

Solar PV

Practical design & installation course



2 Day Solar PV course

This course covers practical solar PV system installation and design principles.

See what to look out for when doing PV installations in order to reduce your risk as a contractor & increase your profit as an EPC.

Content: See the next page for a detailed outline of the course.

When: Courses are presented nationally on a regular basis. Contact us for the next available date in your region

Where: Midrand, PE, Cape Town, East London, Bloemfontein, Durban & Kimberley

Time: The workshops start at 09:00 and include 4 x 1,5hr sessions per day. Starting and finishing times may vary due to traffic. Scheduled times will be

confirmed via e-mail a couple of days before the training.

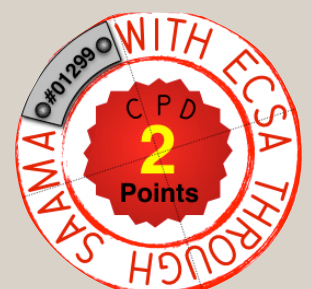
Safety: Indemnity forms might need to be completed in some classes, there may be physical testing of systems in which case safety gloves & or goggles will prevent accidental contact & reduce risks associated with physical activity.

For more information, enquiries, or; to register for the course: [Click here.....](#)

Cost Includes:

Lunch, training materials, equipment required to do the practical.

R3500 per person for the 2 day course.



Solar PV Practical Course Outline

Introduction

- What is happening locally with PV installations
- Local installation statistics

The sun as a resource

- Insulation
- Efficiency Comparison - Solar Thermal vs PV
- Watts/m²

PV Technology

- Performance of PV since the 1950's
- Manufacturing processes
- Thin Film, Mono & Poly Crystalline
- Series and parallel
- Fuse calculation
- Effect of temp on solar PV

Cable Calculations

- Volt drop

Earthing & SPD's

- Wiring options and alternatives
- Earthing tests

Inverters

- Micro, Hybrid, String, AC & DC Optimisers
- Double vs single MPPT's

Batteries

- Charging and discharging
- Fuses, circuit breakers and PSSC
- Insulating batteries

Safety

- Working at heights
- Electrical safety

Combiner boxes

- Using DC vs AC circuit breakers

Mounting structures

- Structure design
- Different Brands available locally

Standards

- NRS range of standards
- Development of new local standards
- International applicable standards
- Training and development

Energy Efficiency & Demand Assessment

- Reducing consumption
- Efficiencies of SWH vs. PV
- Using PV powered elements
- Measuring & Calculating Loads

Off-Grid

- Pure vs modified sine wave inverters
- Charge controllers

Design of Grid Tied Systems

- Design
- Installation Guidelines &;
- Fault finding

About the presenter & course content:

By the end of 2015 this training course had been presented to more than 1000 electricians, engineers and entrepreneurs since 2013.

As former Ombudsman for the Sustainable Energy Society of SA, Carel was responsible for identifying possible issues in solar installations and developing training materials for the solar sector. Currently Carel is also a consultant for the Copper Development Association Africa overseeing the water and electrical industry locally. As electrician he has done a number of PV installations, is involved with the development of local PV standards and currently only focusses on the local solar PV commercial, agricultural and residential sectors from a training and standards point of view. "I believe that knowledge of the sector and technology is key to the sustainable growth of the industry and thereby have been creating a hub of local information on solar PV installations, products and contractors from which candidates attending should benefit. Our training material only covers locally available products and explores the effect of local conditions on solar PV. This is a practical course for candidates that are ready to handle more information on PV. Learn about and use the various parameters to design and calculate panels, fuse sizes and batteries."



PDF Registration form

2 Day Practical PV Course



For invoicing purposes:

Company name:

VAT nr:

Company registration nr:
(if required)

Company physical address:

Company Suburb, town or city:

Company region:
(province)

Contact person at company:

Contact number at company:

E-mail address of contact:

Candidate information:

Name:

Surname:

I.D. nr:
(optional)

Cell or Mobile nr:

Candidate Province of residence:

E-mail address:

Occupation:

Please select province of interest: Solar PV Practical 2 day course: Gauteng

Cape Town BFN P.E East London Kimberley Durban

This form is intended to serve as a registration form for one of the solar courses offered by www.pqrs.co.za. On completion; this form should be e-mailed to carel.ballack@pqrs.co.za. Visit www.pqrs.co.za or; alternatively contact at Carel at 082 322 2601 for more information.