

Training Course Listing



Manitoba Hydro International (MHI) is committed to providing general power system and PSCAD™ specific training programs, which include practical case studies and interactive workshops, to aid in each client's understanding.

Course Topics

Applications of PSCAD & Transient Studies | 3 Days

This course covers the fundamentals applicable to the study of electromagnetic transients in electrical networks. A number of application areas such as AC transients, fault and protection, transformer saturation, wind power, FACTS, power quality, as well as other power system topics are discussed with practical examples serving to illustrate the subjects. Several case studies will be applied in detail to highlight practical situations encountered by engineers.

Applications of PSCAD in Power Systems including Switching & Lightning Induced Transients for Insulation Coordination | 2 Days

This course covers the electromagnetic transient studies that are required to determine the insulation levels and ratings of substation equipment. Specific topics include the following: selection of surge arrester (ratings and position) to protect substation equipment from lightning and switching surges, development of the system model for switching frequency overvoltage studies and estimation of 'failure rates, lightning overvoltage studies - representation of station equipment, line segments and towers for a lightning overvoltage study, circuit breaker TRV, and capacitor switching transients.

HVDC Control & Project Management | 3-5 Days

This course covers the fundamentals of HVDC transmission in electrical networks, including HVDC transmission system concepts, components, equipment and their characteristics and their controls. The concepts presented are reinforced with several PSCAD simulation workshops. Case studies will be applied in detail to highlight practical situations encountered by engineers in the field.

Modeling & Applications of FACTS Devices | 3 Days

This course covers the fundamentals of solid-state FACTS systems, system modeling, control system modeling, converter modeling, and system impact studies.



A variety of power system, PSCAD, and custom training courses are offered by MHI. Training programs offered will assist all clients in fulfilling their learning objectives, whether attendees are beginners or experts.



Wind Power Modeling & Studies Using PSCAD | 3 Days

This course covers the fundamentals of wind power and its integration into the electric grid. The vital role electromagnetic transient program based simulation plays in a wide range of wind integration aspects is highlighted and discussed in the classroom. Several case studies are applied in detail to highlight practical situations encountered by engineers. Course attendees are able to experiment with case studies in an interactive hands-on workshop environment using PSCAD simulation software.

Configuring Transmission Lines with PSCAD | 1 Day

This course is designed to help remove the uncertainty when modeling transmission systems. Attendees will touch upon important mathematical concepts, including frequency and time-domain theory, then move on to practical selection of model types, an explanation of important model parameters, and troubleshooting. Using PSCAD, course attendees will then apply their newly learned modeling skills to several real-world applications.

Advanced Topics in PSCAD Simulation | 2-4 Days

Attendees can request more detailed coverage of specific topics or phenomena of interest. This includes custom, client-specific component design and assisting users with the analysis of specific simulation models. Topics may include HVDC/FACTS, distributed generation, machines, power quality and others.

Other Available Courses

- AC Switching Study Applications in PSCAD
- Distributed Generation & Power Quality
- Lightning Coordination & Fast Front Studies

- Machine Modeling including SRR Investigation and Applications
- Modular Multilevel Converter – Voltage Source Converter Fundamentals

Custom Training Courses

MHI offers custom courses designed to meet clients' specific requirements. Often the most effective and productive use of time and money is receiving the training that meets clients' needs in regards to content, schedule and location. Dedicated course material can be provided through custom training programs, which can be delivered to groups or individuals.

Individualized Training

MHI also takes training one step further to work alongside clients as they build PSCAD system cases, prepare data, run cases, analyze results and draft recommendations this highly specialized one on one training allows clients to have a deep and thorough knowledge of PSCAD and its applications.

Course Particulars

Instructor

Course instruction will be provided by one of our many simulation and application experts. CV's available upon request.

Classroom Size

By striving to keep classroom sizes small, there is ample opportunity for questions and discussions among the students and the instructor.

Training Location

Courses can be provided at MHI's Winnipeg location, or an instructor can provide training at clients' desired location.

Manitoba Hydro International Ltd. is a world leader in power system simulation innovation and applied engineering solutions. As the developers of the world-renowned PSCAD™/EMTDC™ software, we recognize the importance of collaborative partnerships and technologies in the global power industry.

pscad.com

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Accessible formats available upon request.

