

UPS AND BATTERY SYSTEMS DESIGN, APPLICATION, TESTING & MAINTENANCE

October 1-2 , 2018 | Ottawa, ON

October 4-5 , 2018 | Mississauga, ON

October 23-24 , 2018 | Winnipeg, MB

October 25-26 , 2018 | Calgary, AB

October 29-30 , 2018 | Richmond, BC



**2-DAY
COURSE \$799**

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- 100+Page Digital Power Quality Handbook (Value \$20)
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DAY ONE

Part 1 - Review electrical and electronic building block theory

- Electrical (Resistance, Inductance And Capacitance)
- Electronic (Two, Three, Fourth And Multi-Layer Semi-Conductors)

Part 2 - Understanding basic UPS electrical theory

- Power Factor, Displacement Power Factor, Crest Factor And K-Factor
- 4 Types Of Load Profile
- Electrical Abnormal Disturbance With Detail Study Fourier Series
- General Common Solutions
- Different Type Of Passive Filters, Active Filter, MOV, And M-G Set

Part 3 - Symmetrical electrical component study

- True Meaning Of Three Phase Rotation
- (CW And CCW)
- Electrical Fault And Short Circuit Study.

Part 4 - Electrical grounding

- Review Different Type Of Grounding Applications
- Un-Ground, Solid Ground, High Re-

sistor Ground, Low Resistor Ground And Isolated Grounding

Part 5 - UPS System topolog

- 1, 2, 3 And 4th And Future Generation UPS Systems
- Objective Of UPS Systems
- Classical Sections Of UPS Systems
- Rectifier/Chargers, Step-Up And Step-Down Choppers, Battery, Inverter And Bypass
- Detailed Study Of The Above Sections And Their Limitations

Part 6 - UPS System configuration

- Single, Shared, Hot-Standby And Static Transfer Switches
- Forward And Transfer Operations Requirements And Factors

Part 7 - Transformers study

- Linear And Non-Linear Operations
- Different Configurations
- Phase Shifting Considerations

Part 8 - Battery energy storage device (Chemical type)

- Seal And Wet Cell (Pros And Cons)
- Internal Material And Weight Explanation

DAY TWO

- Factors That Affect Battery Performance And Battery Life Cycle

- Modbus, SNMP And Real-Time Communications

Part 9 - Lithium Ion Battery

- New Selection Of Electric-Chemical Energy Devices
- Lithium Ion Battery Development
- Potential Internal Issues And Prevention
- Outlook For The L-Ion For UPS System Applications

Part 10 - Non-battery energy storage devices

- Review Maxwell's 4 Equations
- Flywheel Operational Principles - Advantages and Disadvantages
- Capacitor Banks Option
- Super-Fast Generator And No-Break ATS

Part 11 - UPS, battery and standby generator sizing calculations

- KVA, KW, Leading And Lagging Power Factor Design Considerations

Part 12 - UPS-human interface development

Part 13 - UPS system specification detail study

- Real Life Case Study Example For Typical UPS Application.

Part 14 - UPS and battery preventive maintenance procedures and key measurements

- Life Cycle Components Replacement Study
- Capture Waveforms And Power Quality Reading Interpretation

Part 15 - Most common UPS system issues

- General Guard Line Of UPS And Battery Problems
- Battery Safety and Maintenance
- Float and Equalize Voltages
- Load Testing

COURSE TIMETABLE

Both days:
Start: 8:00 a.m.
Lunch: 12:00 noon (Lunch Included)
Finish: 4:30 p.m.

COMPLETE PROGRAM DETAILS: WWW.ELECTRICITYFORUM.COM/ELECTRICAL-TRAINING/UPS-SYSTEM-TRAINING

COURSE INSTRUCTOR:

PETER HO, P. ENG.

UPS Specialist, The Electricity Forum

The registration fee to attend the 2-day UPS And Battery Systems Design, Application, Testing and Maintenance training course is \$799.00 + GST/HST.

Register and prepay 14 days before forum date and receive an early bird discount of \$50.00

SPECIAL PROMOTION: Register 3 delegates at the full price of \$699 each, and get a 4th registration FREE!

The fee includes Course presentation materials, CEU Credits, refreshments, Lunch is Included.

CANCELLATION AND REFUND POLICY Registration fees are refundable only upon receipt of written notification 10 days prior to the conference date, less a 10 per cent service charge. Substitution of participants is permissible. The Electricity Forum reserves the right to cancel any conference it deems necessary and will, in such event, make a full refund of the registration fees.

WHEN & WHERE

Ottawa, ON - October 1-2, 2018
Radisson Hotel Parliament Hill
402 Queen Street
Tel: 613-236-1133

1750 Sargent Ave.
Tel: 204-775-7263

Toronto, ON - October 4-5, 2018
Hampton Inn and Suites
3279 Caroga Drive, Mississauga, ON
Tel: 905-671-4730

Calgary, AB - October 25-26, 2018
Holiday Inn Calgary Airport
1250 McKinnon Drive
Tel: 403-230-1999

Winnipeg, MB - October 23-24, 2018
Sandman Hotel & Suites Winnipeg
Airport

Richmond, BC - Oct. 29-30, 2018
Holiday Inn Vancouver Airport
10720 Cambie Road
Tel: 604-821-1818

WAYS TO REGISTER

The Electricity Forum

1885 Clements Rd. Unit 218, Pickering, ON, L1W 3V4
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ON-LINE:

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