

THE YORK TECHNICAL COLLEGE
Biotechnical & Chemical Operator Certificate

Implementation Date: 2011 Fall

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Salary Range: Earnings are higher than average for other manufacturing jobs, \$23.68 per hour.

NOTE: it is recommended students complete an AS degree and apply the BCO certificate courses to that degree AND complete an internship (either volunteer or paid).

A. REQUIRED CORE SUBJECT AREAS		Course Format	**University Transfer Course	Semester Offered	Credit
* BTN 103	Introduction to Biotechnology and Laboratory			Fa	4.0
* CHM 101	General Chemistry I		CHM 110	All	4.0
* CHM 105	General, Organic and Biochemistry		CHM 111	All	4.0
* CHM 275	Introduction to Industrial Chemical Processes			Spr and/or Su	3.0
* ENG 155	Communications I		ENG 101	All	3.0
* EVT 111	Introduction to Water and Wastewater Treatment Laboratory			Su	1.0
* EVT 254	Industrial Safety and Emergency Response	Internet		Sp	3.0
* IMT 102	General Safety	Internet	AS degree elective	TBA	2.0
* IMT 131	Hydraulics and Pneumatics		AS degree elective	TBA	4.0
* MAT 155	Contemporary Mathematics		MAT 101	All	3.0
* PHS 101	Physical Science I			All	4.0
Total Credit Hours					35.0

Internships The YTC Biotechnical and Chemical Operator program is producing biodiesel. As funding permits, there are paid internships for students with 12 hours of science and/or environmental semester credits of "C" or above.

Job Descriptions for the types of jobs/companies a biochem/chem. operator prepares a YTC graduate. US Dept of Labor and Statistics. Accessed 2011 Feb. <http://www.bls.gov/home.htm>.

Chemical plant and system operators monitor the entire production process. The operator is responsible for the efficient operation of the chemical plant. Chemical plant operators generally advance to these positions after having acquired extensive experience and technical training in chemical production processes. Experienced operators sometimes advance to senior supervisory positions.

Inspectors, testers, sorters, samplers, and weighers ensure that the production process runs efficiently and that products meet quality standards. They refer problems to plant operators or managers. A high school diploma is sufficient for basic product testing. Complex precision-inspecting positions are filled by those with experience and knowledge of the chemical manufacturing industry's products and production processes.

Examples of Local Jobs (Career Builder, etc.):

Investor-owned utility company seeking full time SC-licensed Wastewater and Water Operator or those who can obtain reciprocal licenses quickly. The ideal candidate holds a B Biological and a D Water license but other license levels will be considered DOE. Salary negotiable, company vehicle & uniforms provided. Background check includes DMV record, drug screening, verifying references.

Water and/or Wastewater Treatment Plant Operator: Benefits Package Include SC State Retirement. A Water Treatment Plant Operator position is open, all shifts. Under general supervision the operator adjusts water treatment equipment, applies and monitors chemical applications in the treatment of water and is responsible for cleaning and maintenance of operational equipment. Desirable education and experience; High School graduate with two years experience in public utilities. Class 3C11 certification or above in environmental systems required. Licensed NC operators

may apply. Must possess a valid driver's license. Drug free environment with pre-employment and random drug screening required. EOE w/excellent benefits pkg. Salary negotiable, DOE.

E-Learning Developer: BioNetwork BioEd Center. Base Pay: \$58,000 - \$62,000 /Year

Education: 2 Year Degree. Reports to the Manager of the BioNetwork BioEd Center to provide programming and development expertise in creating and updating interactive learning objects in support of the NC biotechnology and life science industry. The Flash Developer will work with an instructional and game designer to create a variety of interactive projects including animations, serious games, simulations, virtual environments, and web graphics. On average, this position may be required to travel 10–15% per month. Position will be located on the Campus of Gaston College, Dallas, NC, or at the BioNetwork Capstone Center, Raleigh, NC.

Manager of Manufacturing: Education: 4 Year Degree: Company based in Columbia, SC. **MUST BE WILLING TO RELOCATE!** Our company is a global bio/pharmaceutical industry leader with a diversified portfolio of medical device, pharmaceutical and biologic products. With a large pipeline and popular marketed products this organization is set for the long term. They have an opening for a Manager of Manufacturing. The individual who fills this role must have exceptional leadership skills and have worked with in an aseptic fill finish or bulk manufacturing environment. Responsibilities: Provide leadership for the production team and be a technical resource. Offer strategic advice towards cGMP compliance and manufacturing quality. Work cross functionally with Quality, Technical Operations, Regulatory and other similar departments. Managing of expenses and budgets for the team. Hire and add to existing group. Requirements: Bachelor of Science Degree in Engineering, Chemistry, Biology or related field. Hands on experience with sterile fill finish or bulk manufacturing in biologics or pharmaceuticals. 3+ years in a supervisor role with direct reports. Familiarity with cGMP audits from the FDA and other international bodies. Ability to work with cross functional departments and implement successful manufacturing strategies. **UST BE WILL TO RELOCATE!!!**

Specimen Accessioner-Greenville, SC \$10.75\hr. Our client, a national test reference laboratory has a open position for a specimen accessioner in Greenville, SC. The ideal candidate **MUST** have strong Excel skills. This is ideal for a recent graduate with a biotechnology degree. Position is temporary\contract until 4/15/2011,with a potential of becoming permanent Hours: Mon.,-Fri.,1 pm -10 pm. Essential Duties: Prepares laboratory specimens for designated departments/locations prior to laboratory analysis and testing. Unpacks specimens from branches or ports and routes specimens by type to various staging areas. Prepares all specimens received for testing in designated laboratory departments or locations such as staging of specimens, centrifuge, separate serum, and blood smears. Aliquots sample for departments. Prepares excess specimen samples for storage and resolves and document problem specimens.

Local Chemical Companies include: Omnova, Specialty Polymers, Acme Southern, Alpha Gary, Atotech USA, CCL Label, Cargill, Cox Veterinary Services, Colortex, Conco, Coatex, Cognis, Duracell, EZ Kleen, Frito Lay, Fluid Sciences, GAF, Georgia Pacific, Hery Company, Harrell Industries, Inchem, Isochem Colors, North Safety Products, Paxar, Pan Glo, Phillips Container, Sunbelt Colors, Ultra Additives.

The program enhances student success by enabling them to be more competitive and more likely to move into emerging chemical manufacturing fields. The SC Department of Commerce October 2008 study predicted the following ranges in growth trends in specific chemical industry sectors in these service area counties between 2007 and 2016: Chester 13-25%, Lancaster 15-38%, York 26-38%. These sectors include textile finishing, synthetic manufacturers, water and waste treatment operations, chemical plant and system operations, plastic and metal coating operations, and extrusion operators. In Chester County, the greatest potential for jobs is the replacement of the aging workforce. There is significant potential since the Chester county employment data shows that the chemical manufacturing industry is ranked the 7th largest employer with more than 320 employed in the average quarter of 2006. Furthermore, the participating companies plan to use the certificate for professional development for their existing chemical operators. Moreover, the SC Department of Commerce also identified growth of chemical manufacturing by 43% from 2002 to 2007 In York County, and identified plastics, resins, and chemical preparations as an emerging growth cluster.

Example of New Local Company: Lancaster Co. gold mine to add 800 jobs By Jason Foster:

jfoster@heraldonline.com The Haile Gold Mine, Lancaster County, will create 800 temporary and permanent jobs over the next two years. Canada-based Romarco Minerals bought the mine in 2007. The company has confirmed that the mine and surrounding land contain at least 4 million ounces of gold, making it one of the more significant gold discoveries in the United States in the past decade. The expansion will create 500 jobs during construction and another 300 permanent jobs once the mine is fully operational. The Herald. Accessed 2/17/2011.

<http://www.heraldonline.com/2010/04/30/2131617/lancaster-co-mine-to-add-800-jobs.html#ixzz1EDpqUPOJ>

The Biochemical and Chemical Operator Certificate is an important part of training workers in these growing biotechnological fields by providing them with college course work, promote life- long learning, gaining computational, mechanical, safety, analytical and critical thinking skills.