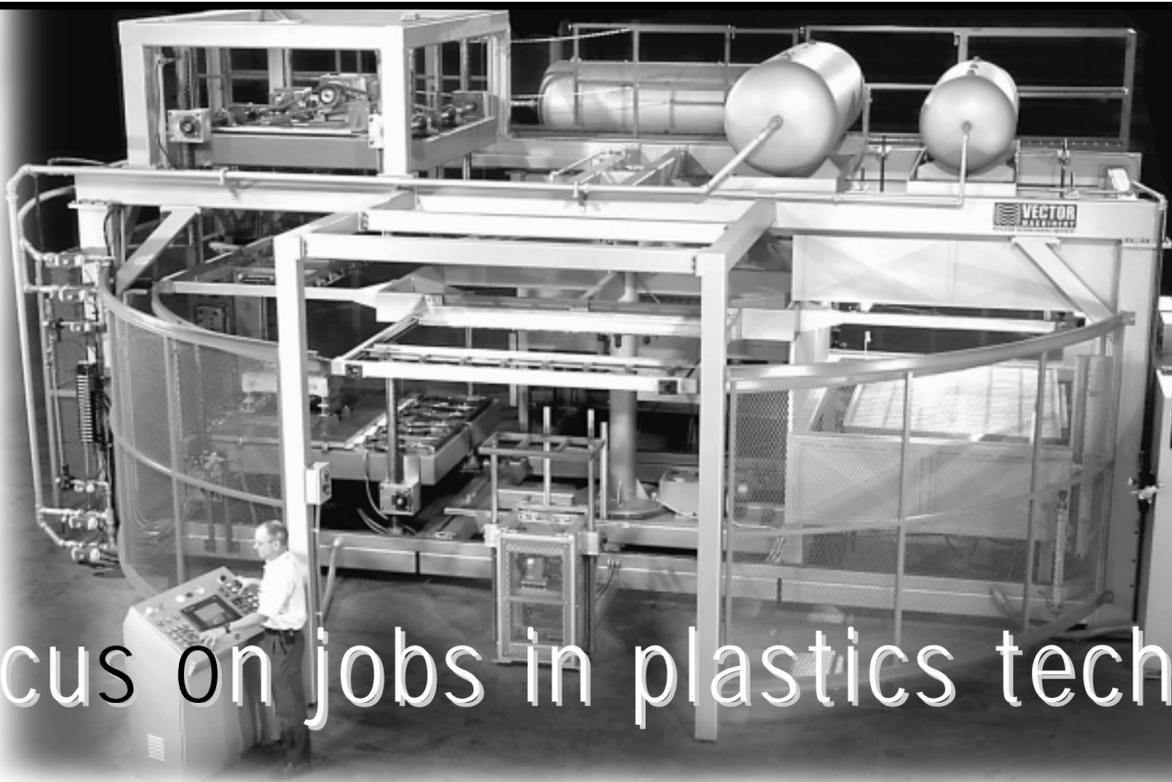


# school to career

## focus on jobs in plastics technology



A plastics technician can control the operations of thermoforming equipment with computer commands.

Every day, Americans come in contact with hundreds of plastic items — from asthma inhalers to kayaks to tool handles. You might wear a Polarfleece® jacket, buy soft drinks in two-liter bottles or mail a package with bubble wrap. Your kid brother or sister might play with plastic action figures. Your parent might cook tonight's meal in a Teflon®-coated pan.

Plastic components keep cars running, help doctors provide health care and protect computer systems. Each year, companies must produce millions of plastic components. For example, Becton-Dickinson, one of many companies that have work sites in the Triangle, is the world's largest producer of syringes. Each week, this company produces roughly 13 million syringes for use in hospitals and other health care facilities.

To produce so many plastic components, companies must automate their production lines. Plastics technicians are the skilled workers who keep those production lines working efficiently.

A plastics technician usually works a nine-hour shift. For most of that time, he or she is working alone. However, there is a 30-minute overlap at the beginning of each shift and again at the end of each shift, with two technicians on duty. This guarantees that production lines continue with no interruptions.

During a typical day in an injection molding production plant, more than 20 different production lines may be operating. The plastics technician may shut down and restart different production lines several times.

The technician uses computer controls to shut down the line, change control settings and restart the line. He or she uses the touch screen or keyboard of the computer to enter the parameters for production. (There can be 100 or more different entries ranging from injection speed to clamp time to barrel temperatures, when raw materials are melted before they are injected into the mold.)

The technician may use an overhead crane or other equipment to change the way a mold is positioned or to replace it with a different mold. He or she may purge old materials from the production line and replace them with different materials.

Both quality control (QC) and troubleshooting are important parts of the job. The technician may measure or test the finished product to guarantee that it meets QC specifications. When there are problems in the production, he or she must determine a solution and make any necessary repairs.

The plastics technician may train other workers, meet with salespeople and prepare reports for supervisors and other company officials. Because the plastics technician must complete many different tasks during each shift, he or she must be a hard worker, able to make quick decisions based on facts.

The most successful plastics technicians are individuals who really enjoy learning how things work. They like math and science, although they may not have been the best students in math and science classes. Mechanical aptitude is helpful, too.

For an individual with these skills and strengths, plastics technology can be a rewarding career. As Americans continue to use more plastic items in their daily lives, the need for skilled and talented plastics technicians will increase.

**EDUCATION** Students can prepare for careers in plastics technology at six community colleges in eastern North Carolina. These colleges are Edgecombe Community College, Johnston Community College, Nash Community College, Wake Technical Community College, Wayne Community College and Wilson Technical Community College.

The two-year associate degree program in plastics technology begins at the student's home college, where he or she studies plastics characteristics, automated systems, manufacturing processes and other topics. The student learns to read blueprints, write technical reports and use computer applications.

In the second year of the program, students from all six colleges take laboratory courses at the new Eastern North Carolina Plastics Technology Center, located in Zebulon. This high-tech facility offers students hands-on experience with extrusion and injection molding, thermoforming and other processes in an 8,500-square-foot laboratory bay.

Most students will choose to earn an associate of applied science degree in plastics technology. However, students may also complete any of four different short-term certificate programs in plastics technology. These four certificate programs are injection molding, manufacturing technology, plastics materials and plastics processing.

The certificate programs are designed especially to meet the needs of persons who are working full-time. Students who begin by completing certificate programs may apply the credit hours they earn toward an associate degree in plastics technology at a later time, if they choose. (Each certificate program includes approximately 16 credit hours.)

The colleges have received support for this new educational program through a three-year, \$800,000 grant from the National Science Foundation and for the Eastern North Carolina Plastics Technology Center through capital funding from the North Carolina General Assembly.

### WHAT YOU WEAR

Plastics technicians choose clothing that is comfortable and rugged. Because they may need to crawl under and around machines, they often wear jeans with work shirts or lab coats. Each technician typically keeps a large toolbox on wheels in the work area.

### JOB IN THIS FIELD

Job Title	Minimum Education & Experience	Average Pay*
Materials Handler Operator	High School Diploma	\$ 8-10 per hour
Technician I**	High School Diploma, mechanical skills	\$10-12 per hour
Technician II**	Associate Degree, entry level	\$12-16 per hour
Technician III**	Associate Degree, 3-5 years experience	\$16-20 per hour
Process Engineer Supervisor	Associate Degree, 10+ years experience	\$20-22 per hour
	Bachelor's Degree, entry level	\$25-30 per hour
	Associate Degree, supervisory skills	

\*In the plastics industry, the workweek is typically 45-50 hours. Overtime pay is earned after 40 hours. Pay ranges reflect averages in the Triangle area of North Carolina.

\*\*There are several specializations within the Technician job titles, including Maintenance Technicians, Process Technicians and Quality Control Technicians.

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### FUTURE JOB OPPORTUNITIES

In 1997, North Carolina's plastics industry was ranked fourth in the nation. There are more than 500 different companies in North Carolina that employ plastics technicians, and opportunities are growing. In 2000, plastics companies in the United States accounted for 1.5 million jobs and \$305 billion in shipments.

### RECOMMENDED CLASSES

High school classes in algebra, technical writing, computer science and mechanical drawing can help prepare students to pursue careers in plastics technology.

### SKILLS REQUIRED

Plastics technicians are problem solvers. They collect, record and analyze data to ensure that production systems work correctly. They use high-tech computer programs and calibration instruments; they also use wrenches and other basic tools. They must be able to follow procedures carefully and to work with little supervision.

### FINANCIAL AID

Grants, scholarships, loans and work/study programs are available for community college students. The financial aid office at each college can provide specific information on these opportunities. In addition, information on special curriculum-based scholarships may be available from academic department heads or from foundation directors at some colleges.



Local company PMW produces hatch covers for kayaks, among other items

### ACTIVITY

Look around your home. In five minutes, how many different items can you find that have manufactured plastic parts? In your bedroom, look for clothes made with synthetic fabrics, insulation for electric wires and compact disk cases. In the kitchen, look for mixing bowls and grocery bags. In the bathroom, look for shower curtains and cosmetic compacts. You may also find toys, computer parts, sports equipment and furniture — all made with plastic parts.

### PROFILE

**MICHAEL JENSEN**  
Clayton, NC



Plastics technology might be the perfect career for someone who wants quick results, explains Michael Jensen.

"One of the best things about working in plastics is that you get instant gratification — you can actually see your results almost immediately," Mike says. "This is a great career for someone who loves to make things happen."

Mike is one of those people who love to make things. To date, he has received 14 patents for products he designed for the telecommunications industry.

He worked four years with Lasco Industries and 23 years with Raychem Corporation (now Tyco International).

During his career, he completed projects in many areas of plastics technology, including wire and cable extrusion, sheet extrusion, pipe extrusion, injection molding, blow molding, thermoforming, laminating and product design.

His career also provided opportunities to travel. Mike worked in California and in Europe, living in Belgium for nearly four years, before moving to North Carolina.

A graduate of Arizona State University, Mike has begun a second career in education. He is sharing his knowledge of the plastics industry as director of the Eastern North Carolina Plastics Technology Center, located in Zebulon. He also serves as department head for the plastics technology program at Wake Technical Community College.

"There are so many opportunities for people who want to work in plastics technology," he emphasizes. "You might start out in manufacturing and move into product design, supervision, sales or training as you gain experience in the industry."

Mike adds, "If you were the kind of person who liked to take things apart and reassemble them as a child, or if you enjoyed classes in school that allowed you to work with tools and fix mechanical problems, this is the career for you."

**BEST ADVICE** "A strong work ethic is key. There's no one constantly checking your work, so it's up to you to make things happen."