



Livingston & Haven's **Institute of Applied Technologies**

The best hydraulic, electric and lubrication
training for plant maintenance.



2013
Training Schedule



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PRINCIPLES OF INDUSTRIAL HYDRAULICS (PIH)

5-Day Seminar Offered Eight Times During the Year

*Jan. 7-11 • Feb. 25 - March 1 • April 29 - May 3 • June 24-28 • July 29 - Aug. 2
Sept. 16-20 • Oct. 21-25 • Dec. 2-6*

The Principles of Industrial Hydraulics class consists of first-level training for maintenance personnel who have not had formal training in industrial hydraulics. Participants will have the benefit of learning fluid principles, standard control valves, pumps, hydraulic valve symbols, and that's not all! Learn basic setup techniques, how to troubleshoot hydraulic circuits, how pump controls work and how they are set up. Participants will also learn the ten fundamental circuits used in most hydraulic systems and an introduction to proportional controls. This is the best foundation training for hydraulics anywhere - with proven results!

3.2 C.E.U.'s

\$1650.00 includes tuition, workbook, student handouts, lunch and refreshments

Appropriate for: maintenance mechanics, millwrights, technicians, supervisors and plant engineering personnel



HYDRAULIC SYSTEM MAINTENANCE (HSM)

5-Day Seminar Offered Three Times During the Year

April 1-5 • Aug. 5-9 • Nov. 4-8

This second-level industrial hydraulic seminar is great for maintenance personnel who already have an understanding of hydraulic principles. Students learn about proper fluid requirements for modern hydraulic systems, how systems are set up for improved efficiency and improved reliability, in-depth study of component operation/use in hydraulic circuits and will evaluate their hydraulic schematic reading and troubleshooting ability. Students disassemble, evaluate and assemble standard hydraulic components, putting these components into hydraulic circuits for testing. More than 50% hands-on lab.

3.2 C.E.U.'s

\$1650.00 includes tuition, workbook, student handouts, lunch and refreshments

Appropriate for: maintenance mechanics, millwrights, technicians, supervisors

Prerequisite: PIH or consent from the instructor.



PRINCIPLES OF MOBILE HYDRAULICS (PMH)

5-Day Seminar Offered One Time During the Year

March 18-22

This is a first-level training seminar specifically developed for maintenance and service technicians with mobile hydraulic equipment responsibility. Students will learn about the principles of hydraulics as they relate to the operation, maintenance and troubleshooting of mobile hydraulic equipment. Students will also learn to read and interpret mobile hydraulic valve symbols and learn about variable displacement pumps and pump controls used with hydraulic systems.

3.2 C.E.U.'s

\$1650.00 includes tuition, textbook, student handouts, lunch and refreshments

Appropriate for: mobile maintenance mechanics and technicians, supervisors

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UNDERSTANDING PROPORTIONAL VALVES (UPV)

5-Day Seminar Offered Two Times During the Year

April 22-26 • Sept. 30 - Oct. 4

Almost every hydraulic system designed and built today uses electro-proportional valves. The Understanding Proportional Valves class will teach students how these valves work as well as how the electronic amplifiers work that control these valves. Students will learn the difference between open and closed control loops, and how proportional valves are used to control pressure, flow, direction and speed. Extensive lab exercises teach students how proportional valves work and how to test them for proper operation. This class is an appropriate seminar for both electrical and mechanical maintenance personnel.

3.2 C.E.U.'s

\$1750.00 includes tuition, textbook, student handouts, lunch and refreshments

Appropriate for: maintenance mechanics & technicians, electricians and supervisors



PRINCIPLES OF ELECTRICITY

4-Day Seminar Offered One Time During the Year

July 15-18

This seminar was developed for maintenance technicians that have not had previous formal training in electric/electrical theory and practice. This is a first-level training seminar providing theory, practical knowledge and structured hands-on lab exercises using our custom training panels designed using all industrial electrical components. This class begins with DC and AC electrical theory sufficient for the student to understand the principles of electrical conductance, resistance, reactance, voltage, current, power and their interrelationship. Students will build electrical circuits from schematic diagrams, learn the proper use of all measurement functions on a digital multi-meter and use the DMM for testing circuit functions and troubleshooting.

\$1350.00 includes tuition, training materials, measurement equipment, lunch and refreshments

Appropriate for all maintenance technicians



RESOURCE EFFICIENCY AND CONSERVATION

3-Day Seminar Offered One Time During the Year

April 2-4

This seminar shows the true costs for hydraulic, pneumatic, mechanical transmission and electrical systems. Students will learn the sources of plant facility energy inefficiency and how to improve productivity of the manufacturing equipment while dramatically reducing energy costs. These changes will provide real savings year after year.

\$950.00 includes tuition, workbook, student handouts, lunch and refreshments

Appropriate for: maintenance mechanics, millwrights, technicians, supervisors and plant engineering personnel



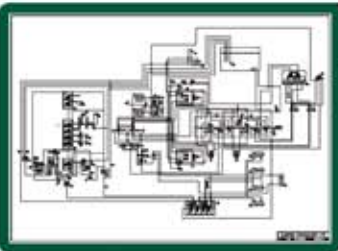
INDUSTRIAL LUBRICATION SYSTEMS (ILS)

3-Day Seminar Offered One Time During the Year

Preventative maintenance and proper equipment lubrication is critical for the prevention of breakdowns. We offer training that will cover operation and maintenance for all types of manual and automatic lubrication systems. Upon request, we can develop a training program based on the specific system(s) at your facility.

\$1000.00 includes tuition, workbook, student handouts, lunch and refreshments

Appropriate for: maintenance mechanics, millwrights, technicians, supervisors and plant engineering personnel



HYDRAULIC SYSTEM DESIGN (HSD)

5-Day Seminar Offered Two Times During the Year

Jan. 21-25 • Oct. 7-11

Advanced maintenance and engineering personnel have a need for information related to circuit design, proper component selection and sizing techniques. This class is structured around four hard-hitting modules.

- Sizing, options and application of various hydraulic circuits using standard pressure, directional and flow-control components.
- Introduction and application of logic cartridge valves for high flow, high horsepower hydraulic circuits.
- Pump types and application of fixed displacement and variable displacement pumps with pressure regulating type controls.
- Sizing, selection, options and application of various hydraulic circuits using proportional pressure, directional and flow control components.

3.2 C.E.U.'s

\$1750.00 includes tuition, workbook, student handouts, lunch and refreshments

Appropriate for: advanced maintenance technicians, plant and design engineering

Prerequisite: PIH & UPV strictly enforced for this advanced course

Students are required to bring calculators and must have the ability to manipulate and transpose various hydraulic related algebraic equations.

ONSITE TRAINING

Not only do we offer training classes in our facility - we also offer training classes in your facility! We will bring our customized fluid power and lubrication training programs to your company. We offer system specific training on your company's equipment as well as training in a classroom environment to increase general understanding. This training is individually tailored to each company so your maintenance personnel will understand how your equipment works and how it needs to be maintained. Whether it's a single training seminar on your company's equipment or a long-term training program, our experts are ready to assist you! Contact us today to discuss your technology training needs!



2013 Training Schedule

OSHA 10-HOUR OCCUPATIONAL SAFETY AND HEALTH TRAINING

2-Day Seminar Offered Two Times During the Year

June 5-6 • Oct. 16-17

A program to help bring your company into compliance, including comprehensive information about standards and training required by OSHA.



Topics Include

- Introduction to OSHA
- OSH Act, General Duty Clause
- Inspections, Citations and Penalties
- Hazard Communication
- Personal Protective Equipment
- Walking and Working Surfaces (including fall protection)
- Exit Routes, Emergency Action Plans, Fire Prevention Plans, and Fire Protection

Participants Will Receive

- Federal OSHA 10-Hour Authorized Card
- OSHA Compliance Manual
- Certificate of Completion

INDUSTRIAL TRAINING AT LIVINGSTON & HAVEN



Located at L&H Corporate Headquarters



REGISTRATION INFORMATION

To Enroll:

1-800-835-4969 or 704-588-3670 ext. 7406

institute@livhaven.com

The Livingston and Haven Institute

P.O. Box 7207

Charlotte, NC 28241

Enrollment for each class is limited to ensure maximum student participation. Enroll early to reserve your place in the training seminar of your choice. Payment may be made by check (payable to Livingston & Haven), by major credit card or with your company's purchase order (from which Livingston & haven will invoice).

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Visit us at www.LivHaven.com

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