

Transcript: [Episode 25 / March 8, 2010](#)

Coming up next on ATETV, fuel cell technology.

We bring it to not only just working problems out on paper, but real life applications.

And rapid manufacturing.

Rapid technologies allows us to take three dimensional computer data and create a real world object out of that in a short amount of time.

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. Looking to get a different classroom experience. Want to get in on cutting edge technology?

Programs in electronics engineering like the fuel cell program at Stark State College are preparing today's students for the high tech careers of tomorrow. Take a look.

Our fuel cell program here at Stark State College it's a two-year associate degree that is part of the mechanical engineering program. They have three to four levels of mathematics. They have chemistry, they have physics, and then they get into the fuel cell curriculum itself.

We have four fuel cell courses, the mechanical engineering technology, alternative energy and fuel cells. The next class after that is specifically fuel cells. The following class after that is fuel cell systems, so these are all significant areas students learn in. But also in it are some of the alternative energies.

We have a course that gets into some wind and some solar, different biomass applications. So, it gives you as broad of a picture as we can paint right now because this field is constantly changing. And we bring it to not only just working problems out on paper, but real life applications.

There is a lot of hands on labs for like DC and AC circuit analysis that will keep you busy with the labs.

The beauty of the two-year course is just the hands on learning component. You're in the labs, you are putting all the talents of playing the parts together, seeing how they all work together. It doesn't make a whole lot of sense just from the book. You really need to get your hands on it and see it working.

We also have a one year certificate, perhaps they have been in the field and they have some mechanical engineering skills or even electrical engineering skills, they could come back and take our fuel cell courses to actually move them in a little different direction in their career.

I worked ten years as a master technician for Acura and then ten years in management. I feel that it is going to be used in many areas including the automotive industry. It is just a great way to get exposed to some of these new technologies. It encompasses a lot of different fields

like materials engineering, mechanical engineering, chemical engineering, and electrical engineering. This can be hard for you initially because it involves knowledge from so many difficult fields. And when you come straight out of your high school, you are just trained in math and normal science, but you have to be patient, stick to the program and not get discouraged because there are so many different fields in which you can go and apply this knowledge to.

We are very tight with business, so we listen very closely. What are the skills that they need and then we deliver that to the students.

Stark State has a very focused approach of aligning educational curriculum with industry needs. So, I think that's what continues to give us a little bit of an edge just because we are at the forefront of what is happening in this arena

Schools like Stark State are giving students the skills they need to succeed in a variety of technology fields. If you are interested in finding out more about engineering programs near you, be sure to visit your local community college.

Saddleback College enriches its students by providing high quality courses and programs that encourage success in academic degrees and career technical certificates. Let's have a look at the programs they offer in rapid manufacturing.

We are going to produce some silicon casting. Let's talk a little bit about different kinds of silicon.

Rapid technologies allows us to take three dimensional computer data and create a real world object out of that in a short amount of time.

You are prototyping it you are making an inexpensive model of something and so you don't spend all the money building something that you know, after you are done making you realize it wasn't even that functional and it won't work.

Keep a nice ribbon going, nice and even.

For industry to be globally competitive, they need people with these skills that can drive a product to market in a very short period of time.

So, what we are going to do now is we are going to turn the vacuum on.

Many of the companies particularly the Fortune 50's that are involved with our operation out of Rapid Tech are interested in bringing their high end manufacturing design and tooling back from overseas which is going to create very high wage jobs here. And there is a shortage of technicians, so we are in the right place at the right time to help.

I think it is absolutely critical for any college program to work with industry. We can study all the theory we want, but until we can connect that to what is actually going on right now in industry, it doesn't have the value to the students to learn so they are ready to hit the ground running.

The equipment you see in our laboratory is the same equipment industry uses and we want the students to be able to use it. We want them to be confident and we want them to be proficient.

I have a much better understanding of what this stuff is, so when I go out in the field I can tell, you know my boss, hey, there is a better way to do this, you know, let's print it out before we go out and spend like 30 grand. why don't you spend a grand on an actual physical model.

Okay, open the door, then the plastic shell right over the circle.

I see the pulse of the industry. I know where industry is going with this technology, the type of technicians that it needs and the type of skills and knowledge that I need to teach my students to make them productive employees for companies.

Okay, now we are going to move the part and all the powder around it up into the cylinder.

We have structured this program as a small company. We put them on teams of five or six.

It is very important for students to be able to get along with their peers. They have to come up with a product that they think is manufacturable and sellable. They have to do market research, develop a business plan, do multiple iterations using the different technologies in the lab and then they present their report to an industry panel that we invite in at the end of each semester.

The advisory board is made up of Fortune 500 companies, small business owners, patent attorneys. And as a result, we have had probably I would say conservatively 12 or 13 in just the last two years that have come up with commercialized products or running businesses now.

We are having our students farmed by medical companies, medical device companies, irrigation companies, design companies.

We have had offers from companies to hire our entire class, sight unseen because of the way we go about teaching technicians how to work in an industrial environment.

Today, I actually--instead of cutting--

No, you should cut it.

Oh, okay.

So, you can see it is cut in just a little bit and just hasn't gone far enough.

What I learn from the projects we do with companies, we turn right back around and filter it through the classroom. Okay, here is what the company is going to be looking for in the next three years for employees. So, let us incorporate that in our instructional program and in our degree and certificate programs and let us give those students the skills that these employers are going to be looking for.

With Saddleback College's partnerships with industry, students there are getting a state of the art education and are job ready when they graduate. If you want to find out more about programs like Saddlebacks or want more information on anything you have seen today, explore our website at ATETV.org.

Thanks for watching.