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Coming up next on ATETV. Water treatment technology.

Water is depleting all over the world and we just have more and more need for fresh drinking water.

Information Technology Security

The information degree security program is designed to teach students like me to go into various businesses to help them secure their networks against different types of attacks.

And fuel cell technology

I want to be in on the ground floor of some of the latest, greatest technology.

Now on ATETV. From across the country to your own backyard, ATETV shows you the many advanced technological education opportunities available at your local community college.

Do you see the glass as half empty or half full? If it's a glass of clean drinking water, you might just see it as your next career. Let's take a look at the world of water treatment technology.

Water is depleting all over the world and we just have more and more need for fresh drinking water.

Everyone needs water and we have limited supplies of water. Obviously if you have the ability to take salt water, which we have much more of, and convert it into drinking water, then there's a resource there that has plenty of water in it. Desalination has been around for a long time but this is a new facility and basically we take in brackish water, salty water, water with high conductivity in it. Water goes through a treatment process to remove any bacteria and then high conductivity water goes through a reverse osmosis system which removes the dissolved salts. Then from there we disinfect the water for drinking water purposes.

To be an operator I like to have people that have a basic fundamental understanding of water treatment and you have to be analytical and you have to be detail oriented with certain perimeters and you have to make your water with then.

There's a lot of data collection. You have to take a lot of samples. You have to record flows. You know how much water is coming into your plant, how much water is going out of your plant. How much is being filtered. How much filtrate is being taken out of the system. I mean you do some maintenance, you know, you have to work on some pumps, you have to learn different types of valves you know and you need to have some computer skills. It's a state of the art plant. It's you know top of the line. It's 80 million dollars worth of equipment. Because I had the education I had from the school, they were very comfortable with you know taking me on.

It is an interesting field. I think it's a field that's growing and I think that there's a lot of opportunity for people that are interested in this type of work.

The world will always need safe, clean drinking water. That means the engineers who are trained to help produce that water will always be in high demand. If you're interested in the environment and helping people, be sure to visit your local community college for more on the water treatment technology programs they offer.



It seems that every day we hear about another company or business who's had their computer system compromised by hackers. As more and more cyber security threats pop up, the demand for qualified IT security technicians will continue to rise. Let's meet Sean Coughlin who's studying to begin a career keeping data safe.

Here's your router. It will go through the firewall.

Yeah but I don't know where these came from here

My name is Sean Coughlin. I go to Springfield Technical Community College and I'm in the Information Security Degree Program.

The port on the firewall of the router's connection

The information Degree Security Program is designed to teach students like me to go into various businesses to help them secure their networks against different types of attacks. Your information is stored on a computer system somewhere. Most people think oh I don't use online banking, I don't put my credit card into websites, that it doesn't affect them, but that's not true because the businesses that take the information from them do use computer systems and do use the internet. So the need for security professionals is increasing.

Then you're gonna start setting up firewall rules on your router and firewall rules on your...

I've been interested in computers for a very long time. I started with a Commodore VIC-20 when I was a kid. It was always just a hobby. I was a commercial flooring contractor for 18 years. I stayed in floor covering for as long as I did because the money was there, I was self employed, there was a lot of freedom but my desire to work with computers finally took over and I made the change and that's how I got into this field.

You have to take networking classes, that's bare bones. You've gotta have that. They give you some of the more liberal arts as part of the program, as you would expect.

Connecting a LAN to the internet

And now as this course is related, this is specific to security.

So in the Juniper program you're gonna have to put in the route, a static route, are you in Juniper?

Working on actual Juniper routers, this is really hands on. We're in here dealing with the physical equipment, the cables, everything.

If you don't have the crossover cable, what you do is you put this in the middle.

Oh it's working, it's working.

Every single job you look at, they don't want to see just school, they want to see experience. And to be able to say I've actually worked on the device and I've configured it, I've taken it out of the box brand new, I've put it together and I got it working, that's a solid foundation that employers want to see.

Companies in all areas of business need to keep their computer network safe and they require skilled IT security technicians to do it. If you're interested in a career in information technology security, be sure to visit your local community college.



Looking for a career in a cutting edge field? Want to have the work you do be part of the renewable energy movement? Then studying fuel cell technology could be for you. Have a look at this fuel cell program happening at Stark State College.

Fuel cells are the future. The industry is so young, careers offer a great potential.

A student that studies fuel cells is gonna have a wide range of opportunities available when they graduate. Technicians that are needed within the lab itself to be helping to build the technology to scientists that are figuring out how to solve the challenges within the fuel cell industry to the managers that are then running the companies.

Where are we gonna get this water that we need for it?

From building the fuel cells to understanding the properties of fuel cells and creating new materials to increase the performance of the fuel cells, graduates have to have a desire to learn a new technology that's not in industry today.

Did you blow that out before you put that in there?

We look for problem solvers, especially with a small company like ours where we have a lot of technical challenges. We're really looking for someone to take on a problem and to attack it.

Now you're motor is higher

Since a kid, since I was five years old I always tore stuff apart and tried to fix things.

You're able to come in, get into an activity that has meaning they can put their teeth into and I think if I were a young person that's the kind of thing that I would be shooting for.

My interest in it is mainly because I want to be in on the ground floor of some of the latest, greatest technology.

There's gonna be expansions that are happening, whether it's in sales, marketing, engineering, technicians, it's starting up a whole new infrastructure basically.

This loop here with that valve

They're decent high paying jobs with a lot of responsibility and a lot of accountability. It gives students an opportunity to work on a type of technology and in an industry that has not already been predefined. So they get to work on new challenges and they get to develop things that no one else has developed before. It's not like you're walking into something that's done and dusted. You know you're actually walking into something that has a lot of opportunity in front of it.

Fuel cell programs like that one not only respond to industry needs, they're often ahead of them. That means those students will be on the ground floor for exciting innovative fields and high paying career paths.

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