

Fundamentals of PSCAD and General Applications

The Professional's Power Systems Transient Simulator

nayak
CORPORATION

475 Wall Street, Princeton, NJ 08540

Ph: (609) 279-9050

Email: sales@nayakcorp.com

Date: September 21 - 23, 2010



Course Benefits

PSCAD V4 introduces the new era of toolsets for the simulation of electric power systems, distribution systems and power electronic systems. This course is designed to familiarize users with the general operation of PSCAD Version 4. With numerous hands-on examples, users will be able to develop proficiency with PSCAD V4 and its applications. While this course is aimed at new and novice users, the last 2 days of the course can be quite informative for most PSCAD users.

Modern power, distribution and electronic systems are becoming increasingly complex. Traditional single frequency based study and design software is unable to deliver the precision needed to confidently deliver the best engineering solution. This course will help increase your engineering skills in this rapidly developing and competitive world.

Course Outline: Three Days

9:00 AM – 5:00 PM (all days)

1. PSCAD Student Edition installation
2. Introduction to PSCAD
3. Project Tree and Message Tree
4. Master Library
5. On-line Help System
6. Loading and Running a Case
7. Building a New Case: Hands-on Tutorial
8. Measuring and Plotting Voltage, Current, etc.
9. Use of Sliders, Switches, Buttons and Dials
10. Data Arrays
11. Advanced plot features
12. Fast Fourier Analysis using FFT block
13. Component Workshop: Creating graphics and connections, writing dynamics scripts, writing FORTRAN subroutines, C and MATLAB interface.
14. Hierarchical Modeling: Page Module, X Nodes, Wired/Wireless Exports and Imports, Global Constants
15. Custom Library: Components, .obj, .lib and .f files
16. Documentation: Sticky notes, Annotations, File references
17. Reporting and Printing: Features and Strategies
18. Batch Processing: Multiple Run Component
19. COMTRADE file generation for protection studies
20. Source Representation

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21. Transformers
22. Transmission Lines and Cables
23. Electric Machines: Synchronous, Induction and DC
24. Controls: Overview of the controls library
25. Advance Features: Discussion
 - Interpolation: How and when to use it.
 - Chatter (Numerical Oscillation): Detection and Removal
 - Optimal Ordering: Advantages
26. Other Transient Simulation Issues
27. Demonstrations of Advanced Examples: HVDC, SVC, UPFC, SSR, Wind Energy Systems, Fuel Cell Systems, etc. Brief demonstration and discussions only. There is no time for workshops on these topics.

Computer Requirements

Please bring your own laptop for the hands-on workshop. The latest version of PSCAD Student Edition will be installed on your computer. We will also install a PSCAD Professional Edition Trial. Recommended minimum system requirements:

- Microsoft Windows 95, 98, 2000, Me, NT, XP
- Pentium, 256 MB RAM, 100 MB Disc Space, CD ROM Drive, 1024x768 Screen
- TCP/IP protocol.

Instructor

Dr. Om Nayak, P.Eng.: Dr. Nayak has over twenty years of experience in the power systems industry. He was one of the principal developers of PSCAD at Manitoba HVDC Research Centre, in Winnipeg, Canada. He has taught many PSCAD seminars and other power systems simulation courses worldwide. He has a broad experience in power systems modeling and provides consulting services worldwide including PSCAD seminars at customer's site. Nayak Corporation is a full-service PSCAD distributor which offers technical support and training in conjunction with the Manitoba HVDC Research Centre.

Cost

The course will cost US\$2,000 (US\$ Two Thousand) for the three days. We will provide tutorial notes with tutorial examples. The participants are required to bring their own laptop. Lunches are provided on site. Hotel accommodations and local travel are the responsibility of the participant.

Travel and Accommodation

Princeton is located equidistant from New York City and Philadelphia. The most convenient airports are Newark (EWR) and Philadelphia (PHL) airports. Please check the following links for local accommodations. Also, feel free to contact us if you need further assistance.

<http://www.nayakcorp.com/contact.htm>
<http://www.princeton.edu/Siteware/Visitors.shtml>
<http://www.princeton.edu/pr/facts/hotels.shtml>

Cancellation

Since the course has significant hands-on content, the attendance is limited to 8 participants to allow maximum one-on-one interaction with the instructors. So please try to respond as soon as possible and reserve your place. The course may be cancelled if we do not have at least 4 participants. Students will be notified two weeks prior to commencement if the course is cancelled.

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Enrollment

(Please fill out a separate form for each participant and fax, email or mail it to Nayak Corporation, Attention Dr. Om Nayak)

Name	
Title	
Company	
Mailing Address	
Phone	
Fax	
Email	

Payment

- A minimum enrolment is required. Students will be notified two weeks prior to commencement if the course is cancelled.
- All prices are in US Dollars
- All prices do not include any applicable sales taxes
- Terms of payment: net 30 days from date of invoice
- Acceptable forms of payment are: Bank Draft, Money Order, Wire Transfer, Check or Credit Card.

Credit Card Authorization

Amount (Invoice Amount)	\$2,000 (US\$ Two Thousand)
Credit Card #	
Expiration Date	
Name on Card	
Address on Card with Zip (optional)	
Signature & Date	I agree to pay the total amount shown above in compliance with the card holder agreement