



<b>Course Name</b>	Fluid Mechanics
<b>Credit Hours</b>	1 Hour
<b>Course Description</b>	This course explains how fluids behave, especially under pressure and in motion. This lesson is divided into two major parts. The first concerns fluids at rest and describes the properties fluids have when they are standing still. The second half treats the subject of fluids in motion.
<b>Course Objectives</b>	After completing this course, the licensee should be able to: <ul style="list-style-type: none"><li>• Define a fluid.</li><li>• Define pressure and identify common units of pressure measurement.</li><li>• State Pascal's Law and give an example of its application.</li><li>• Explain the difference between gauge pressure and absolute pressure.</li><li>• Explain the Bernoulli Effect and give three examples of how it is utilized in industry.</li><li>• Explain how a siphon works.</li></ul>
<b>Course Timed Syllabus</b>	Attached
<b>Method of Presentation</b>	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.
<b>Schedule and Location</b>	This course may be taken at any time at <a href="http://www.aypotech.com">www.aypotech.com</a> . The student may sign in and out of the course as many times as needed to complete the course.
<b>Attendance Verification</b>	Licensees can only access the training course using a secure username and password, linked to their unique email address.
<b>Method of Evaluation</b>	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 60 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.

<b>Instructor(s)</b>	Jerry Durham
<b>Cost</b>	\$19.00

## Fluid Mechanics Timed Syllabus

Section		Questions	Minutes
1	Definition of a Fluid	1	4
2	Fluids Distribute Forces	1	4
3	Definition of Pressure	1	4
4	Measuring Pressure	1	4
5	Sources of Fluid Pressure	3	12
6	Gauge Verses Absolute Pressure	1	4
7	Liquid Seeks Its Own Level	1	6
8	Velocity Head Verses Static Pressure Head	1	4
9	The Bernoulli Effect and Venturi Applications	1	6
10	Friction Head	1	4
11	The Siphon	1	8
<b>Totals:</b>		<b>13</b>	<b>60</b>
<b>Time Required to Complete Course:</b>			<b>60</b>



## **Jerry L Durham**

### **Certificates/Licenses**

North Carolina Electrical Inspector Level III

North Carolina Plumbing Inspector Level I

North Carolina Mechanical Inspector Level I

Washington Electrical Administrator #DURHAJL821PQ

ICC Kentucky E1 Electrical Inspector, Masters Electrician, Journeyman Electrician

NCCER Core and Electrical Curriculum Instructor Certification

### **Work Experience**

#### **Instructor (JADE Learning/At Your Pace Online)**

**2018 - Present**

Write and develop course curriculum, technical articles, and related learning materials. Teach in-person classroom courses.

#### **Electrical Inspector- LVL 3 (Alamance County Government)**

**2015 - 2018**

Code enforcement officer, enforcing all guidelines set forth in the National Electrical Code and applicable State-issued code amendments, as they apply to residential and commercial electrical installations throughout the state of North Carolina.

#### **Electrical Instructor (Alamance Community College)**

**2017- Present**

Taught from six to thirty NC electrical inspectors per 40-hour training session. Taught basic electrical theory, Ohm's Law, circuitry, voltage drop calculations, box/pipefill calculations, junction and pull-box calculations, conductor derating and adjustment calculations, residential-service-calculations, and National Electrical Code.

#### **Code Enforcement Officer (Louisville Metro Government)**

**2009 - 2015**

City inspector, charged with determining property maintenance and health and safety code compliance and/or infractions for dwellings (interior/exterior), commercial structures, properties, parcels and lots. Included enforcement of local, state and federal code requirements pertaining to building, zoning, electrical, plumbing, HVAC and Land Development in the Louisville Metro area. The department's electrical instructor, performing classroom setting electrical instruction.

#### **Electrical Instructor (ABC Trade School)**

**2010 - 2014**

Instructor of 25 electrical trade students participating in their first through fourth year of a four-year electrical apprenticeship program. Also performed state approved Masters and Journeyman State Licensing preparatory courses.

#### **Electrical Instructor (IEC Trade School)**

**2009 - 2010**

Instructor of 25 electrical trade students in a four-year apprenticeship program.

#### **Licensed Electrician (Curtsinger Electric Company)**

**2003 - 2009**

Managed multiple electrical remodel and new-build projects, performing interior/exterior lighting design, installation and system troubleshooting. Diagnosis and repair of residential and commercial electrical, phone and cable installations. Continual training of apprentices in the areas of customer care, electrical theory/diagnosis, repair/installation and effective time management.