

**Transcript:** [Episode 18 / January 18, 2010](#)

Coming up next on ATETV, wind energy technology.

Wind energy is a very efficient way to generate electricity, which is something our country needs a lot of

And water treatment technology,

CB: How much time does it take to get that water into a glass from home?

MP: Less than a day

CB: Wow, that's really fast.

MP: Yeah, the equipment's unbelievable

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.

Are you thinking about a career working with renewable energy and the technology involved in producing it? Then check out this wind energy program happening at Laramie County Community College.

My name is Robert Ouzts. I am currently a student at Laramie County Community College and I am in the wind energy program.

I was a machinist for 15 years and made a career move to go into surveying. I just wanted to go to school.

How come we have a resistance difference in the star winding?

Because the wire size is smaller.

I always regretted not getting my degree when I was younger and now is my time. I was set up financially to do this and wind energy provided that avenue to do it.

I was just surfing the net, got on L triple C's website, they were just initiating the wind energy program and I said, that's for me. I saw a great future. I saw something that America needs. Hopefully I can take it to another playing field.

Wind energy is a very efficient way to generate electricity, which is something our country needs a lot of and Wyoming is prime in the wind energy field.

It talks about specifically the off service break line. I want you to inspect that.

Our class size is 20 so there's a lot of personal interaction between the instructors and the students, very much hands on.

The IST center provides electrical background training and through the classroom it's a great educational experience.

If you're right at the motor where it is, and you want to bump the motor on and make sure that it works, you can put it in a hand mode and verify the thing works.

We do work with the instructor's one on one on most of our projects. They're always around if you have questions and need them answered.

And I think that it's very possible that that is in that volume that we're missing right now.

When we're out working in the labs it's usually with small groups. And also it's a great avenue to have older students because they bring in a whole other aspect into the program with real life situations.

What do we figure out?

Start winding, we have a start winding

I do devote a lot of time to my studies. I try to spend as much time at school as I can without having outside influences. My kids, my wife, my grandkids, they're all happy that I'm doing this.

I would really like to get into a management type position, hence my main emphasis on getting a degree.

They're begging for people right now, the wind energy business, and people all over, from management all the way down to the technician side of it.

This industry's growing by leaps and bounds. I'd like to see more people get into this. The future is very bright in this industry.

Programs like this are popping up at colleges all across the country and for the job opportunities in renewable energy, the skies the limit.

Be sure and visit your local community college to see if they offer programs in wind energy technology.

Have you ever wanted to know where clean drinking water comes from or how fast you can turn salt water into fresh water?

I recently visited with Michael Poitras, a community college student, who showed me how his internship at a desalination plant, put him on a whole new career track in water treatment.

CB: Hi Mike, how are you?

MP: Good, how you doin, Caroline?

CB: Good, so what is this place?

MP: This is our intake structure. This is the river that we take our water from, that we take the salt out of. This is brackish water where the ocean water meets more fresh water that comes from the streams and rivers, you know that deposit into this river. In desalination plants that's usually the type of water that they look for to use for drinking water cause it's a less concentrated salt content. There's less salt from the ocean in this water because of the fresh water.

CB: So did you learn all the skills that you use here from community college?

MP: Many of them, yes. I did this through an internship, which they try to encourage at the school. When this plant was opening up, I started off just as an unpaid intern and then became a paid internship and actually became a fulltime job from there within a couple of months. Linda, the plant manager here, was very flexible as far as my classes and working it in with my hours here at the plant.

CB: So your life just completely turned around from what you were doing?

MP: Absolutely. This is nothing like what I've ever done before. I had no knowledge of this stuff at all when I started off. A lot of the equipment here is new and you know it was a learning process for everyone but more so for me, I never did any kind of water treatment. But the stuff that I did learn in school was a big help to me learning stuff here as well as what I learned here made a lot of sense of what I learned in school so

CB: So this water here, that's where it all starts? That's what we're eventually drinking at home?

MP: Yep, this is the water that they're eventually drinking. This is actually the water taken right from the river, this is what we start with. As you can see, it's got a little color to it, not to mention the things you can't see but this is where our equipment comes in and the chemistry and all that that takes everything out of this and eventually you'll have crystal clear water right from this.

CB: How much time does it take to get that water into a glass from home?

MP: From this water to clean water probably takes less than a day, within hours.

CB: Wow, that's really fast

MP: Yeah, the equipments unbelievable.

CB: So what are these, I don't even know what to call them?

MP: These are called trash racks. This is just the very beginning of the filtration process. It takes out all the large items that come, tin cans, anything like that so it doesn't get stuck in the pumps and damage the equipment. And then as you can see as you go through, the screens get smaller and smaller and then we have these filters called Johnson screens, where the screens are even smaller than that. That's as much as gets done before it gets pumped.

MP: So this big tank up in front of us, this is our raw water storage tank. This is the water that we take in directly from the river.

CB: Wow

MP: We pump it up to here and from there we take it into the building.

CB: That's a lot of water

MP: That's a lot of water. Yeah, it's actually about 3 million gallons. This is the main plant. This is where everything happens, inside this building. You know this is actually a chemical fill station right here where we take in all the chemicals.

CB: So this is where all the magic happens?

MP: Yeah this is where all the dangerous stuff is.

CB: Okay so where are we now?

MP: This is our zenon ultra filtration. This is the, like the heart of this water plant. This is where all the impurities and bacteria and the metals and stuff like that are filtered out of the water, everything except the salt. This is the filtration we use before it goes to the RO system, the reverse osmosis. It's a smaller filtration that actually takes out the salt particles.

CB: How long did it take you to learn everything? Did you have to take a lot of science courses at community college?

MP: There were a few, there was some basic chemistry and then there was some environmental chemistry. You have to learn about the water that's coming in and what the regulations are, you know what you have to take out of the water before you put it into a distribution system and they do have classes specific to that.

CB: So what goes on in this room?

MP: This is our laboratory where testing on the water quality tells us if our chemistry's right, if we're treating the water the right way, if our filtration is working the right way.

CB: So do you have any samples here that I could have a taste of?

MP: Actually yes, right here. Once it's tested we taste test.

CB: Thank you very much.

MP: Try that

CB: That's good

MP: It looks a little better than where it came into the plant, right?

CB: So in the future, as the world gets more populated, is this field gonna be more necessary?

MP: Absolutely, yeah, right now our fresh water supplies, they're depleting more and more everyday and so many areas have salt water supplies available to them, you know from

running rivers to oceans and this can be used, you know, to give people water that just never had clean drinking water before, you know and they're just making it a lot less expensive than it used to be. It's more feasible now and they're able to do it with much smaller systems now too so

CB: So do you think more people are going to be going to community college to get the training for this field?

MP: They should be. It's a really interesting field and there's such a need for people that can run this type equipment and take the salt out of water. It's just getting to be used a whole lot more now. With a majority of the world's water containing salt, desalination plants like that one are critical to providing clean, drinkable water.

Mike is on a great fast moving career track and you can really tell that he loves what he's doing.

If you're interested in learning more about water treatment programs, be sure to visit your local community college.

And for information on anything you've seen today, explore our website at [ATETV.org](http://ATETV.org).

Thanks for watching.