

Suggested Reading Material for the STLE CLS Exam

The reference materials below will help you review and understand the subject areas that are covered by the exam. Practical experience of the candidate is of equal importance. Knowing the reference material ONLY will not guarantee passing the exam.

Neither STLE, nor its CLS Committee, approve or endorse any independent education or training programs, or publications by individuals or organizations. These listed here are in common usage. The list is not meant to be all-inclusive or exclusive, but rather to represent a reasonable cross-sectional industry consensus.

General References

"The Lubrication Engineers Manual - Third Edition" (2007), AIST, 186 Thorn Hill Road, Warrendale, PA

"Basic Handbook of Lubrication, Third Edition", the STLE Alberta Section, 2011.

"Handbook of Lubrication & Tribology, Vol I – Application and Maintenance" (2006), Ed. G. E. Totten.

"The NLGI Grease Guide" latest edition, NLGI

"Tribology Data Handbook, 2nd edition" (1996), Ed M.J. Neale, Butterworth-Heinemann

ISO 6743 Lubricants, industrial oils and related products

ASM Handbook Volume 18: Friction, Lubrication, and Wear Technology (2002) Ed: P. J. Blau ASM

"Marks' Standard Handbook for Mechanical Engineers (11th Edition)", 2006, Ed: Avallone, E.A.; Baumeister, T. and Sadegh, A McGraw Hill.

"Lubrication Fundamentals, 3rd Edition" 2016, Pirro and Wessol, CRC Press

Vehicle and equipment manufacturers literature and websites.

By Topic:

Bearings

"Interpreting service damage in rolling type bearings" 1997 published by STLE

Damage analysis, failure analysis, troubleshooting and technical support bulletins, brochures and manuals available in print or electronically at interactive web sites offered by all major bearing manufacturers. These encompass all types of bearings

"Fundamentals of Fluid Film Lubrication" (2014) Ed M. K Ghosh, et al, McGraw-Hill,

Machine Design Magazine web site, Bearings 101 at www.bearings.machinedesign.com

"Grease Lubrication of Rolling Bearings", 2013, Piet M. Lugt, John Wiley & Sons,

Fluid Conditioning

"Machinery Oil Analysis—Methods, Automation & Benefits: A Guide for Maintenance Managers,

Supervisors & Technicians, Third Edition" Larry A. Toms and Allison M. Toms. Co-published by STLE

"Handbook of Filter Media 2nd Edition" 2001, Purchas, D.B. & Sutherland, K., Elsevier

"The Practical Guide to Oil Analysis, 4th edition", Insight Services

"Handbook of Condition Monitoring: Techniques and Methodology" Ed A. Davies 1998 Springer

Fluid Power

Industrial Hydraulic Manuals from a variety of equipment manufacturers

"Hydraulic Fluids – A Practical Guide" (2008) British Fluid Power Association, Coxmoor Publishing

Lubrication, Vol XLVIII, January 1962, pp 17-32

Design of Machine Elements, 8th Edition" (2004) Spotts, M.F. et al, Pearson/Prentice Hall

"Handbook of Bolts and Bolted Joints", 1998, John Bickford, CRC Press

Gears

"Handbook of Practical Gear Design", Darle Dudley, CRC Press

"Fundamentals of Gear Design", Raymond Drago, Butterworths 1988

"Machinery's Handbook"; 28th Edition, Oberg, Jones, Horton, and Ryffel, Industrial Press, 2008.

AGMA standards available from AGMA, Alexandria, VA www.agma.org

AGMA 912-A04, "Mechanisms of Gear Tooth Failure";

ANSI/AGMA 1010-E95, "Appearance of Gear Teeth -Terminology of Wear and Failure"

ANSI/AGMA 9005-E02 "Industrial Gear Lubrication"

Lubrication, Vol. 66, Number 1, 1980, pp. 1-24 Level 2

Lubrication Analysis

ASTM test methods for lubricants, friction, wear, chemical analysis, oxidation stability, Section 05 Petroleum Products and Lubricants, ASTM International

Lubrication Fundamentals

"The Chemistry and Technology of Lubricants, 3rd Ed", 2010, Eds. Mortier, R. M., et al. Springer

"Lubrication Fundamentals, 3rd Edition", 2016, CRC Press

"The Friction and Lubrication of Solids", 1950, Bowden, F. and Tabor, D Oxford Univ. Press,

"Engineering Tribology, 3rd Edition", 2005, Stachowiak, G. W. and Batchelor, A. W.

Lubrication Manufacturing

"Lubricants and Lubrication, 2nd Edition" (2007) Eds Mang, T. and Dresel, W., Wiley

Lubrication Programs

"Lubrication and Maintenance of Industrial Machinery", 2006, Eds Gresham, Robert and Totten, George, CRC Press

Practical Lubrication for Industrial Facilities, 2nd edition, Heinz Bloch, The Fairmont Press, 2009

Monitoring and Reducing Consumption

"The Lubrication Engineers Manual - Third Edition" (2007), AIST, 186 Thorn Hill Road, Warrendale, PA

Metalworking

"Cutting and Grinding Fluids Selection and Application, 2nd Edition", 1992, Jeffrey D. Silliman, SME

"Metalworking Fluids, 2nd Edition", 2006 Ed Jerry P. Byers CRC Press,

"Lubricants and Their Applications", 1993, Robert W. Miller, McGraw-Hill Ryerson Limited

Pneumatics

The basic laws of thermodynamics

"The Compressed Air and Gas Handbook, 6th Edition", 2003, Compressed Air and Gas Institute, www.cagi.org

Multiple internet sources discussing the "Bubble Point" test including ASTM F316

"A Practical Guide to Compressor Technology, 2nd edition", 2006, Heinz P. Bloch, John Wiley & Sons

Problem Solving

"Lubrication", 1971, RC Gunther, Chilton

"Machinery Failure Analysis and Troubleshooting" Volume 2, Heinz P Bloch-Fred K Geitner, Gulf Professional Publishing, 1999

Solvents and Cleaners

"The Lubrication Engineers Manual - Third Edition" (2007), AIST, 186 Thorn Hill Road, Warrendale, PA

Seals

"Seals and Sealing Handbook, 5th edition", 2007. Flitney, Robert, Elsevier, London

O-Ring Handbooks from Multiple seal manufacturers

"Handbook of Fluid Sealing", 1993, Robert Brink et al, McGraw-Hill

"Industrial Sealing Technology", 1979, H. Hugo Buchter, John Wiley & Sons,

Storage, Handling, Application

"The Lubrication Engineers Manual - Third Edition" (2007), AIST, 186 Thorn Hill Road, Warrendale, PA

Transportation

ASTM D4485

API Publications and website www.api.org

SAE Standards