

# **PowerFactory Basic**

## **Objective:**

To provide a thorough and comprehensive introduction to the basic features of **PowerFactory** software. The topics Data management, loadflow studies, short circuit calculations, variations, operation scenarios and basic reporting will be covered.

## **Pre-requisites:**

- A good working knowledge of how to operate Windows, Windows Explorer and any normal Windows program (e.g. Word).
- A basic mathematical understanding of loadflow studies and fault calculations.
- Background experience through the use of Digsilent **PowerFactory** - this will greatly enhance the participants absorption of the course material. This experience may be acquired by performing the Tutorial Exercises that are found under, Help -> Tutorial, in **PowerFactory**.

**No of participants:** Minimum: 6; Maximum: 12.

**Cost:** Please visit [www.digsilent.co.za](http://www.digsilent.co.za) for latest course fees, which includes a set of course notes, lunch and refreshments.

Computers and PowerFactory licences are also supplied.  
Please note the booking clauses on the registration form.

**CPD Points:** 3

**Duration:** 3 days

## **Topics to be covered:**

### **Introduction**

- Structure and operation principles of Digsilent **PowerFactory** operation.
- Overview of main functionality.
- Project management; starting a project from scratch.
- Graphical User Interface; using the single line diagram, entering a network & defining network elements.
- Populating the database; using the Data Manager.
- Using the Built in Library and creating a user library.

### **Load flow**

- Performing a loadflow and interpretation of error messages to debug the user data.
- Use of built in tools to analyze the load flow results.
- Examination of the models used for lines, cables, transformers, loads, synchronous and induction machines.
- Voltage control and tap changers.
- Configuration of results and reporting.

### **Short circuit calculations**

- Performing fault calculations; single bus fault, all busses faulted, multiple faults, faults on lines and different fault types.
- Configuration of results boxes to suit the user's needs.
- Reporting of results.

### **Advanced data management**

- Creating substation templates and adding GPS data to network elements such as substations and lines.
- Variations, Operation Scenarios and Study Cases.
- Management of the data and projects; backing up advice.
- Exporting and importing data.
- Searching and filtering of data, Flexible Data Manager and Network Model Manager.

### **Exercises**

- Typical scenarios are examined using prepared networks and case studies.