



*ELECTRICAL POWER ENGINEERING*

Department of Electrical Power Engineering

Postgraduate Research Template

#	<b>Student Name / Surname</b>	Andile Madikizela	<b>Start Date</b>	2019	<b>Supervisor</b>	Dr. M Kabeya
	<b>Title of Project</b>	Seasonal Variation of Soil Resistivity and Corrective Factor for Optimal Substation Earth Grid Design in Eastern Cape.	<b>Completion</b>	2020	<b>Co-Supervisor(s)</b>	Prof. I.E. Davidson
<b>Program of Study (M Eng. / D Eng.)</b>			<b>M Eng.</b>			
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<p><b>Synopsis of Research Project:</b>          Soil resistivity is one of the main factors influencing the earth grid design. Soil resistivity measurements are carried out to determine the actual value for the in situ soil condition under the prevailing weather conditions. It is well known that the soil resistivity varies annually with the seasonal change no correction factors are known to be available for use in South Africa. It is necessary then to determine a set of "seasonal soil resistivity correction factors" to be applied as necessary. Practical constraints do limit the development of a set of nationally applicable correction factors and a single correction factor cannot be applied nationally. The research documents work done so far for the Eastern Cape area in relation to measurements carried out, initial conclusions arrived at the development of an initial correction factor. The correction factor has to prove to meet the SANS Std 61936-1 minimum safety requirements (i.e. touch and step potentials) in the earthgrid design for all seasons.</p>						