

**PROGRAM:**           **Bioscience**

**PROGRAM  
CIP CODE:**       **41.0100**

**DESCRIPTION:**   The **Bioscience** program prepares individuals to apply scientific principals and technical skills in support of biologists and biotechnologists in research, industrial, and government settings. Includes instruction in fermentation technology, cell culturing, protein purification, biologic synthesis, assaying and testing, quality control, industrial microbiology, bioprocessing, chromatography and bioseperation, genetic technology, laboratory and hazardous materials safety, and computer applications and test equipment operation and maintenance. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, Health Occupations Students of America (HOSA).

**RECOMMENDED PROGRAM SEQUENCE OF COURSES:**

**Career  
Preparation**

The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Bioscience standards are addressed in this instructional sequence.

41.0100.10 **Introduction to Bioscience:** Students must attain these Standards in a coherent sequence.

**-and-**

Option A

41.0100.20 **Bio-medical:** Prepares students for careers in hospital, clinical, and private laboratories dealing with the medical field.

**-or-**

Option B

41.0100.30 **Bio-environmental:** Prepares students for careers in biochemistry, biophysics and molecular biology.

**-or-**

Option C

41.0100.40 **Bio-innovations:** Prepares students for careers in anything not covered in the previous two options.

**And program may elect to add:**

41.0100.75 **Bioscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Bioscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid.

**-and-**

41.0100.80 **Bioscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Bioscience program.

<b>TEACHER CERTIFICATION REQUIREMENTS FOR THE BIOSCIENCE PROGRAM</b>
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CAREER PREPARATION: The instructor must be CTE certified according to the following table
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<b>Bioscience Program</b>	<b>CERTIFICATES</b>
	Types: PCTIEP, SCTIEP
<b>Note:</b>	
<ul style="list-style-type: none"> <li>▪ <b>Bioscience Program, 41.0100.70</b> may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).</li> <li>▪ Teacher/Coordinator <b>41.0100.75</b> is not required to have a Cooperative Education Endorsement (CEN).</li> <li>▪ Teacher/Coordinator <b>41.0100.80</b> is required to have a Cooperative Education Endorsement (CEN).</li> </ul>	

<b>CERTIFICATE ABBREVIATIONS FOR THE BIOSCIENCE PROGRAM</b>
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Certificate Types	
<b>PCTIEP</b>	Provisional Career and Technical Education Industrial and Emerging Technologies
<b>SCTIEP</b>	Standard Career and Technical Education Industrial and Emerging Technologies