



Power Electronics in Distribution Systems

A ONE-DAY CONTINUING PROFESSIONAL DEVELOPMENT SHORT COURSE

1st October 2015

Course Objectives

Power electronic devices are becoming more and more ubiquitous in modern distribution systems. Whether it be DSTATCOMs installed at distribution level for reactive power support through to inverters for renewable generation interfaces, power electronic systems are now found at all levels of the distribution network. This course is designed to provide attendees with an overview of modern power electronics and power electronic systems in the context of the modern distribution networks.

Course Benefits

Upon successful completion of the course, attendees can expect to gain knowledge and skills in the following areas:

- Power electronic devices and their characteristics including Diodes, IGBTs, MOSFETs and Thyristors.
- Power conversion system topologies including 1- and 3-phase rectifiers, controlled rectifiers, DC-DC converters (buck, boost, buck/boost), voltage source inverters and multi-level inverters.
- Advanced power electronics systems including DSTATCOMs, distributed generation system interfaces (especially solar PV inverters), active harmonic filters, unified power quality conditioners and dynamic voltage restorers.

Who Should Attend

This course is suitable for all engineers who are interested in expanding or revising their knowledge of power electronic systems in distribution networks.

Course Outline

Morning Session

- Introduction to the course
- Review of power electronic devices and their characteristics
- Power conversion system topologies

Afternoon Session

- Advanced power electronics systems including:
 - DSTATCOM
 - Inverters for distributed generation
 - Active harmonic filters
 - Unified power quality conditioners
 - Dynamic voltage restorers

In addition to theoretical lectures, the course will be complemented by simulation and hardware laboratory sessions along with a hardware demonstration.

About the Speakers

Professor Sarath Perera is Technical Director of the Australian Power Quality and Reliability Centre and a Professor in the School of Electrical, Computer and Telecommunications Engineering. His research interests include power quality, distribution system reliability, EMC and power system simulation techniques.

Dr Phil Ciuffo is a senior lecturer at the University of Wollongong. Over a career spanning 30 years, Dr Ciuffo has worked in both industry and academia as a professional Electrical Engineer. His research interests include modelling, analysis and control of A.C. machines, variable speed drives, modelling and analysis of power distribution systems, smart grids and distributed generation.

Registration Form

Please enrol me in the one day course "Power Electronics in Distribution Systems" to be held at the University of Wollongong on 1st October 2015

Cost per person: AUD\$650 inclusive of GST

Please register before 8th September 2015 (please see Note below).

Surname.....Given Name.....
Organisation.....Job title/position.....
Postal Address.....
State.....Postcode.....Country.....
Telephone.....Fax.....
Mobile.....Email.....
Special dietary requirements.....

Methods of Payment

If you wish to pay by **credit card**, please fill out the details below and **email to rdennis@uow.edu.au**.

Please debit (circle): Bankcard Visa Mastercard

Card number:

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AUD\$.....

Name on card:

Signature:

Email for receipt:

Cheque payable to "The University of Wollongong"

Mail to: PEDS Course Registration
 School of Electrical, Computer and Telecommunications Engineering
 University of Wollongong NSW 2522
 Australia

Note: There is no guarantee that economic participation levels for this course can be achieved. Registrants will be notified on the 9th September 2015 if the course cannot proceed due to insufficient numbers. The program may be changed at any time due to unforeseen circumstances. If the course cannot proceed for any reason, UOW will not accept liability of whatsoever kind for expenses incurred by any person or corporation with the sole exception of the course registration fee, which will be refunded in full.