DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Structured MEng in Smart Grid Technology: 2023

ADMINISTRATIVE/ACADEMIC REQUIREMENTS

GENERAL:

This is a programme offered by the Dept. of E&E Eng. in response to worldwide evolutional processes in the electrical energy domain. These are seen to be technologically very exciting, but will also have considerable impact on conventional networks, in the near to medium future.

ADMISSION:

Prerequisite: To qualify for admission to our MEng (structured) programme in Smart Grid Technology, the applicant must hold at least a BEng, a BSc Hons, another relevant four-year bachelor's degree, an MTech, or a PGDip (Eng.).

DURATION AND TEACHING LOAD:

Typically, two years on a full-time or part-time basis, although on a full-time basis the programme can potentially be completed within one year. The curriculum consists of eight one-week block modules 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 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, selected from the list below (content descriptions are provided in Appendix A).

Module Title	Code	Host Department	Credits
Advanced Topics in Engineering Management 873	11748	Industry Engineering	15
Numerical Methods TW 876	36323	Applied Mathematics	15
Project Economics and Finance 812	58157	Civil Engineering	15
Project Management 873	51993	Industrial Engineering	15
Data Science 874	14190	Industrial Engineering	15

COMPULSORY MODULES (5):

The core modules of the structured MEng in Smart Grid Technology are listed below. Students are required to complete all these **five** modules. For detailed module descriptions, please refer to https://www.crses.sun.ac.za/coursework-masters-diploma/.

Module Title	Code	Host Department	Credits
Smart Grid Technology Overview 874	13808	E&E Engineering	15
Power System Operations 874	14481	E&E Engineering	15
Smart Grid Communications 874	13807	E&E Engineering	15
Distribution Customer Concepts 874	14480	E&E Engineering	15
Power System Data Analytics 874	14479	Industrial Engineering	15

ELECTIVE MODULES (1):

In addition, students are also required to select **one** additional elective module from the list below:

Module Title	Code	Host Department	Credits
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
Long-term Power System Planning 874	14477	E&E Engineering	15
Hydrogen in the Energy System	TBA	M&M Engineering	15
Green Hydrogen Technology	TBA	Chemical 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/