



Dept. of Mechanical Engineering | Masters module | CPD course

Turbine Plant Engineering

18 - 22 August 2025



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Introduction



Steam turbines are some of the most used machines for energy conversion and electricity generation. This focussed course will provide participants with an overview of their operation and how they can be modelled. The course will cover the steam turbine components as well as the associated feedwater heaters and condenser.

The objective of the 5 day, in person course is to present a strong technical overview of the design, operation and maintenance of steam turbines and the associated equipment, such as the feedwater heaters, and to provide power plant engineers and technicians the required fundamentals and general understanding so that they can contribute meaningfully in design modifications, root cause analysis, and specification development for new or replacement equipment.

Who Should Attend

Suitable for managers, engineers, students, and academics with an interest in the energy sector and related technology. Ideal for professionals working on turbine plant and auxiliary system

Course Content

The course will cover various aspects of Turbine Plant Engineering and operation, including:

- Fundamentals of axial turbines, including performance prediction
- Turbine operation, protection and maintenance
- Turbine auxiliary systems, condensate and feedwater train
- Shell and tube feedwater heaters: fundamentals, performance and maintenance.

Course Convenor



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 active 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.

Overview

Course name	Turbine Plant Engineering (MEC4122Z)
Course dates	18-22 August 2025
Delivery format	Upper Campus, University of Cape Town.
CPD	5 CPD points, ECSA registration number: <i>UCTPPETPE25</i>
Fees	In-person fee: R15 500 Online fee: R13 950
Participants	Suitable for a broad audience, including managers, engineers, students, and academics interested in the technology aspects related to the energy sector.
Format	The course will be delivered as a face-to-face course in a venue at the University of Cape Town, as well as online. Further information will be sent closer to the time.

Registration

Registration and Cancellation

- [Register for this course](#)
- Registration covers attendance of all sessions of the course and course material.
- Registrations close one week before the start of the course. Confirmation of registration 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: www.cpd.uct.ac.za

Certificates and CPD Points

A digital certificate of attendance will be awarded to CPD participants. Participants need to attend 80% of the lectures to qualify for an attendance certificate. For further information on digital certificates please visit [Digital Certificates at UCT](#)

According to guidelines set out by the Engineering Council of South Africa, attendance of this course will earn participants 5 points towards Category 1 (Developmental Activities). The ECSA validation number for this course is *UCTPPETPE25*.

Please note: If you are interested in attending this course for credit purposes, you will need to register for the Post Graduate Diploma or as an occasional student. If you attend the course as a CPD participant, credit cannot be claimed in retrospect.

Contact details

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

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