

**Industrial Electronics**   Robotics   Plastics  
Machine Tool   Welding  
Aerospace   Computer Aided Design  
Chemical Process   Aviation Maintenance  
Biotech



## April Wooten

Northeast Alabama  
Community College

### Industrial Electronics Student

My dad thought that it was awesome that I would follow what he did because he went in the Navy and went to school for electronics. But my husband's family thought, "Oh my lord, it's a girl and she'll never last."

*(April has currently finished courses in alternating current, direct current, solid state electronics and digital electronics.)*

I got a call from TVA, went in and took a test, and I'm waiting to hear back from them.

The last job I had was at a large home improvement chain store and, you know, you gross, I don't know, \$18,000 - 20,000 a year. TVA's apprenticeship starts out at somewhere between \$40,000 - 45,000. That's a big leap for my family, a very big leap.

I actually failed English in 9th grade and had to retake it my sophomore year. But when you come to college that changes. There's not somebody standing over you saying do this and I want it like that. It's you working at your own pace, and they help you along, and all of the people in here talk to you, and help you and you make a lot of new friends and things like that.

I think at times you stop and question yourself, "Am I gonna pull this off? Am I gonna make it through this class?" But you have to know that that's what you want.

That's my biggest thing. I want my kids to look back and say, "Look at what my mom did at 27." And I want them to think "If she can pull that off, what can I do?"

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## Randy Moon

### Wallace State Community College Machine Shop Instructor

We teach a 4 semester program in machine tool technology and a 2 semester program in CNC (Computerized Numerical Control).

Students first learn on manual milling machines and lathes, then they work in the computer lab. After that we take them

to the CNC machines and they learn how to take a print and write a program to put in the computer. Then we set the CNC machine up and produce a part to our blueprint specifications.

The advent of the computer into these machines has really increased both the production and the productivity. Adding them to the manual machines, we can now produce almost anything that an engineer can draw up.

We've seen an influx of calls from industries wanting machinists to fill the void that retirees have left. We can't keep up with the new jobs in this area let alone the jobs that people are retiring from. You walk into a machine shop in North Alabama and you see more people over 50 than you do under 30. Companies are wanting to bring in young blood, young machinists to train with the older machinists so they don't lose the skills that the retirees are taking with them.

A young man or woman in this field can start out making \$13 - \$14 an hour. I try to tell my students not to get hung up on what they're going to start out... look at what you're going to be making in 3, 4, 5 years down the road.

Who's a candidate for this? There's a lot of thinking, a lot of hands-on... if you like to work with your hands, if you like to build something, put it together and watch it work, you'll enjoy this type of work. I've had students come in who struggled with math in high school and have done really well in this field, and I've had students on the A/B honor roll in high school who didn't do well in this. It's somebody who enjoys working with a project from beginning to completion, someone who gets a feeling of satisfaction when they've built something and then they see that thing on the moon, or see it up in the air flying an airplane.

When people ask "What do machinists make?", I tell them "Anything from a gem clip all the way up to a space shuttle." Everything that is manufactured in the United States or in the world today, well, a machinist has had their hand in, helping with the production of that part!

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## Tom Kirk

### Enterprise Ozark Community College Dean of Instruction and Student Services

There's a tremendous need today for Aviation Maintenance in Alabama, the Southeast and nationwide. We're seeing this industry explode. We're using some of these aircraft many, many times beyond the number of hours they should have been used. And we're seeing a lot of maintenance

and upkeep as well as some manufacturing going on with the industry. It's what we like to call a phenomenal growth in the industry.

This country does not move without aviation; aviation does not move without technicians. I think young folks are looking for something that makes a difference. This is an opportunity to go out there and do something that makes a difference everyday. You can go home and say, we had a great day, our aircraft went up, our people flew out safely and came back home.

In Ozark, Alabama, just a short distance from our college, we've got Fort Rucker, which is the largest accumulation of rotary wing aircraft in the world. A student leaving us and going to work can start out at \$23.05 an hour after two years of school and certification with the FAA as a maintenance technician. Within 5 years they're at \$30 an hour.

That's a tremendous income for a young person with 2 years of college. Much better than what you might even expect with some 4 year degrees.

We have that aging workforce, exactly the same thing we're seeing in other types of manufacturing and maintenance applications, and a large portion of them ready to retire. At the same time we're seeing the industry grow. We're trying to replace the folks that are retiring and at the same time provide the new workers. So we've got a lot of challenges and a wonderful, wonderful opportunity for young folks, both male and female.

There's a young man that comes to my mind, a single father who came through the program, two years; he went to work in the industry, at that time at about \$20 an hour. I saw him a couple of weeks ago and he's been out there about two years and he made about \$108,000 in 6 months at the job he's at. He says "I used to have a job, now I have a career."

*That's* a success story.

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## Tim Pickens

### CEO, Orion Propulsion

I'm looking for people with street smarts, you know we don't need extreme book smarts, we need a little of both, and that's really hard to find nowadays. We like technical folks who come in here and we give them a mountain to conquer and they go conquer it. You know we all need to have fun at what we do.

(As a young man) I knew (tech school training) would come in handy with more of the mechanical things I wanted to design and build. You know, I built things like hovercrafts. I built a hang glider that almost worked.

I built a jet-powered scooter. It folds up, you can put it in the trunk of your car. It's got about 22 pounds of thrust, you know, it'll push you down the road about 30 miles an hour. It's throttleable... it's like something out of James Bond.

We test and build rocket engines here so not only are we going to maybe ask (our employees) to build some of the components, but we're also going to ultimately ask them to be involved in the hot fire testing of rocket motors. So there's fire and there's smoke and there's a lot of stuff in between. *(They've recently designed, built and tested 6 different rocket engines.)*

It's not just the manufacturing and machining of components, it's also the fabrication of the structures, and the wiring and all the things that it takes to make fire and smoke.

We go out, we push a button, propellants flow through the system and ultimately there's fire and smoke, lots of noise. Believe me if things aren't done right... it's a bad day; and in the rocket world you'll know it right away if something didn't go right.

It's very boring to just do things on paper. You know, if you really want to live you get out and build it and you try it and you just explore things. I don't think there are any limitations to what a person can do if he just puts his mind to it. I have a high appreciation for the work the guys do here with their hands out building stuff.

You'll never ride a slideshow presentation to space. Ultimately, somebody's got to cut some metal, we gotta build something, test it and, if everything goes right, we're gonna go fly it.

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