



Hydro and Ocean Energy

CENTRE FOR RENEWABLE &
SUSTAINABLE ENERGY STUDIES

Date: 2 - 6 August 2021

Venue: M223 – PG Class, Mechanical Engineering, Faculty of Engineering,
Stellenbosch University, Stellenbosch

Registration: [Click to register](#)

Course fees: R11 800

Presenter:



Dr James R Joubert is a qualified civil engineer with a MSc in Coastal Engineering and PhD in Mechanical Engineering. His postgraduate studies focused on ocean wave energy conversion, resource mapping on the South African coast and the design of a novel wave energy converter. He has conducted various consultation projects for device inventors and companies such as De Beers Marine and Eskom. He is currently employing his renewable energy and engineering expertise to the green building industry.

Synopsis

Ocean and hydro power can make a significant contribution to the generation of renewable electricity. In this introductory course both ocean and hydro energy associated with the elevation or movement of water will be studied, giving students a basic overview of the relevant resources, conversion technologies, project development and implementation, and the associated environmental and economic impacts.

Hydro Energy

Hydro energy is one of the oldest forms of renewable energy utilised to produce mechanical and electrical work. To better understand the potential of this energy resource, the local and global hydrological resource magnitude will be presented, as well as example hydro installations across the world and in Africa. Other topics that will be covered include: turbine selection criteria: specific speed and specific power parameters. Hydraulic design, hydraulic losses and pipe friction. Basic operational constraints. Economic feasibility. Micro hydro power systems. Environmental impacts and future scenarios.

Ocean Energy

It is possible to extract energy from ocean waves, currents, tides, salinity- and temperature gradients and use it to generate electricity. In this course the different ocean energy resources

will be studied as well as the conversion technologies applicable to each. In addition, aspects such as resource measurement and assessment, technology readiness, environmental concerns and the economics of ocean energy projects will be addressed, with particular emphasis on the available resource along the South African coast.

Who should attend

Engineers, technologists and technicians active in the energy sector. Architects, planners and developers. Government and local authority officials. Environmental Investors.

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 M223 – PG class of the Mechanical Engineering, Stellenbosch and will run Monday to Friday, 2 - 6 August 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.

Registration close: 20 July 2021

Course Fees

- Cancellations made up to and including 14 July 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.

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