	ODU MET 330 Fluid Mechanics	Test # 1 Reflection

Test # 1 covered the following course objectives:

- Explain the fluid dynamics in pipes and fittings:

- Apply the principles of conservation of energy (Bernoulli's Equation) and mass tot fluid flow systems;
- Computer friction losses in pipes for a variety configuration (series, parallel, and network, etc...

The test was designed to make the student think about the process and not just plug and solve using the equations covered in the course lectures. There were two methods of solving the problems, a simple way of looking at the problems or a more complicated method to arrive at the same answers. This being the first time I have taken a course of this type I calculated the problem in a more complicated manner which took longer to solve the problems.

My answers were very close to the test key, but slightly off in several areas. In the second problem, I basically split the system into two sections, in order to calculate the pressure at the inlet (section side) of the pump, then from the pump to the outlet of the pump to the supply tank. The answer key demonstrated this process in one step, which is more efficient. In problem number one, I solve for the deflection of the gasoline, mercury, and oil and my answers were almost exactly as the test key. I believe I did not used the most efficient method for solving the problem. It took me an extremely long time to solve the problems. I would work more problems to prepare for the test next time and would like to have a pre-test to prepare for it.

Based on the test solutions, I would score a grade of B on the test from my perspective, using the grading rubric. The excel spread sheet was a mess, compared to the key. I was not really sure about this part of the test, plus I did not convert the watts to kW, so my spread sheet answer were off tremendously. I have no issues creating the chart, did not plot out all three of the items.

One the issued I had with the test was getting started and where to begin to solve the problems, I started slow but after reviewing my note and reading the chapters, I was able to get a some confidence to solve the problems, plus the fact I was able to email the instructor a few questions for guidance helped.

I would not change anything excepted the time I started to solve the test problems, due to work I could not start until Friday night and completed Sunday.

The new concepts I have learned are using Bernoulli's equations to solve for pressure on the section side of the pump, calculating the friction losses for pipe fitting and valves.

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I completed the Newport News Apprentice School program as a nuclear pipe-fitter so, I have installed piping systems and conduction hydro testing on piping systems, but was never understood why specific type of pipe or valves were used for certain systems on or in the reactor plant. I main steam systems used on submarines, plus the high-pressure air system used for emptying out the ballast tanks for the submarines were systems I worked. On the Nimitz U.S. Aircraft Carriers, I work on many different types of pipe system including nuclear and non-nuclear systems, we were never told about the friction losses of the fitting or valves. This I believe is something the mechanics should be aware so they have a better understanding of why the systems are designed.

I planned to teach Engineering courses for a college or university program, so the knowledge I gain from this course and MET program at ODU is helping me develop my knowledge and skills needed deliver quality instruction. The more knowledge on the subject provides the students with confidence in the instructor's ability to be the subject matter expert (SME) for the topic.

I need to become more efficient at working the problems, I have been taking the long road in solving the problems, adding more steps than needed to solve the problems. This adds more time for a student to solve the problems, but I am accounting for every item in the system. I spent a good 10 to 12 hours on the test because I was not confident about solving the problems. I needed to read the chapters, plus review my notes in order to solve the test problems. I started over several times on each of the problems because the answers did not feel like they were the correct.

I organized my time by taking two-to-three-hour breaks because of family commitments, plus I needed a break after spending several straight hours on the test. Most likely I would not change my process of time allowance, but be more efficient at the process of solving the problems. I very much enjoyed the level of details this course is providing and I can see exactly where the subject manner of this course is applied, plus used to design and construction not only U.S. Navy ships and submarines but in designing piping systems for residential and commercial structures.