

**TEQIP (III) sponsored Two Week Short Term Training Program (STTP) on
Computer Aided Techniques for Electrical Machines and Power Systems, 11 – 21 June, 2018,
Department of Electrical Engineering, Sardar Vallabhbhai National Institute of Technology,
(SVNIT) Surat, Gujarat – 395007**

Coordinators: Dr. Prasanta Kundu, Dr. Anandita Chowdhury, Dr. Pranav B. Darji, Dr. Vasundhara Mahajan

1. Motivation

The quest of technology development is in maintaining the balance between nature and machine. The recent technology is helping in building more efficient, reliable and sustainable systems. The ability of system to maintain stability, reliability and to provide high quality power supply depends on the controls available within the system. To maintain the sustainability of the system, the mathematical modelling and analysis has become an integral part. The theoretical concepts are explained and proved via mathematics. These concepts need validation so as to check its accuracy and effectiveness. The modelling and simulation are the techniques to relate and analyze. The system understanding and concepts get shape via models and exhibition of results. The implementation and execution of any system are the artistic ways of linking imagination and innovation with the realism.

Looking into the recent aspects of development, the proposed course addresses the need for efficient production, transmission and utilization of electrical power, and its control by the power electronic converters to meet the demand. The restructuring and deregulation and its impact on power system planning and management as well as condition monitoring of electrical machines will be explored.

Due to the technological advancements and modernization, the advanced control and programming techniques are being developed. In this context, artificial Intelligence based techniques have become popular for solving different problems in power systems such as control, planning, scheduling, forecast, etc. These techniques can deal with difficult tasks faced by applications in modern large power systems and electrical machines with added interconnections installed to meet increasing load demand. The application of these techniques has been successful in many areas of power system engineering. The finite element method (FEM) is a powerful simulation technique used to solve boundary-value problems in a variety of engineering circumstances. Finite elements, amongst numerical methods, have emerged as suitable techniques for electrical design, performance evaluation, and device optimization in low frequency applications. Over the last two decades, several variants of software for the finite element method have been developed and these have successfully been applied to rotating electric machines, transformers, permanent magnet motors, and power generation and transmission equipment.

The course will be useful for the budding researchers and technocrats. The basic modelling and simulation techniques for electrical machines and 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.

2. Major objectives:

Following are the broad objective of the course (however it is not limited to):

- Advance computational tools for electrical machines and power systems.
- FEM based design of electrical machines.
- Modern condition monitoring tools for electrical machines.
- Computer based studies of power systems.
- Modelling of various FACTS based systems (STATCOM, SSSC, VSC based HVDC, Filters).
- Modelling of Electrical Machines for dynamic studies.
- Wide area measurement and it applications to power systems.
- Restructuring & deregulation of modern power systems.

- Artificial intelligence in power system engineering.

3. Speakers:

The eminent speakers from IITs/NITs/ and other reputed Institutes / Industries will be invited for vast revelation and knowledge enrichment.

4. Registration and General Information:

The faculty members, *UG/PG/PhD students* of various technical Institutes/Colleges and industrial persons can apply for the course.

Completed applications of the participation for the course should reach in the attached format via post/courier/e-mail/in person at the given address on or before the last date. **The last date of reaching applications is 25th May 2018.** The candidates will be informed of their selection through e-mail by **29th May 2018.** The list will be uploaded on Institute website.

Limited seats (Approx. 30) are available and the confirmation will be done through email only. The decision of the coordinator will be final in all cases and the applicant(s) is/are bound to follow. The breakfast, working lunch and tea will be provided to all the participants. The participants would **not** be paid any TA and/or DA. *The candidates can send the scan copy of **completed application form** and demand draft via email at vmahajan@eed.svnit.ac.in, vasu.daygood@gmail.com, ac@svnit.ac.in. The hard copy must be followed by post. (Note: The demand draft/fees will be returned/refunded, if the candidate is not selected.)*

5. Accommodation

Suitably furnished accommodation will be arranged (if available), if requested in advance, in the hostels/guest houses of the SVNIT for out stationed candidates on twin sharing basis on nominal **payment basis** by participants. The accommodation and tariff details are available on SVNIT website. (<http://www.svnit.ac.in>). (approx. Non AC Rs 200 / AC Rs 300 per Person).

* The family accommodation will not be provided in any case.

6. Course fee

(a) Academicians/College Teachers: Rs. 1500/-,

(b) UG/PG/PhD students: Rs. 1000/-

(c) Delegates from industries: Rs. 5,000/-

The course fee to be paid through demand draft drawn on SBI in favour of “**Director, SVNIT- TEQIP IRG**”, payable at “**Surat**” and should be sent along with the completely filled application forms.

7. Address for Communications:

Organizing Committee (CATEMPS),

Dr. Vasundhara Mahajan, Department of Electrical Engineering

Sardar Vallabhbhai National Institute of Technology, (SVNIT)

Ichchhanath, SURAT, Gujarat – 395007.

Tel: 0261-2201611, 0261-2201665, 02612201670. M: 09974556731.

E-mail: vmahajan@eed.svnit.ac.in , vasu.daygood@gmail.com,

ac@svnit.ac.in, pkundu_iitkgp@yahoo.co.in

Application Form

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Name of the applicant:.....

Gender: (M/F)..... **DOB:**..... **Age:**.....

Qualification and specialization:.....

Student (UG/PG/PhD): **Designation:**..... **Experience:**.....

Accommodation required? Yes/No:.....

Dates & Duration (if yes):.....

Address for correspondence:

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Affiliated Institute/Industry address:

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Contact No.:..... **Email:**

Payment Detail: Demand draft No.: **Date:**

Amount (Rs.) **Drawn on (Bank Name with branch):**.....

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Signature of the Applicant

The applicant will be permitted to participate in the above program if selected. Further, I have personally talked with the applicant and the applicant seemed to be sure to attend the course, if selected.

Date:.....

Signature of Head of the Institution/Department with Seal

(*Note: The candidates can send the scan copy of completed application form and demand draft via email at vmahajan@eed.svnit.ac.in, vasu.daygood@gmail.com, ac@svnit.ac.in. However, the hard copy must be followed by post)