BIOTECHNOLOGY

PROGRAM OVERVIEW

INDUSTRY

North Carolina ranks third in biotechnology in the United States, with about 150 companies that employ 18,500 people and generate about $3 billion in annual revenue. The state also has 75 contract research organizations that employ 16,000 individuals and generate $5 billion in annual revenue. The state's biotechnology industry is growing at a rate of 10 to 15 percent per year, with an estimated 125,000 workers needed by 2025.

In order to meet the workforce needs of the growing industry, A-B Tech's Biotechnology program will provide training for new workers, help dislocated workers land high-wage, high-tech biotechnology jobs, and attract new business to Western North Carolina.

For more information about the biotechnology industry in North Carolina, visit www.ncbionetwork.org.

CURRICULUM

The Biotechnology curriculum at A-B Tech is designed to meet the increasing demands for skilled bioprocessing technicians in various fields of bioprocess manufacturing, pharmaceutical manufacturing, and chemical manufacturing.

Course work emphasizes bioprocessing, biology, chemistry, mathematics, and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: bioprocessing technician, research assistant to biologist or chemist; and quality control/quality assurance technician.

Graduates may find employment in various areas of industry and government, including biopharmaceutical processing, bioprocessing, chemical processing, research and development, sales, and customer service.

FACILITIES

A-B Tech is equipping a new 3,000-square-foot biotechnology laboratory with an attached tissue culture room and prep room. The Biotechnology curriculum laboratory is located in the Technology Commercialization Center on the Enka Campus.

FACULTY

A-B Tech instructors supporting the Biotechnology program have extensive experience in microbiology, molecular genetics, cell/tissue culture, biochemistry, organic chemistry, analytical chemistry, and laboratory techniques.

ADMISSIONS

PROCEDURES AND REQUIREMENTS

A-B TECH'S ADMISSION REQUIREMENTS

Individuals wishing to enroll in the Biotechnology program must complete the entire application process and meet the following requirements:

1. Submit an application form.
2. Obtain transcripts of credit from all secondary and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of placement tests administered by the College. Provisional or unconditional admission to individual programs will be determined by scores on the tests. Requests for reasonable accomodations or test exemptions by transfer credit will be reviewed individually. Alternate testing formats will be made available to individuals with disabilities upon request to the Coordinator of Disability Services.

Upon completion of this procedure, the student will be accepted unconditionally or provisionally into the program. Provisional acceptance indicates that developmental classes are necessary; this status changes to unconditional acceptance once the developmental classes are completed and the student notifies Student Services.

WHEN TO APPLY

You may apply before the curriculum program begins in the fall and **any development courses should be taken prior to the fall semester**. Only students admitted to the Biotechnology program will be allowed to register for biotechnology specific courses. All other courses in the curriculum may be completed prior to or after admission to the program.

PROCEDURES FOR 1+1 STUDENTS

Students must be recommended by the collaborating colleges in the spring in order to enter the first summer semester Biotechnology courses at A-B Tech. To be recommended, students must have completed with a grade of "C" or higher – or be making satisfactory progress in – all first- and second-semester math and science courses: BIO 111, CHM 151 (or 131/131A), MAT 161/161A (or higher level math course), BIO 112, CHM 132, MAT 151/151A (or MAT 155/155A).

By March 1 of each year, each collaborating college will send a list of recommended students and copies of admissions documentation to the Director of Admissions at A-B Tech. Articulating students will be admitted to A-B Tech upon receipt of the following documents:

- Student's acceptance letter from the home college
- High school transcript/GED
- Previous college transcripts
- College transcript
- Math and English placement/test scores

PARTNERS

1 + 1 AND CORPORATE PARTNERS

1 + 1 COLLABORATIVE AGREEMENTS

A-B Tech has collaborative agreements with other area community colleges allowing students to take their general education and other related courses there, then enroll at A-B Tech for the technical course work.

www.abtech.edu	www.blueridge.edu
www.caldwell.cc.nc.us	www.cvcc.edu
www.haywood.edu	www.isothermal.edu
www.mayland.edu	www.southwest.cc.nc.us
www.wpcc.edu	www.wilkescc.edu

CORPORATE PARTNERS

Support for A-B Tech's Biotechnology program has been provided by:

DEDICATED TO STUDENT SUCCESS

TWO-YEAR ASSOCIATE'S DEGREE

EMPLOYMENT OPPORTUNITIES

BIOPHARMACEUTICAL PROCESSING

CHEMICAL PROCESSING

LABORATORY TECHNICIAN

SALES AND CUSTOMER SERVICE

ANNUAL SALARIES

ENTRY-LEVEL TECHNICIAN
$25,000 TO $30,000

16 - WEEK CONTINUING EDUCATION COURSE ALSO AVAILABLE

BIOTECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE

FIRST YEAR

COURSE	TITLE	CLASS	LAB	WORK	CREDIT
FALL SEMESTER					
ACA 115	Freshman Seminar	0	2	0	1
BIO 111	General Biology I	3	3	0	4
CHM 151	Gen. Chemistry I	3	3	0	4
	OR				
CHM 131	Introduction to Chemistry	(3	0	0	3)
CHM 131A	Introduction to Chemistry Lab	(0	3	0	1)
ENG 111	Expository Writing	3	0	0	3
MAT 161	College Algebra	3	0	0	3
MAT 161A	College Algebra Lab	0	2	0	1
		12	10	0	16
SPRING SEMESTER					
BIO 112	General Biology II	3	3	0	4
CHM 132	Organic & Biochemistry	3	3	0	4
MAT 151	Statistics	3	0	0	3
MAT 151A	Statistics Lab	0	2	0	1
	OR				
MAT 155	Statistical Analysis	(3	0	0	3)
MAT155A	Statistics Analysis Lab	(0	2	0	1)
Elective	(HFA)	3	0	0	3
		12	8	0	15
SUMMER SEMESTER					
BIO 275	Microbiology	3	3	0	4
BTC 181	Basic Lab Techniques	3	3	0	4
Elective	(SBS)	3	0	0	3
		9	6	0	11

SECOND YEAR

COURSE	TITLE	CLASS	LAB	WORK	CREDIT
FALL SEMESTER					
BTC 285	Cell Culture	2	3	0	3
BTC 250	Molecular Genetics	3	0	0	3
CIS 110	Introduction to Computers	2	2	0	3
ENG 114	Professional Research and Reporting	3	0	0	3
BTC 282	Biotechnology Fermentation I	2	6	0	4
		12	11	0	16
SPRING SEMESTER					
BTC 286	Immunological Techniques	3	3	0	4
BTC 270	Recombinant DNA Tech	3	3	0	4
BTC 283	Biotechnology Fermentation II	2	6	0	4
COM 231	Public Speaking	3	0	0	3
		11	12	0	15
SUMMER SEMESTER					
BTC 288	Biotech Lab Experience Techniques	0	6	0	2
	OR				
COE 213BT	Co-op Work Experience	0	0	30	3
		0	0-6	0-30	2-3
PROGRAM TOTAL		**56**	**47-53**	**0-30**	**73 -76**

BIOWORK

AVAILABLE TO REGIONAL EMPLOYERS

CERTIFIED TRAINING COURSE • 16 WEEKS (128 CONTACT HOURS)

This course is designed to provide process technicians with the skills required for entry-level process technician jobs in bioprocess manufacturing, pharmaceutical manufacturing, or chemical manufacturing. There are nine units of study in the BioWork curriculum. Subject areas include safety and safety awareness, quality systems (cGMP, ISO 9000, and TQM), mathematics, chemistry, process flow diagrams, maintaining sterile processes, and growing living cells. Math, teamwork, and problem solving are incorporated throughout the curriculum.

For more information on the Biotechnology Curriculum or the BioWork training course, call (828) 254-1921, Ext. 5841 or visit us on the web at www.abtech.edu/as/btech/.

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Asheville-Buncombe Technical Community Col☒
The primary accreditator of Asheville-Buncombe Technical Community ☒ GA 30033-4097, telephone 404-679-4500. Inquiries about the College's accreditation status only may be obtained by contacting this organization.
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AT A-B TECH