BIOTECHNOLOGY LABORATORY TECHNICIAN

The Biotechnology Laboratory Technician AAS program provides the basic knowledge and laboratory skills needed to prepare for entry-level jobs in university, government, pharmaceutical, or industrial biotechnology laboratories. Graduates of the program will be able to seek employment in biotechnology laboratories such as biomanufacturing, quality control, quality assurance, research and development, and regulatory bioscience. The program has been designed to develop skills in basic analysis of biological molecules (DNA and proteins), use of bioreactors, recombinant DNA technology, generation of cell cultures, immunological method applications, regulatory compliance (GMPs and GLPs), accurate documentation, and laboratory safety skills. Some courses are dual credit and college credit can be earned while students are enrolled in secondary school.

The Biotechnology Laboratory Assistant certificate provides basic training and personal support to prepare students for certificates and degrees in Biotechnology or entry level employment in bioscience laboratories. The program is intended for students with little or no background in science, although the program is open to all students. Students enroll in three integrated courses as a cohort, BTN 100 Contextual Science with Laboratory (4 credit hours), BTN 103 Contextual Laboratory Language (3 credit hours), and BTN 104 Contextual Laboratory Math (3 credit hours).

The Basic Biotechnician certificate introduces hands-on laboratory training needed for entry-level employment in a biotechnological laboratory.

The Advanced Biotechnician certificate provides practical laboratory skills to supplement theoretical knowledge gained from previous coursework, to improve employability in the biotechnology industry.

The Bioinformatics certificate introduces interdisciplinary curriculum to gain skills required to seek employment at an entry level in performing data acquisition, management, and analysis in laboratory environments. The certificate program can also benefit working professionals seeking to advance or change their careers. Students will learn basic programming, concepts of molecular biology, and use of bioinformatics applications and resources. Emphasis will be placed on the skills required to become creative and flexible team members and leaders who can work with others in the dynamic interdisciplinary team environment found in today's biotechnology companies. The Bioinformatics certificate is a joint credential within the Biotechnology Laboratory Technician and Computer Information Technologies areas.

The Environmental Biotechnician certificate provides hands-on training using an interdisciplinary approach of integrating applied biotechnology to study the natural environment. Green technologies, sustainability, biodegradation, and bioremediation will be explored. Students will collect water, air, and soil samples and conduct experiments related to the detection and monitoring of environmental pollutants. The use of biotechnology laboratory methods, system's biology, and bioinformatics will be emphasized. Students who complete the curriculum satisfactorily are qualified for entry level positions in laboratories or field research companies, including federal, state, or local agencies, university or privately owned biotechnology research labs, or nature resource management organizations. The Environmental Biotechnician Certificate requires successful completion of 21 hours of coursework, which may be earned in 2 semesters, provided all the prerequisites have been met for the required coursework. This is a joint certificate in the Biotechnology Laboratory Technician and Environmental Science Technician programs.

Degrees

- Biotechnology Laboratory Technician - AAS (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/biotechnology-laboratory-technician-aas/)

Certificates

- Advanced Biotechnician - Certificate (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/advanced-biotechnician-certificate/)
- Basic Biotechnician - Certificate (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/basic-biotechnician-certificate/)
- Bioinformatics - Certificate (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/bioinformatics-certificate/)
- Biotechnology Laboratory Assistant - Certificate (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/biotechnology-laboratory-assistant-certificate/)
- Environmental Biotechnician - Certificate (https://catalog.kctcs.edu/programs-of-study/aas/biotechnology-laboratory-technician/environmental-biotechnician-certificate/)