

Transcript: [Episode 36 / May 24, 2010](#)

Coming up next on ATE TV, laser and photonics technology.

If you like science and math, this is just an exciting field to get in to.

Geospatial technology.

Geospatial technology is taking known location attributes from the real world and putting them on paper making a map out of them.

And alternative energy technologies.

Our students are actually taking the used oil from the kitchen. They are producing biodiesel with that. We received enough funding then to convert our lawns equipment to operate on biodiesel.

Now on ATETV.

From across the country to your own backyard, ATE TV shows you the many advanced technological education opportunities available at your local community college. Did you ever want to know when all that math and science you learned in high school would come in handy? We will just ask the students studying laser and photonics technology at Central Carolina Community College.

It is 472.83 nanometers. We have an infrared pushing out 950.59 nanometers.

If you are interested in lasers focus on your math and sciences because those are the things that will help you alot in the laser field.

This is the visible light here and this is our reading at 496 nanometers, we'll drop that down to one more. There it goes there.

If they want to come into this field and they know that this is what they want stay on top of your math. If you can do that. You can make it through the program with no problems. I think it is a good program for anybody to come in to right now especially with the economy like it is. It is a program that is going to be here and you will always be able to find a job.

If you like science and math, it's just an exciting field to get in to. We give them a placement test. If they do not score enough to get into the program, they can take courses to increase their knowledges in whatever area in order to enter into the program whether it is math developmental course or English developmental classes.

They have lenses and they put all that together and beam splitters and polarizers and things like that.

We do a lot of math here we take trig and trig functions, a lot of algebra. I like technology. I think it is cool. I have good math and science scores whenever I take my placement test, so that was a plus.

So, when the diode isn't conducting, it is not taking away.

It's a lot of equations and angles and a lot of theorem, so you need to make sure that you remember them and study them.

Alright, half it and we get 532 nanometers, okay?

You have to have an understanding of science and understanding of math entering into the program. I mean, we can start out at ground zero teaching, but it is a lot better if someone comes in with some background and understanding.

It will all payoff. If you're struggling with math in high school, right now if you just study hard and work through, it will all payoff. It is not going to disappear.

Now, we have got this cool looking blue light. We are looking at 474.97 nanometers. It seems like it would be climbing up clockwise it'll get stronger on both sides.

You think that you're never going to use it, but when you get in a field like this and you are going to need it.

Pushing out 950.5 nanometers.

Community colleges can help you get your math and science up to speed and some even offer courses in laser and photonics technology that can prepare you for an exciting high tech and high paying career. Have you ever used a GPS device and wondered how all that information got in there. Let's meet Dave Nicholson who is studying GIS or Geographic Information Systems at Central Piedmont Community College to find out more.

Hi. I'm Dave Nicholson from Central Piedmont Community College, GIS program. We are going to collect some data on some manholes. We'll get the GPS coordinates on a manhole and we'll take that back and put that back into the database and add that to a map, so now we have you know an actual known location where that manhole is.

And now, I am going to click on the attribute button.

When I got out of high school back in the 70's I ended up going to the Navy and a fire control technician led me to commercial electronics as a two-way radio technician, work for a paging company. I have been laid off a half dozen of times in it, in that field and it is time to do a career change and this is what I chose.

Look at the manhole cover itself and see if you can see if it is storm water, waste water, AT&T utility, whatever it is add the attribute for that.

Geospatial technology is taking known location attributes from the real world and putting them on paper and making a map out of them.

Dave, do you remember how to do it, face down.

I have always enjoyed messing with maps. I'm in the ham radio and you know you got to look at the map to see where the guy is you are talking to, so it is just kind

of evolved into that.

Scanning in geo referencing and then loading the trimble data.

I learned about the program at the Employment Security Commission, they had a sign-up saying study GIS and Central Piedmont had a good curriculum so that is why I chose them. Well, right now I am working on a couple of certificates, the C1 and C2 certificates and I should have enough courses after these two semesters I have taken to have something by the end of this semester. Maybe an internship this summer and then something that will lead into a full time position starting this fall.

And enter the attributes of what I have got here it says it's a sanitary sewer. A lot of these jobs are going to be when you come knocking on my door and say hey here I am. They will find something for you to do.

Okay, I am done.

Dave is really enjoying his time at community college and he is on track for a hands-on internship in an exciting career. If GIS is something you may be interested in, be sure to check out your local community college.

Alternative energy sources like solar, wind and biodiesel are becoming more and more common and the career opportunities in these fields are exploding. Let's see what Sinclair Community College is doing to prepare their students to meet the growing demand.

It is important that they understand whether they go into this field or not. Energy and its uses and the benefits of being responsible with it, the advancements have been many in the last couple of years and prices have come down a lot for alternative energy. Wind mills and solar panels and that sort of thing. Biodiesel to replace regular diesel, ethanol to replace regular petroleum-based gasoline. Our students are actually taking the used oil from the kitchen. They are producing biodiesel with that. To use biodiesel it has to meet a certain quality standard so that it will be used in equipment without damaging it. It became a real educational tool when they were able to test the biodiesel they were producing to make sure it was within the required standard. So, it was able to be used in our equipment. We received enough funding and to convert our lawns equipment to operate on biodiesel. The students are learning how to process biodiesel they are learning about alternative fuels, they are learning test procedures and those test requirements.

Worked with the biodiesel, the solar energy, even hydrogen power for vehicles. I am just glad that Sinclair is so on top of their game.

Are you interested in learning more about alternative energy technologies, be sure to visit your local community college for programs they offer. And for more information on anything you have seen today, explore our website at ATETV.org.

Thanks for watching.