FACULTY OF
ENGINEERING &
THE BUILT ENVIRONMENT

CPD
CONTINUING PROFESSIONAL DEVELOPMENT

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Dept. of Mechanical Engineering| CPD Course

Overview of the Power Plant Industry

Presented in person at UCT, 25-29 March 2024

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Introduction

The aim of this course is to establish a balanced understanding of the global energy domain, by enhancing the contextual understanding of content in other courses. Topics include: world energy outlook; integrated energy planning; types of power generation plants; renewable energy resources; nuclear power generation; energy efficiency and demand side management; energy industry and economics; power generation mix and the IRP (integrated resource plan); and the economics of power generation.

Course Content

Access to energy is a direct contributor to increased GDP per capita and improved quality of life especially in the developing world. In addition to this, the current global trend is towards reducing the dependence on fossil fuelled energy sources of which the electricity sector is one of the largest consumers. Provision of electricity to the consumer must be sustainable in the context of economics and environmental impact.
The course provides an overview of existing and novel power generation technologies. The course is divided into three main modules.

- Introduction to the energy sector
- Overview of electricity generation technology
- Basic economics of power plants

Course Presenters

Leon Malan is a mechanical engineer and Senior Lecturer in the Department of Mechanical Engineering at UCT, where he is the programme convenor for the postgraduate diploma in power plant engineering. He has been interested in and involved in the power generation industry from early in his career and holds an M.Eng in Nuclear Engineering along with a Ph.D with a focus on numerical methods for two-phase flow. He has worked in industry as a steam turbine engineer, leading large project teams on outage and refurbishment projects in the coal-fired power stations of Mpumalanga.

Priyesh Gosai is a researcher and consultant in the Energy industry. He specialises in numerical modelling of thermofluid systems with a particular focus on power plant flexible operation. In his work he is developing dynamic numerical models of boilers. These models will inform engineers to understand the implications of flexible operation of power plant performance. At a systems level these models will provide key inputs to identify constraints when modelling power systems.

Course Overview

Name	Overview of the Power Plant Industry
Duration	5 days, 25-29 March
Venue	In person course presented at the University of Cape Town
Course Fee	The in-person attendance fee is R12 000 (final amount to be confirmed)
Participants	Suitable for managers, engineers, students, and academics with a background in the technology aspects related to the energy sector.
Format	The course will be delivered in person at the University of Cape Town.

Certificates and CPD points

- Participants who attend 80% of the sessions will receive a Certificate of Attendance.
- This course forms part of the Power System Planning and Operations Training programme offered by Stellenbosch University.
- CPD certificates carry a weight of 4 CPD points.

Registration

Registration and Cancellation

- Register online
- Registration covers attendance of all sessions of the course and course material.
- Registrations close one week before the start of the course. Confirmation of acceptance will be sent on receipt of a registration form.
- Cancellations must be received one week before the start of a course, or the full course fee will be charged.
- For more information on application and registration procedures, please visit our website: https://ebe.uct.ac.za/cpd/registration-procedures

Contact details

For more information or details on CPD courses, visit our website or contact us.

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