



“Understanding Friction, Lubrication and Wear”

Since 1985

SAIT Training Newsletter, September 2021

Follow the path from data to information and into knowledge.

Enrol Now for Lubrication Engineering 133: Face-to-Face at CedarWoods of Sandton, Johannesburg.

If you would like to attend our Lubrication Engineering 133 in Johannesburg, please contact the SAIT Secretary at secretary@sait.org.za to request a registration form; the course is filling up fast, particularly considering Covid Regulations, but we still have space for YOU. You could also visit the SAIT Website at <http://www.sait.org.za/events/training/> and scroll down to LE 133 to download the registration form. Complete it as soon as possible and return it to us at either secretary@sait.org.za or admin@sait.org.za. We look forward to seeing you there!



The Well-spaced, Airy Training Room at CedarWoods of Sandton

Report-Back on Lubrication Engineering 131, Held Face-to-Face at CedarWoods of Sandton from 26-30 July.

This course was successfully run from 26 to 30 July at Cedarwoods of Sandton, a venue we use regularly, which everyone enjoys. Their Covid Protocols are beyond reproach, they're helpful and friendly. Our thanks to the staff at CedarWoods for their efficient hospitality.

The delegates thoroughly enjoyed the course, as shown in the results: 4 distinctions, and an average of 81% in the final exam. Well done all, and special Congratulations to those who achieved distinctions – see in the photograph captions below.

Once again, our thanks go to Dave Gamble, who did most of the lecturing, and to David Beard, who spent two mornings lecturing to the group.

There were several comments from our delegates, regarding the amount of material covered by the course and the accompanying Manual.

The SAIT continually reviews the content of its courses, to allow for and encourage a better understanding of tribology. Changes to the Lubrication Engineering course will be implemented from March 2022.



*Dave Gamble, Lecturer
SAIT Past President and
Executive Committee Member*



*David Beard, Lecturer
SAIT Past President, Director, Treasurer and
Executive Committee Member*

Delegates to Lubrication Engineering 131, 26 – 30 July 2021 at CedarWoods



Kagiso Modiokwane



***Nico Burger
Distinction***



Maponti Phetla



Sebenzani Goqwana



***Justin Ellis
Distinction***



***Leonard Le Hanie
Distinction***



Patricia Mutangwa



Thanyani Malada



Wynand Nortjé



***Oratile Modisane
Distinction***

Lubrication Engineering – General

1. Please note that all our courses, whether face-to-face or on-line on Zoom, will depend on numbers attending or participating, and on government regulations.
2. From 2021 onwards, should we run online Zoom Courses, they will cost the same as the face-to-face courses.

Here is our proposed Training Schedule for the remainder of 2021 and early 2022:

Course Nos	Course Dates	Online / face to face	Venue
LE 133: SAIMM No. 01472	18-22 October 2021	face to face	Johannesburg
LE 134: SAIMM No. 01473	21-25 February 2022	face to face	Johannesburg

In-house courses are available on request.

The Following Information is applicable to all Lubrication Engineering courses held by the SAIT:

Registration closes a week before the starting date of each course; please book early to ensure your position.

Please note that photographs will be taken during the course and published in the SAIT Training Newsletter and on the SAIT Website.

Course Objectives: The course is designed to transfer a thorough understanding of tribology from a lubrication engineering perspective. Some twenty topics take participants through from basic chemistry, the theory of rubbing contact and friction in industrial applications, to the application of management principles, safety and the environment.

Who Should Attend? The course will benefit all maintenance personnel from Engineers to senior technicians, who are concerned with the operation, maintenance, condition monitoring or management of industrial plant, machinery, transport and other lubricant related disciplines. Marketing personnel will also gain valuable knowledge from the course.

Experience: Delegates should have a good understanding of lubricants and their application. Delegates must have at least twelve months experience in the lubricant and maintenance professions.

Case Studies: Delegates are invited to bring their case studies, their problems and their questions to the course for discussion.

Course Content: Lubrication Terminology, Fundamentals of lubrication, Production and characteristics of lubricant base oils, Properties of base oils, Additives, Specifications, Grease, Lubrication Devices, Synthetic Lubricants, Internal Combustion Engine Lubrication, Auto Drive Line Lubricants, Plain Bearings, Rolling Bearings, Gears, Hydraulics, Compressors, Transformer Oils, Metal working, Filtration, Condition monitoring & Used Oil Analysis, Seals, Coolants, assessment of failed components, Lubrication Surveys, Storage and Handling of Lubricants and Environment.

Examination: An examination will complete the course, with a certificate for successful candidates.

Costs: **SAIT Members: R18,750.00**

Non-Members: R21,275.00

Students: R5,750.00
(proof of registration as a
full-time student is required)

Introductory Courses on Lubrication Engineering and Wear and Materials

Introduction to Lubrication Engineering gives participants an introduction to the practical understanding of lubrication engineering, knowledge which would suit plant operators, buyers, lubricators, artisans and apprentices, but with sufficient detail to warrant CPD credits with ECSA. The course will also benefit anyone involved with the operation and maintenance of industrial plant and machinery, or mining, trucking, transport and other lubricant related disciplines.

Course Content: Lubrication Terminology, Source, Chemistry, Physical Characteristics, Additives, Fundamentals of Lubrication, Greases, Plain Bearings, Rolling Bearings, Gears, Hydraulics, Compressors, IC Engines, Oil Analysis & Condition Monitoring, Storage & Handling, Filtration and Synthetics.

Introduction to Wear and Materials gives participants an introduction to the different wear mechanisms and a practical understanding of the range and right selection of materials available to combat wear. A short introduction into the theory is complimented by practical examples of applications. The course is aimed at supervisors and foremen, who must be able to understand and recognise wear and related problems but will also benefit anyone requiring an introductory understanding of the common wear processes and the materials currently used to combat wear. The course is accredited with ECSA, for 0.8 CPD point.

Course Content: Wear mechanisms such as sliding wear, abrasion, erosion, fatigue-related wear, corrosive-wear and cavitation; Wear resistant materials including ceramics, rubbers, hard metals (tungsten carbide), polymers, ferrous and non-ferrous alloys; Case studies on wear failures. A certificate of attendance will be awarded to delegates who complete the course.

If you wish to attend one of our 1-day Introductory Courses, email us at secretary@sait.org.za or admin@sait.org.za.

A certificate of attendance will be awarded to delegates who complete each course. Delegates will also earn 0.8 CPD Credits, as the courses are registered with ECSA.



The SAIT is affiliated with
the American
Society of Tribologists and Lubrication
Engineers (STLE)



Please note that the SAIT will no longer be hosting the STLE's CLS, OMA, CMFS EXAMS, as they are Now Available Online for SAIT Members in good standing, at <https://www.stle.org/>. One of the benefits of SAIT Private Membership is the included STLE Membership, required for writing these exams.

- **Certified Lubrication Specialist (CLS):** Although not compulsory, it is highly recommended that you first attend the SAIT five-day 'Lubrication Engineering' course. A distinction of 75% is a good indication of success in the CLS exam, where the standard is high, and the pass mark is 70%. The recommended books for the CLS exam are the STLE Alberta Section 'Basic Handbook of Lubrication' Third Edition, and/or the AIST 'The Lubrication Engineers Manual' Fourth Edition.

- Oil Monitoring Analyst (OMA I and OMA II)
- Certified Metalworking Fluids Specialist (CMFS)

A significant amount of study is required for these exams, so it is advisable that candidates make an early start. Recommended reading for all modules is on the [STLE website](#) under "[Professional Development](#)".

You will need to be a registered, paid-up member of the SAIT, with its built-in membership of STLE, before you register to write these exams.

A 2-day 'SAIT CLS Study Overview' Can Be Arranged:

Contact Isabel at secretary@sait.org.za,
or Berice at admin@sait.org.za.

If you are interested in participating in a SAIT CLS Study Overview, please let us know **6 months before writing the CLS Exams on-line**, we will arrange it for you. This will be set as close to the exam date as possible.

Please note that before participating in the overview, you will need to spend time on a large amount of preparatory self-study and reading. Such an Overview will only go ahead if enough people wish to attend – PLEASE CONTACT US at either secretary@sait.org.za or admin@sait.org.za

Reminder: Evening Technical Webinar via Zoom

At 18:00 on Wednesday 8th September 2021

Email Isabel Bradley at secretary@sait.org.za for the link

Presenter:

Colin Nieuwoudt of Afrimat



How to Improve Filter Life Whilst Not Compromising Oil Cleanliness – a Solution to Metal Contamination.

Afrimat is a leading, black-empowered group with its main business and core competence in open pit mining. The Group supplies industrial minerals and construction materials to a range of industries across southern Africa. It further supplies bulk commodities to local and international markets. It has been listed in the 'Construction & Materials' sector of the JSE Main Board since 2006.

Colin is a qualified Diesel Mechanic with over 45 years of experience in heavy industry diesel equipment maintenance. He has developed a special interest in the condition monitoring of diesel machines over the years, and has spent the last 9 years focusing specifically on tribology in Afrimat. Colin has piloted numerous tribology improvement projects during his years as Maintenance Manager and Group Tribologist for Afrimat, the most recent of which are these Cone Crusher magnets.

Oil contamination on a crusher can be divided into two categories: wear metals and contaminants. Afrimat's kidney systems, which are installed on its crushers, are designed to remove both types of contaminants by filtering up to 7-micron, Beta 2000. However, because of the fine filtering media, the filters had to be changed almost every month.

SAIT Members and non-members are welcome to attend the meeting. We encourage students to attend and offer their contributions. The Webinar will be run as a Zoom Meeting; we ask attendees to mute their microphones on joining the meeting. Colin will take questions after his presentation.

If you wish to attend this Zoom Technical Webinar on Wednesday 8 September at 18:00, please email Isabel Bradley, the SAIT Secretary, at secretary@sait.org.za by 6 September, requesting the Zoom link.

We Want to Hear from YOU!

1. **Please email us** at admin@sait.org.za if you would be interested in participating or registering trainees to participate in any of our Training Courses.
2. **Please contact us** at admin@sait.org.za if you are interested in participating in a SAIT CLS Study Overview. This is NOT a full course, just revision and writing of previous test papers in preparation for the CLS Exam.



SAIT Office Hours and Social Media

SAIT's Office Hours:

09:00 – 15:00, Mondays to Thursdays; Telephone No. 011 804 3710.

On Fridays we work from home.

Please email Isabel at secretary@sait.org.za or Berice at admin@sait.org.za at any time with your queries.

Please Like the South African Institute of Tribology – SAIT – on Facebook and regularly check our Website for updates.



Telephone: +27 (0)11 804 3710
during office hours. If no reply,
please email us.



The SAIT Mission

"To promote technology transfer, whereby local tribological problems can be solved and products improved."