecture and demos, providing students and research professionals with the background they need to frame engineering questions in mathematical parlance, embark on analyses of these models, and work with a diverse array of data using advanced computational methods. The basic modelling and simulation techniques for electrical machines/power system will be elaborated to the participants. This course will demonstrate the methodology of incorporating the technological advances and the implementation of sophisticated computing techniques. Upon completion, attendees would be able to perform research analysis, create reproducible workflows, extend understanding through independent study using web-based resources, express hypotheses as mathematical models and utilize for societal benefits. The course will be conducted in virtual/online mode through googlemeet/MS-team/webex.

2. The major course intentions:

Following are the broad objective of the course; however, it is not limited to***.

1. *Exploration of various developments in electrical machines/power electronics/power system engineering with mathematical modelling and implementation of simple case studies/demos.*
2. *Simulation of basic/advanced components of electrical systems.*
3. *Basics of sustainable development and electrical engineering.*
4. *Integration of renewable energy sources into power systems (solar, Wind etc.) The application of advanced converters/power electronics converters to power system. (FACTS/Power filters)*
5. *Advance computational tools for electrical machines and power systems. Modern condition monitoring tools for electrical machines.*
6. *Power system reliability, security, deregulation and restructuring. Optimization in power system engineering and its simulation in MATLAB. Programming by using MATLAB tool box. (NN tool, Fuzzy, Genetic algorithm etc.)*
7. *The role of deep learning/machine learning in electrical system planning.*

3. Speakers:

The eminent speakers from IITs/NITs/ and other reputed Institutes will be invited for vast revelation and knowledge enrichment.
Following are a few of experts:

1. Dr. G. N. Pillai, Professor, Department of Electrical Engineering, IIT Roorkee.

2. Dr. Francisco Gonzalez-Longatt, Professor, Electrical Power Engineering, Department of Electrical Engineering, IT and Cybernetics, University of Southeast Norway.
3. Dr. Rajesh Kumar, Professor, Department of Electrical Engineering, MNIT Jaipur.
4. Dr. Deepak Fulwani, Associate Professor, Department of Electrical Engineering, IIT Jodhpur, Rajasthan
5. Dr. Kusum Verma, Associate Professor, Department of Electrical Engineering, MNIT Jaipur.
6. Dr. Fernando Lezama, GECAD–Research Group on Intelligent Engineering and Computing for Advanced Innovation and Development, Institute of Engineering, Polytechnic of Porto (ISEP/IPP), Portugal.
7. Dr. Abdul Saleem Mir, Assistant Professor Department of Electrical Engineering, IIT Roorkee.
8. Dr. Shashank Vyas, Senior Associate Consultant, Energy & utilities, Infosys.
9. Dr. Vivek Prakash, Postdoctoral Fellow, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia.
10. Dr. Piyush Kant Assistant Professor Department of Electrical Engineering, IIT Kanpur.
List will be updated.

4. Who can apply?
The faculty members/students/industry professionals can apply for the course.

5. Registration and General Information:
Registration Link: https://forms.gle/Fz1JiUcLzekGZmEcA
The above online registration link should be used to apply for the program.
The last date of reaching applications is 20th September 2022. The candidates will be informed of their selection through e-mail by **23th September 2022** via email. Limited seats are available in this course hence shortlisting will be done on the basis of first come and first serve only. However, the candidates will be informed as soon as their completed application form reaches to the coordinator (via email or post).

6. Course fee
(a) Students UG/PG/Ph.D.: Rs. 300 + 18% GST = Rs. 354.
(b) Academicians/College Teachers: Rs. 600 + 18% GST = Rs. 708.
(c) Delegates from industries: Rs. 2,000 +18% GST = Rs. 2360.
(d) Foreign participants: $20.
Please mention "SDRAEE, SVNIT" in remark during payment.

7. Account details for fees payment: (Online)
Name of the beneficiary (In favor of): Director SVNIT-CCE
Account Number: 37030749143
Branch code: 03320
IFSC code: SBIN0003320
MICR code: 395002012
Nature of Bank Account: Current account
Name of the Bank: State Bank of India
Branch: SVRCET Branch, SVNIT Campus, Ichchanath, Surat – 395007, Gujarat, INDIA.
Branch contact no.: 0262 2258618, 0261 2227125
Please mention "SDRAEE, SVNIT" in remark during payment.

8. Address for Communications:
Coordinator, SDRAEE2022
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