

Australian Power Quality & Reliability Centre

Continuing Professional Development Short Courses

Quality Continuing Education for Technical Professionals

Rapid advances in technology makes continuing professional development essential for the modern professional. The Australian Power Quality & Reliability Centre in conjunction with the University of Wollongong offer a range of high quality continuing professional development short courses. All courses are presented by academic and industry experts with the most up to date knowledge and vast experience in each field. Custom courses are also available on request.



**AUSTRALIAN POWER QUALITY
AND RELIABILITY CENTRE**



**UNIVERSITY
OF WOLLONGONG
AUSTRALIA**

LIST OF COURSES

Quality of Electrical Supply

This introductory course covers all power quality problems including voltage sags, harmonics, transients and flicker. Delegates will learn analysis fundamentals, instrumentation techniques and methods of improving power quality by both network and plant modifications. A feature of the course will be a number of hands-on computer investigations for “what-if” scenarios. Course participants will also be presented with practical case studies of power quality problems and solutions from industry experts.

Advanced Quality of Electrical Supply – Harmonics, Unbalance and Voltage Sags

This course is an advanced course which builds on the introductory course, Quality of Electrical Supply, and is designed to expand the coverage of selected power quality topics in order to give participants practical skills in the analysis and mitigation of specific problems. The selected topics for this course are harmonics, voltage unbalance, voltage sags and interruptions, power electronic mitigation techniques and power quality monitoring and reporting

Advanced Quality of Electrical Supply- Flicker, Harmonics and Voltage Unbalance

This course is one of two advanced courses which build on the introductory course, Quality of Electrical Supply, and is designed to expand the coverage of selected power quality topics in order to give participants practical skills in the analysis and mitigation of specific problems. The selected topics for this course are voltage fluctuations and flicker, harmonics, voltage unbalance and power electronic mitigation techniques

Renewable and Distributed Generation

This course gives a practical understanding of the principles, practices and problems associated with grid connection of renewable and distributed generation resources. Further areas covered in the course include the operation, control and protection of generation-rich electricity distribution networks, network planning and reliability aspects for facilitating integration of these new generating technologies.

Solar Photovoltaic (PV) Energy Systems

This course is designed as an introduction to solar PV generating technology and network integration issues. The course covers all areas of solar PV energy generation and network integration including solar PV cell technology, solar inverter technology, renewable energy standards and solar PV network integration

Power Electronics in Distribution Systems

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 modern distribution networks.

Application of Power Quality Allocation Standards

This course is designed to provide a better understanding of the application of the power quality standards which specify the methodologies for allocation of emission levels for harmonics, flicker and unbalance. This includes the theory behind the allocation methodologies and how the methodology is applied in practice.

Power System Load Flow

This course is a refresher on power systems load flow. Topics covered include load flow basics such as phasor quantities, P and Q flow and load models along with methods of solution for non-linear equations as well as load flow analysis methodology including basics of formulation, busbar types and formulation. Case studies are presented which allow a transfer of theory to practical situations.

Power System Insulation Co-ordination

This course describes the theory and application of insulation co-ordination for power systems. Topics covered include: basic concepts (definitions and process), types of overvoltages (origins and characteristics), travelling waves, methods for limiting overvoltages and surge arrestors.

More Information

If you would like more information on the courses provided by the Australian Power Quality & Reliability Centre please see our website at <http://www.elec.uow.edu.au/apqrc/training> or contact Ms Raina Lewis, School of Electrical, Computer and Telecommunications Engineering, University of Wollongong, phone: +61 2 4221 3335, email: Raina_Lewis@uow.edu.au