



<b>Course Name</b>	Pump Installation and Maintenance
<b>Credit Hours</b>	3.5 Hours
<b>Course Description</b>	<p>This course introduces operators to pumping systems, hydraulics, basic pumping terminology, and pump curves. We will also look at a number of pump types, including end-suction centrifugal pumps, propeller pumps, turbine pumps, and rotary pumps. For each pump type, we'll discuss internal parts, construction, and operation. This course has no prerequisites.</p>
<b>Course Objectives</b>	<p>After completing this course, the licensee should be able to:</p> <ul style="list-style-type: none"><li>• Describe dead-end and recirculating hot water distribution systems.</li><li>• List several special considerations involved in chemical pumping systems.</li><li>• Define the term viscosity and give examples of high-viscosity materials.</li><li>• Describe suction head and suction lift pumping conditions.</li><li>• Tell what three elements make up total dynamic head.</li><li>• Define static suction head.</li><li>• Contrast liquid, brake, and electrical horsepower.</li><li>• Tell what information can be gained from pump curves.</li><li>• Describe the function of the following: pump casing, shaft, impeller, wear rings, and stuffing box.</li><li>• Contrast frame-mounted and close-coupled end-suction pumps.</li><li>• Give characteristics of fluids pumped with open, semi-open, and closed impellers.</li><li>• Name an advantage and a disadvantage each for stainless steel and brass shaft sleeves.</li><li>• Explain the construction of a lineshaft turbine pump.</li><li>• Name the two types of flow in a propeller pump.</li><li>• Tell the function of diffuser vanes in an axial-flow propeller pump.</li><li>• Define electrochemical corrosion and state its cause.</li><li>• Describe fluids that can be pumped by a regenerative turbine pump.</li></ul>

- Describe the fluids that can be pumped by a rotary pump.
- Explain the operation of external- and internal-gear pumps.
- Describe the parts and construction of a lobe pump.
- Compare/contrast timed- and untimed-screw pumps.
- Tell why sealed bearings might be used in a vane pump.

**Course Timed Syllabus**

Attached

**Method of Presentation**

This online course uses instructor-led video, animation, text, and images. Multiple choice questions are used to test how well the student understands the material between each section. Each answer choice has a response which tells the student whether the selected answer is correct or not.

**Schedule and Location**

This course may be taken at any time at [www.aypotech.com](http://www.aypotech.com). The student may sign in and out of the course as many times as needed to complete the course.

**Attendance Verification**

Licenseses can only access the training course using a secure username and password, linked to their unique email address.

**Method of Evaluation**

The licensee must complete all multiple-choice questions between sections correctly to get credit for the course. If their first response is incorrect, students will have to try again until they choose the correct answer. Question choices are randomized, so each participant will have a unique testing experience.

The course is also timed; participants will not get credit until they spend at least 210 active minutes in the course.

After successful completion of the course, the licensee is required to complete and submit a questionnaire in order to access their certificate of completion.

**Online Review Access**

To review this course, go to [www.aypotech.com](http://www.aypotech.com) and sign into the learning system using the login information below.

Username: ORWtester

Password: ORWtester

**Instructor(s)**

Jerry Durham (resume attached)

**Cost**

\$35.00