



Another EMC resource
from EMC Standards

EMC Short Course in South Africa: 31 Oct - 6 Nov 2018

Helping you solve your EMC problems

EMC Short Course in South Africa: 31 Oct - 6 Nov 2018

presented by MESA Solutions (Pty) Ltd and Cherry Clough Consultants Ltd

To be held at the Denel Houwtec test facility, near Grabouw, Western Cape, South Africa

To register, and for more information, please email: info@mesasolutions.co.za

Given MESA Solution's close links with academia, it is only natural that we offer both fundamental and advanced training in EMC, which often does not receive enough consideration during the design process.

This will be our primary training event for 2018, supported by the IEEE 4th Global Electromagnetic Compatibility Conference (GEMCCON) that takes place immediately afterwards, from 7 to 9 November 2018, at nearby Stellenbosch University: <https://sites.google.com/view/gemcon2018>.

MESA Solutions and Keith Armstrong of Cherry Clough Consultants will be presenting this short course on EMC Fundamentals for Laboratories and Industry. The strong foci of this course are the underlying EMC principles and the practical design of PCBs, equipment, systems and installations. This includes incorporating hardening measures to reduce the effect of interference.

We will investigate the effects of unwanted electric and magnetic field coupling as demonstrated through a number of key experiments. The influence of ground loops, poor equipment placement and connections, and the effects of common conductors will also be considered.

Finally, the practical design of circuits, PCBs, interconnections, filters and shields relevant to the interference frequencies being considered, will provide the attendees with the necessary tools to handle the majority of EMC issues quickly and cost-effectively.

For further information, and registration details, please email: info@mesasolutions.co.za.

Course Agenda

Wednesday 31 October

- 08:30 Tea/coffee; Introduction and Overview
- 08:45 EMC Perspectives and Key Standards
- 09:15 The Physics of EMC (no maths!), Part 1
- 10:15 Tea/coffee
- 10:30 The Physics of EMC (no maths!), Part 2
- 12:30 Lunch
- 13:30 The Physics of EMC (no maths!), Part 3
- 15:30 Tea/coffee
- 15:45 Demonstration of Twin-flex Experiment

Thursday 1 November

- 08:30 Tea/coffee; Review of Twin-Flex Experiment (CM & DM Coupling)
- 09:15 EMC techniques for cables and connectors
- 10:30 Tea/coffee
- 10:45 Transfer Impedance of Cables (a practical experiment)
- 12:00 Lunch
- 13:00 EMC Filtering
- 15:00 Tea/coffee
- 15:15 Circuit design for EMC: a) Digital b) Analogue c) Power conversion d) Wired comm's

Friday 2 November

- 08:30 Tea/coffee; Choosing components for EMC
- 09:15 EMC Shielding, DC to 10s of GHz, Part 1
- 10:15 Tea/coffee
- 10:30 EMC Shielding, DC to 10s of GHz, Part 2
- 11:30 Shielding Plates (Experiment done in front of class with review afterwards)
- 12:30 Lunch
- 13:30 EM zoning, shielding, filtering and cabling for cabinets, systems and installations, Part 1
- 14:45 Tea/coffee
- 15:00 EM zoning, shielding, filtering and cabling for cabinets, systems, installations, Part 2

Monday 5 November

- 08:30 Tea/coffee; EMC Perspectives and Key Standards
- 09:00 Demonstration of Twin-flex Experiment
- 10:15 Tea/coffee
- 10:30 Review of Twin-Flex Experiment (CM & DM Coupling)
- 11:00 Essential PCB design techniques for EMC, Part 1
- 12:30 Lunch
- 13:30 Essential PCB design techniques for EMC, Part 2
- 14:30 Tea/coffee
- 14:45 Essential PCB design techniques for EMC, Part 3

Tuesday 6 November

- 08:30 Tea/coffee; Current Diversion experiment
- 09:30 Saving time and money with good EMC design (for managers and Directors)
- 10:15 Tea/coffee
- 10:30 Overview of EMC testing for IEC domestic, commercial, industrial standards Part 1
- 12:00 Lunch
- 13:00 Overview of EMC testing for IEC domestic, commercial, industrial standards Part 2
- 14:00 Tea/coffee
- 14:15 Reverberation Chamber and OATS Measurements
- 15:15 What does all this mean for labs and industrial environments?
In-house pre-compliance testing, alternative EMC measurements

Costs, and Materials provided

The cost for each participant is 3897-00 South African Rand per day, and VAT is payable.

Partial attendance of the first three, or last two days is possible – please specify during registration.

Comprehensive coursenotes will be provided.

Tea/coffee and lunches are included in the course fee.

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- 15:45 End of Day 5, and Course Conclusion