



CENTRE FOR RENEWABLE &
SUSTAINABLE ENERGY STUDIES

Smart Grid Technology overview

Date: 1 - 5 February 2021

Venue: Electrical Engineering, Faculty of Engineering,
Stellenbosch University, Stellenbosch

Registration: [Registration link to be confirmed](#)

Course fees: R11 800

Presenter:



Dr Johann Strauss is a senior lecturer in the Department of Electrical and Electronic Engineering. He holds a PhD in Electrical Engineering. His main research fields are electrical energy systems and efficient energy conversion. For the past few years he concentrated in particular on free-piston Stirling engines/linear generators and photovoltaic systems.

The focus on photovoltaic systems is mainly on optimal operation and the short term energy yield prediction of large PV plants. He is also involved in research and development of energy storage and e-mobility technology

Synopsis

The coursework provides an overview of technology concerned with smart grids.

In order to have sufficient background of smart grids a high-level understanding of the electric power system, what is changing, and what opportunities and challenges these changes bring are provided. This is to understand the concept of the smart grid, specifically within the context of its role within the changing electric power system. Broad definitions and requirements, advantages and disadvantages of various generation and other technologies in mini-grids and micro-grids are also treated as examples of smart grids.

The relevance, role and implementation of demand side management are provided to understand the basics of grid stability within the context of smart grids.

The technologies overviewed in the course include technology related to supply side and demand side management, renewable energy (solar and wind), inverter and storage technology, substation automation and communications and metering technology, and big data and machine learning technology. In all of these cases, an understanding of the technologies, advantages and challenges associated with the technologies and the role that these technologies are playing and increasingly play in smart grids are emphasised.

Finally, a high-level overview of smart grid policy and the regulatory landscape in South Africa and smart grid maturity models are presented to amongst other help in the understanding of the process and pitfalls of developing smart grid strategies and business cases.

Who should attend

Engineers, technologists and technicians with an interest in load modelling, load forecasting, energy efficiency and demand management, Measurement & Verification, tariffs and smart metering.

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 will be awarded to all participants [who attend the full course.](#)

Venue and Time

This course will be presented at the Department of Electric and Electronic Engineering, Faculty of Engineering, Stellenbosch University and will run Mo-Fri from 08:00 to 18:00 on 1 - 5 February 2021. Directions can be obtained from: 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.

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.

Course Fees

- Cancellations made up to and including 18 January 2021 will be subject to a 15% handling fee. No refunds will be made after this date; however, substitutions will be accepted.
- **Payment is mandatory for attendance.**
- 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 lunch.

Faculty of Engineering
Private Bag x1; Matieland, 7602
South Africa
Tel: +27 (0) 21 808 4069
Fax / Faks: +27 (0) 21 883 8513
crses@sun.ac.za
<http://www.crses.sun.ac.za>