

**Transcript:** [Episode 3 / October 5, 2009](#)

Coming up next on ATETV, a look at one of the countries largest process technology programs

The alcohol is a low temperature boiler so it's gonna go to the top and vaporize

Becoming a biomedical technician

I mean I don't consider it a guy's field. If you're interested in it then you might as well pursue it.

And the expanding world of biotechnology

Nationwide there's a need for bringing a more diverse population into the sciences.

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.

Does a college program that offers you the chance to work on an industry scale oil refinery sound like something you want to get your hands on? Well process technology programs, like the one you're about to see, gets students learning and working in the real world.

Remember this cause it's gonna be on a quiz somewhere, grease is an oil with an additive.

This is the same type of equipment that you see in refineries and chemical plants.

Process technology is taking material and turning it into something useful, for instance oil into gasoline, petro chemicals into fibers for rugs, pharmaceuticals, even taking barley and malt and turning it into beer.

You see this jar over here with the red material in it, that's a mixture of alcohol and water but alcohol and water have different boiling points.

CAPT is the center for advancement of process technology. We are a consortium of 55 partner colleges and industry.

The alcohol is a low temperature boiler so it's gonna go to the top and vaporize.

What we have done is we've set down face to face industry and they said we need students to do the following and they gave us a giant list of they need to do A, they need to do B, they need to do C, here's what we want them to do. Then we developed our curriculum, our textbooks, our instructor guides, our online courses, around that so that when the student takes a CAPT course, industry is getting just what they want.

Condenses those vapors back into a liquid

We have roughly 500 students in the program. A very high employment rate, 90 to 95 percent of our students get jobs coming out of this.

Should we add more heat?

It's almost difficult to keep them in. Some companies actually like to come in and raid our students and get them before their degrees.

Boy, you're on top of it today. I'd hire you as an operator.

It's basically the baby boomers are getting old and retiring and the companies are looking for new employees to come in and take over those jobs.

Are y'all gonna gradually go up or are y'all just gonna stay at 15?

Typical student is 27 years old, has been out of high school for roughly 10 or 11 years. Most of them are hands on type students. They like to work with equipment and that's exactly what the companies are looking for. These are not really desk jobs. They're out in the cold and the heat but they also have to learn how to work with people because working with the machinery is only a small part of what they do.

And that's coming from our steam.

So when we give them an education here, we're teaching them psychology and sociology and speech and English so the companies get again a very well rounded person out there.

We have one of the largest programs in the country, if not the largest program in the country and we are one of the only colleges in the country that actually has a unit like this. We make the students run this thing. We run it for them the first time and then we never touch it again after that.

Now you can't imagine how many times I told myself, I wish I had been able to do this in college because I had lots of theory but I had no practical type thing. This is all practical application. It would have made me a better engineer off the start if I could have done that.

Most of our students, they either work like all night and come to school during the day and they're working at jobs that pay \$8 to \$10 an hour and all of a sudden they get a job that pays \$30 an hour and has medical insurance and a 401K and life insurance and dental insurance, it changes their life, you can't imagine. And a lot of us like to say we're really in the life changing business, we're not in the education business.

With College of the Mainland's commitment to teaching students the technical skills that the industry needs, the graduates of that program are headed towards rewarding careers as process technicians.

You don't have to be a nurse or a doctor to have a career in the high paying medical industry. Engineering technicians who install, maintain and repair equipment, are vital to the medical field and their work helps to improve and save lives every day.

My name is Monica Colone and I go to Benjamin Franklin, this is my second year here. My major is medical engineering. Hopefully I'll leave here with a job in the hospital field and I'll be a biomedical technician.

A biomedical technician is a technician that fix's medical equipment necessary for the hospital to function. It's considered a guy's field. I mean, I don't consider it a guy's field. If you're interested in it then you might as well pursue it.

This one is DMM, digital multimeter. This one is probably the easiest piece of equipment to work with but it's pretty expensive.

I'm probably one out of three girls in this classroom right now. So it is a little challenging.

We also have this piece of equipment. It measures current and voltage. We use the little banana clips there.

We have to know a lot of electronics and math and basic communications with other people because you're going to be working as a group when you leave school. You're going to be working with different people, fixing different equipment and basically your first year of work is going to be learning the equipment and talking to the people around you.

I'd say my strong point is math. I'm really good at math and since science has a lot to do with math. It just kind of comes easier to me. Some people are better at writing. I'm just good at math.

Today we was using, we were getting used to the ICD, the debugger, putting it onto a demo board and simulating what happens. We're just seeing the affects of some of the codes when we debug it and seeing the affects of what it has to do with the demo board.

If you're interested in any type of electronics or anything that has to do with technology, this is a really good school if you like a lot of community. But it's very interactive with each other. We have our academic support centers and times you can meet with the teachers, which I can't say for many schools. So if you are looking for good interaction with teachers, a good student to teacher ratio, then this probably the school to go to.

Biomedical technicians are in high demand and programs offered at community colleges across the country are preparing students, like Monica, for rewarding engineering careers.

Located in one of the countries biotechnology hot spots, Southwestern College in San Diego prepares students to meet the growing demand for biomedical technicians and they're also helping to fill the biotech industries gender gap.

San Diego is the hub of biotechnology in the entire country. We have over 500 biotechnology companies in San Diego, all in need of entry level technicians.

There is a deficit of people at these basic laboratory research positions in the country, for laboratory technicians.

The biotechnology program at Southwestern College started in 1999 and our idea was to increase the number of technicians available for the biotechnology industry, from our population.

So this is where we take our science classes, the department and we also have biotechnology classes here, we have lecture and lab.

Our student population is primarily women. Since the beginning in 99, we have seen about an 80 percent female involvement in the program. Here at Southwestern College we take a combination of labs as well as lectures so this way students can learn not just from their textbooks but also from hands on experience.

In the past women have been under represented in science but I think that trend is changing nationwide. We see a lot more women and of course just the nature of our population here in the South Bay, is predominately Latinos. But the Latino population is still very under represented in all the sciences and biotech is no different.

Nationwide there's a need for bringing a more diverse population into the sciences. So our thrust is really to increase the number of students coming in from the community and hopefully to increase the number of these under represented students in science and to bring them into the fold of science in general and our particular area happens to be biotechnology.

Well I was originally accepted to the University of California at San Diego as a biotechnology student but I chose instead to attend Southwestern because I know for a fact that we have a great biotechnology program here.

If you're interested in the biotechnology field, make sure to check out your local community college to see what biotech programs are available to you. For more information on anything you've seen today, explore our website at [atetv.org](http://atetv.org).

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