

You're a what?

Automation Technician

Many people think of automation as laborsaving technology. But it sure keeps Jim Duffell busy.

Jim is an automation technician. For the past 9 years, he has spent his workdays monitoring production equipment for a food manufacturing company in San Antonio, Texas. The company's products—mixes for biscuits, enchiladas, and gravy—are manufactured using fairly typical automation processes.

Defined simply, automation is a technique for making a device run or a process occur with minimal direct human intervention. But the functions and technologies involved in automated manufacturing are complex. Nearly all functions, from orders coming in to products going out, are subject to automation. The technologies include mechanical, electrical, and computer, among others.

And it is the job of automation technicians like Jim to monitor, troubleshoot, and repair these complex systems. "I go from one piece of equipment to another," says Jim. "I'm on my feet most of the day."

In the company where Jim works, ingredients for the mixes are blended, stored, and packaged by machines that are controlled by computerized devices. These devices, known as programmable logic controllers, regulate the weight and quantity of ingredients, transmission of mixes to storage areas, and packaging and shipment of final products. Additionally, customer order information is automated to reduce excess inventory.

When production runs smoothly, Jim concentrates on preventative maintenance and upkeep. He uses a variety of instruments to ensure that all equipment is operating within a given tolerance, or range. For example, he may use standardized weights to make certain that the appropriate amount of each ingredient in the biscuit mix is being dispensed.

If part of the process isn't working correctly it can be an alarming experience—literally. When a piece of equipment begins functioning outside its assigned tolerance, an alarm sounds. A first alarm makes Jim aware of a problem but allows production to continue while Jim goes through a logical sequence to isolate, and fix, the problem. He must complete this process before a second alarm sounds, which indicates a more severe problem and shuts down production. Many manufacturing companies operate 24 hours a day. Shutdowns are costly, so automation technicians must be able to identify and solve problems quickly.

Automation technicians may have a variety of job titles, depending on their specific duties and the industry in which they work. Jim's title is "lead production support technician." Other common titles include "control technician" and "instrumentation technician." But whatever they are called, automation technicians need certain skills to perform their jobs.

Critical thinking and problem-solving skills are a must, as is the ability to work well under pressure. Automation technicians are sometimes asked to prepare reports for managers or other nontechnical audiences, so they should be able to write well. And because their job may involve training junior staff, automation technicians need good interpersonal and communication skills. "Nine times out of ten, the work I'm doing is more complicated than the trainees have been prepared for," says Jim. "It's my job to explain the information in a way that's clear enough for those new to this work to understand."

Above-average proficiency in computers is also critical for these technicians, because much of their job involves minor programming. And nearly all automation technology

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involves measurement, so aptitude in mathematics is important.

Many automation technicians have a background in either mechanics or electronics. Jim, for example, started out as a maintenance electrician for another food manufacturer. There, he learned programmable logic controller electronics—and when that company downsized, Jim’s knowledge gave him an edge in applying for his current position.

Like Jim, many automation technicians build their skills through years of on-the-job training. But that training is usually supplemented with additional preparation, such as completing certification programs that are conducted by producers of automation equipment. Jim has completed four such courses related to equipment he oversees at work.

Jim advises prospective technicians today to get a postsecondary degree. “It’s possible to get a job if you have a lot of experience,” he says, “but these days, most companies are looking for people with an associate degree.” That advice is echoed by industry sources, who stress the importance of education. Some institutions offer training specifically in

automation technology, and many others offer coursework that can be tailored to duplicate such programs. Two-year programs are available at some community colleges. Vocational-technical schools, unions, and industry trade associations also offer training.

Formal training should cover four basic areas: mechanics, electronics, computer science, and process control. These disciplines—known together as mechatronics—are the core of automation technology.

The U.S. Bureau of Labor Statistics (BLS) does not collect employment or wage data on automation technicians. Industry sources suggest, however, that the annual wage is about \$50,000, an amount similar to the May 2008 wage for closely related engineering technician occupations for which BLS does collect data. The annual median wage for U.S. workers across all occupations in May 2008 was \$32,390.

Jim’s job can be demanding; he’s often required to put in overtime and to be on call. But he finds his work gratifying. “Every day, there’s a different challenge,” he says, “and every day I learn something.”



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