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Where/how to get training

Pharmaceutical manufacturing is one of the most active and stable industries in the Research Triangle Park area. Nearly every position requires education beyond high school.

A two-year associate degree program in Industrial Pharmaceutical Technology has been initiated at Johnston Community College (JCC) in collaboration with Wake Technical Community College. Specifically, a student may take the first-year courses at JCC, then transfer to Wake Tech to complete the degree requirements. This program prepares the student for employment in all areas of pharmaceutical manufacturing.

Course work includes general education, computer applications, biology, chemistry, industrial safety and some pharmaceutical classes at JCC. The remaining, very detailed pharmaceutical courses are available only at Wake Tech. Included in the program is a cooperative education requirement, which provides an opportunity for students to work in local companies. This aspect of the program will also be handled through Wake Tech.

Jobs Available

- Manufacturing Technician
- Machine Operator
- Quality Control Technician
- Chemical Analyst
- Environmental Control Technician
- Validation Technician
- Documentation Review Specialist
- Compliance Auditor

Scholarship Information

Scholarships at Johnston Community College are provided by a number of organizations and individuals. The College also cooperates with a number of agencies and organizations for other types of assistance, such as the Federal Pell Grant, Workforce Investment Act and Vocational Rehabilitation Financial Assistance. For more information on scholarships, contact the College's Office of Financial Aid at 919-209-2028.

Similar scholarships are also available at Wake Tech.

Required Classes

- Algebra I
- Geometry
- Chemistry
- Biology



For more information on federal financial aid programs, call (800) 4-FEDAID

SCHOOL to career

focus on jobs in Pharmaceutical Manufacturing and Quality Control



Operation of tablet press

There is a tremendous concentration of pharmaceutical manufacturing (medicine making) companies in the RTP, Wake County, and Johnston County area. These companies provide a necessary and vital product but also provide excellent employment opportunities. With proper training, these jobs can become rewarding careers.

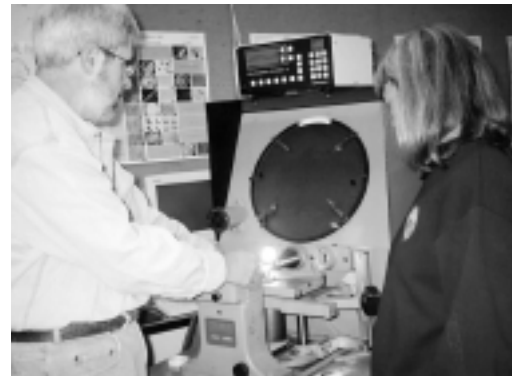
Pharmaceutical manufacturing is a very detailed, scientific business. The tablets, capsules, or I.V. solutions must be made the right way, with no exceptions. There are no "factory seconds" in this industry.

A machine operator, for example, must follow the carefully laid out steps in the production of insulin or plasma products. The operator must always keep in mind the purpose of the product. It is to help people overcome disease and maintain health. The industry always needs caring, dedicated, well-trained persons to fill these jobs.

Quality control (QC) of the finished pharmaceutical product is another tremendously important aspect of this industry. Scientifically trained technicians test samples of every production lot to assure compliance with company and Food and Drug Administration (FDA) requirements. This testing is and must be accurate.

If a Lipid I.V. Emulsion is supposed to be sterile, it must be proven. If a tablet is supposed to contain 125 mg of active ingredient, it has to be confirmed. The Quality Control (QC) technician must be knowledgeable in chemistry, microbiology, statistics and FDA regulations.

Manufacturing operators put quality into the medicines they make. Quality control technicians confirm that quality is consistent.



Optical comparator, used to make very precise dimension measurements



Sterile outfits ("bunny suits") are necessary in some pharmaceutical operations.



'Fette' brand tablet compression machine

Future job opportunities

Pharmaceutical technicians may find employment in many areas, in addition to the pharmaceutical industry. Food processing, chemical testing, environmental analysis, microbiological testing, and the new rapidly expanding field of biotechnology are all potential areas of employment.

What you wear



Depending on the job and work area, you may wear protective suits in sterile areas, lab coats in QC areas, and uniforms in other production areas. Most workers wear hairnets at all times. The employer usually provides the proper clothing.



Want to know more?

Johnston Community College
919-934-3051
www.johnston.cc.nc.us

Wake Technical Community College
919-662-3500
www.wake.tec.nc.us

Jobs in the Field

Job Titles Salary*	Place of Work	Kind of Work	Average
Machine Operator	Industry	Makes the product	\$25,000 +
Chemical Analyst	Industry, Government	Chemical Testing	\$30,000 +
Environmental Control Technician	Industry, Government	Microbiological and Sterility testing	\$30,000 +
Validation Technician	Industry, Government Education, Consulting	Manufacturing machine set up and troubleshooting	\$35,000 +

*These are average starting salaries. Salaries may vary widely depending upon prior experience, specific position and size of employer.

Activities

Scan the newspaper want ads to see how many pharmaceutical companies advertise from: Johnston County, Wake County, North Carolina.

How Many North Carolina companies are producing products to fight bioterrorism?

Skills required

Pharmaceutical technicians must have in-depth knowledge of manufacturing processes, chemistry, microbiology, FDA regulations, and most importantly, must be able to follow written procedures.

Profile

Christie Blalock Cary, NC

When Christie Blalock graduated from South Johnston High School, she already had a goal for the future: "I've always liked science — I wanted to do something in that field."



Blalock completed a two-year associate degree program in Industrial Pharmaceutical Technology. She learned to operate pharmaceutical production equipment, to calibrate instruments and to perform quality assurance tests, among other skills.

As a student, she worked for two terms with Pharmacia (now Fresenius Kabi) in Clayton through her college's cooperative education program. "I already knew what to do from my classes," Blalock explained. "I was learning specialized procedures [at Pharmacia]."

Her "co-op" work experience also provided opportunities to practice the skills she'd learned in class. Blalock said: "I worked in microbiology and validation, checking equipment, pre-calibrating instruments and observing testing." After graduation, she accepted a full-time position with Pharmacia, where she continued to master new skills.

Blalock later accepted a full-time position in quality assurance with Bayer, where she has now worked for five years. "From day to day, I'm doing something completely different," she says. "I might review manufacturing reports and quality assurance testing records one day; the next day, I might be training personnel. I'm constantly on the computer or in meetings."

Because Bayer is a multinational company, Blalock added that she occasionally meets with international customers, including personnel from Italy and Japan. Different countries have different product needs, she said: "I'm responsible for making sure that everything is within limits."

Blalock is one of several Industrial Pharmaceutical Technology community college graduates who work at Bayer. She described her position as a great job, with regular hours and the opportunity to meet new people and learn different things: "If you like science and math, this is a good choice."

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