



## Advanced Photovoltaic Systems (Certificate of Attendance)

3-8 July 2017

E352, Electrical and Electronic Engineering, Faculty of Engineering, Stellenbosch University, Stellenbosch

### Synopsis:

The aim of the course is to provide attendees with the understanding and tools to design grid-tied (including hybrid configurations with backup power) PV systems within the South African solar resource, technical and legislative contexts. The underlying design criteria will be to optimise the energy yield versus lifecycle costs of the PV system within the given resource, technical and legislative constraints, i.e. the optimising the financial viability of the system.

Specifically, the following topics will be covered:

- Solar resource & irradiation data sources
- Different solar PV technologies
- Photo-voltaic panel: electrical characteristics, maximum power point, influence of shading & diffuse irradiation, etc.
- Photo-voltaic array: impact of positioning & tracking, string design and DC cable sizing, etc.
- Connection to the distribution grid: power electronics basics, earthing and circuit-breaker design, system sizing, AC cable sizing, South African regulations & standards, etc.
- Financial viability: understanding tariffs, payback, etc.

**No academic credits can be obtained by attending this course.**

### Who should attend:

Engineers, technologists and technicians involved in the marketing, design & implementation of grid-tied PV systems.

### Certification and Accreditation

The module has been registered with the Engineering Council of South Africa for 4 Continuous Professional Development points. A **Certificate of Attendance** with an indication of the CPD points and level will be awarded to all participants who attend the full course from Monday morning to Saturday lunchtime.

### Venue and Time

This course will be presented at the Engineering Knowledge Centre, Faculty of Engineering, Stellenbosch University and will run Mo-Fri & Sa from 08:00 to 17:00 on 3-7 July 2017 and from 09:00 to 13:00 on 8 July 2017. Directions can be obtained from: [crses@sun.ac.za](mailto:crses@sun.ac.za) or <http://crses.sun.ac.za/contact-us>

### Travel and Accommodation

Accommodation and travel are for your own account. The Stellenbosch Information Bureau can be contacted at tel. 021-883 3584 for delegates who want to make their own accommodation arrangements. A list of available accommodation can also be obtained from [crses@sun.ac.za](mailto:crses@sun.ac.za)

### Registration

The course is designed for a restricted number of attendees so as to personalize and maximize the learning experience. Bookings will be taken on a first come first served basis.

**Registration must be done online at**

**<http://apps.sun.ac.za/SCD/ApplicationForm.aspx?scourseid=4257>**

**No registration is final until you have received a confirmation by email from Stellenbosch University.**

**Registrations close on Friday 16 June 2017.**

### Course Fees

Course fee for the five and a half-day course:

- Course fee for the five and a half-day course: R9500
- **Cancellation of enrolment made up to and including 16 June 2017 will be subject to a 15% handling fee.** No refunds will be made after this date; however, substitutions will be accepted.
- **Attendance without payment will not be permitted.**

- In the case of unforeseen circumstances Stellenbosch University reserves the right to cancel the course or change the lecturer, in which case all fees will be reimbursed in full on request.
- The course fee includes all study material, tea/coffee and lunches.

### Presenters



**Dr Arnold Rix** is a senior lecturer in the Department of Electrical and Electronic Engineering. He holds a BEng and an PhD degree in Electrical Engineering. His main research field is photovoltaic. For the past few years he was working in the renewable energy sector on the construction of large scale wind turbines and the development, construction and grid connection of utility scale photovoltaic generation plants.



**Dr Bernard Bekker** is a consultant in the renewable energy field to a variety of clients including GreenCape, enerGworx and MLT Drives, specialising in PV system modelling and design. He holds a PhD in Electrical Engineering. Other areas of interest include energy provision to deep rural schools, smart grids and systems engineering.



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