DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Structured MEng in Power System Planning and Operations

ADMINISTRATIVE/ACADEMIC REQUIREMENTS

GENERAL:

This is a programme offered by the Dept. of E&E Eng. in response to the expectation that variable renewable energy (VRE) will increase significantly in the future South African power system. Increased VRE generation means that traditional power system planning and operations will need to adapt: the programme aims to prepare students for such a future, focusing on the relevant changing technologies, methodologies, and processes.

ADMISSION:

Prerequisite: To qualify for admission to our MEng (structured) programme in Power System Planning and Operations, the applicant must hold at least a BEng, a BSc Hons, another relevant four-year bachelor's degree, an MTech, or a PGDip (Eng). (For more information, please refer to the Engineering Yearbook for 2025, Section 3.6.

DURATION AND TEACHING LOAD:

Typically, two or three years on a full-time or part-time basis respectively, although on a full-time basis the programme can potentially be completed within one year. The curriculum consists of eight one-week block modules presented in person with 40 hours of contact time and an additional 110 hours work via distance education per module at NQF9 level. Successful completion of all modules is followed by a research project, which can also be done in parallel to modules dependent on time-availability. Each block carries 15 academic credits and the research project 60 credits.

COURSE MODULE DESCRIPTIONS

COMMON MODULES (2):

The Faculty of Engineering has identified five modules that cover aspects considered to be common to all branches of Engineering. Students must include **two** of these modules in their curricula.

Module Title	Code	Host Department	Credits
Advanced Topics in Engineering Management 873	11748	Industry Engineering	15
Numerical Methods 876	36323	Applied Mathematics	15
Project Management 873	51993	Industry Engineering	15
Project Economics and Finance 812	58157	Civil Engineering	15

COMPULSORY MODULES (3):

The core modules of the structured MEng in Power System Planning and Operations are listed below. Students are required to complete all these **three** modules.

Module Title	Code	Host Department	Credits
Power System Data Analytics 874	14479	Industrial Engineering	15
Long-term Power System Planning 874	14477	E&E Engineering	15
Power System Operations 874	13806	E&E Engineering	15

ELECTIVE MODULES (2):

In addition, students are also required to select **two** additional elective modules, **maximum one** from the Overview and Technologies list below, and **minimum one** from the Planning and Operations list below:

Overview and technologies modules			
Module Title	Code	Host Department	Credits
Smart Grid Technology Overview 874	13808	E&E Engineering	15
Smart Grid Communications 874	13807	E&E Engineering	15
Advanced PV Systems 844	13364	E&E Engineering	15
Energy Storage Systems 874	13810	E&E Engineering	15
Wind Energy 844	13185	M&M Engineering	15
Solar Thermal Energy Systems 814	11295	M&M Engineering	15

Planning and Operations Modules			
Module Title	Code	Host Department	Credits
Distribution Customer Concepts 874	13805	E&E Engineering	15

Students may apply to the Postgraduate Coordinator for recognition of modules done at other departments or institutions. However, no recognition can be granted for modules done as part of another qualification. Note that for modules presented at other institutions, students interested taking these modules will need to register for it themselves at the relevant institution, and then present the credits obtained to Stellenbosch University for recognition.

COURSE SCHEDULES AND DESCRIPTIONS:

A full calendar of the courses hosted by the E&E and M&M departments for this program as well as description of their content can be found here: https://www.crses.sun.ac.za/coursework-masters-diploma/

Information regarding the scheduling of the rest of the courses hosted by Industrial Engineering, Civil Engineering and Applied Mathematics can be found here: https://ie.pages.cs.sun.ac.za/ds/ A description of their content may be found here: https://ie.pages.cs.sun.ac.za/ds/meng/