

Fundamental principles of overhead line design and practical implementation.

COURSE SUMMARY (Course Code TA1)

This in-depth course will provide you with the basic overhead line design principles.

This 3-day course is aimed at teaching the basic principles of overhead line design and includes the following design concepts:

- a) Application of the new SANS code to structure design and loading of conductors as well as the associated safety aspects.
- b) The basis of conductor Sag and Tension calculations, including optimal use of Sag / Tension to determine structure strength, equivalent span concept, horizontal and compound loads.
- c) Preparing profile drawings and sag templates for manual templating of two separate lines to understand wind and weight span concepts, uplift and its effect on conductor swing. Use of conductor weights, offsets clipping and broken wire conditions.
- d) The application of pole loading and pole strength designs, single, H Pole and braced H Pole. Application of stay wires and the effect of incorrect stay application to structures.
- e) Principles of foundation designs for pole structures.

The course is aimed at wood and steel pole line 6.6kV up to 132kV.

BENEFITS

Understanding of the design principles and the applications of the national standard and the practical implementation of the design/profiling examples done will enable the attendees to understand the basis of overhead line design including manual design and profiling of an overhead line. This provides a good platform for the use of more advanced training / software packages like PLS CADD and associated overhead line packages.

COURSE INSTRUCTOR

CORNELUS ROEDOLF GOUWS (Tobie).

Managing Director of Legoux. Tobie has 35 years of experience in the overhead line design industry. He is an expert in overhead line software and is the developer of the SAT and Visual SAT Programmes.

Tobie is a Professional Technologist that specializes in overhead line transmission systems. With extensive line experience with consulting engineers, contactors and Utilities (Eskom).

Tobie developed innovative solutions and software for transmission line systems, has worked and executed projects for Eskom, Municipalities in South Africa as well as into Africa.



WHO SHOULD ATTEND

This course will benefit those people involved in the design and construction of transmission line structures. This includes:

- Engineers, junior engineers, technologists, technicians
- Managers working in the overhead line design
- Construction and operation areas, project managers and senior supervisors
- Utility staff working in design and planning areas
- Consultants, Contractors and Learning Institutions

COURSE MATERIAL

- Delegates will receive a set of electronic notes and written manual
- Videos illustrating examples and experiences of the topics discussed will be shown where necessary.
- Profile sheets and sag templates will be provided for practical design work.
- Demo version of the Visual Sat software program included.
- Course manual will include definitions and basic calculation formulas. For future references



COURSE AGENDA

Day 1:

- Background
- Design Standard
 - Application of new SANS Standard
 - Mechanical design – application of loads
 - Clearances and Crossings
 - Current rating, Electric field
 - Safety aspects of lines (clearances etc.)
- Main Components of overhead line designs
 - Climate
 - Environment
 - Conductors
 - Structures
 - Foundations
 - Hardware and Insulators

Day 2:

- Electrical design aspects
- Conductor design and loading
- Shield wire design and loading
- Structures design and loading
- Foundation design and loading
- Stayed structure design and loading

Day 3:

- Practical line design
- Profile drawing preparation
- Design and implementation of sag templates
- Line Profile

CASE STUDY 1 - Design and profile short 132kV Steel pole line

CASE STUDY 2 - Design and profile 5km, 33kV wood pole line

- Line design and sag tension tables
- General discussion



TERMS AND CONDITIONS:

Payment Terms

Payment needs to be made within 10 working days from date of invoice or 21 days prior to the training start date, whichever is sooner.

The delegate is responsible to ensure Legoux (Pty) Ltd is notified via the booking form if a Vendor Application is required before payment can be authorised by the delegate's principal.

Rescheduling of booking

Rescheduling of a booking will be allowed if there is an available seat at the next scheduled training course. The delegate is still liable for payment of the original invoice associated with the original booking. There will be no credit notes issued for rescheduling of the training course, unless caused by Legoux.

The request to reschedule a booking needs to be provided in writing to training@legouxsa.com within 14 days prior to the start date of the training course.

Failing to do so will automatically be treated as a cancellation.

The delegate will be registered for the next available course.

Cancellation of booking

Notification of cancellation of attendance must be made in writing to training@legouxsa.com

Cancellation requests received less than 7 working days prior to the start date of the training course will incur the full cost of the training course.

Cancellation request received 14 days prior to the start date of the training course will incur a cancellation fee of 50% of the full cost of the training course.

Substitution of booking

Delegates will be allowed a substitution for the training course. Legoux must be notified in writing at least three days prior to the training starting date.

Non-attendance of booked training intervention

No refund for non-attendance.

General

Legoux reserves the right to cancel the course, change the course location. In the event that the course must be cancelled, the delegate will be informed 7 days prior to the commencement of the training course and receive a full refund.

Legoux will not be held liable for travel and accommodation costs. The conference fee includes course material, lunch, and refreshments only.



Copyright

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REGISTRATION INFORMATION

Delegates are responsible for their own travel and accommodation arrangements. The names of nearby accommodation will be provided if requested.

Registration material will be available at 07:30 on the first day of the course. The formal programme will commence at 08:30 and end at approximately 17:00 every day.

Please Refer to Course Dates and Venues

Method of Payments:

Direct deposit Electronic transfer

Delegate Fee: Refer to Price List

EXCLUDING VAT

BANKING DETAILS

Account holder:	Legoux Pty Ltd	Company Reg No:	2014/073970/07
Bank:	Standard Bank	Vat Reg No:	4570270274
Account Number:	021368139		
Branch Code:	015841		
Branch:	Key West		
Ref:	Please State your invoice number		
Delegate Fee:	Refer to Pricelist		

PLEASE NOTE: *Registration will be accepted on a first come, first served basis. Enrolment for the course is limited to a maximum of 20 delegates. The registration fee covers the three-day course, course materials, lunch and refreshments during all course breaks. An invoice will be sent upon receipt of registration form. Payment must be received 21 days prior to course start and State your invoice number as reference for payment. To register, please complete the attached form and return it to: training@legouxsa.com*

**Attendance will only be confirmed once the registration form and payment/purchase order has been received.*



BOOKING FORM

email completed registration form to: training@legouxsa.com

Individual Registration:

Group Registration:

(Please provide names of all delegates)

*Session Date

*Company Trading Name

*Country

*Name of Delegate

*Surname of Delegate

*ID / Passport number

*Position held by delegate

ECSA registration number if applicable

Affiliate registration number if applicable

*Office Phone / Mobile Phone

*E-mail

*Special Dietary requirement

*Manager's Name

*Manager's Position

*Manager's E-mail

Ref No. (for office use only)

*Send Invoice To

*Mobile Phone / Office Phone

*Email

*Vat Registration (if applicable)

*Company Registration Number

*I have read and agreed to the terms and conditions below (please mark with an v)

*Delegate Signature

*Managers' Signature

