

# BIOTECHNOLOGY EDUCATION, CERTIFICATE

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[advanced.jhu.edu/biotecheducation \(https://advanced.jhu.edu/academics/certificates/biotechnology-education/\)](https://advanced.jhu.edu/academics/certificates/biotechnology-education/)

The Certificate in Biotechnology Education incorporates the fundamental and emerging ideas in biology and biotechnology, as well as issues related to teaching and learning of bioscience at the middle and high school levels.

Middle and secondary teachers, as well as curriculum and instructional leaders, will strengthen their content knowledge and pedagogic techniques in bioscience, and develop ways to teach bioscience effectively in their classrooms.

This Certificate consists of five graduate-level courses. The Independent Research Project course will emphasize inquiry-oriented approaches and integrating technology in bioscience education.

Moreover, teachers will analyze recent research on bioscience education, reflect on their learning and practice, and develop teaching tools and assessment strategies to engage students in bioscience-related problems and inquiries.

**Admissions Criteria for all Advanced Academic Programs** (<https://e-catalogue.jhu.edu/arts-sciences/advanced-academic-programs/enrollment-services/admission/>)

## Program Requirements

Code	Title	Credits
<b>Core Courses - Required:</b>		
AS.410.303	Foundations in Bioscience	4
AS.410.601	Biochemistry	4
AS.410.602	Molecular Biology	4
AS.410.800	Independent Research in Biotechnology	4
<b>Core Courses - Customizable</b>		
Select at least one of the following: <sup>1</sup>		4
AS.410.652	Cell Culture Techniques	
AS.410.656	Recombinant DNA Laboratory	
AS.410.658	Biodefense & Infectious Disease Laboratory Methods	
AS.410.660	Immunological Techniques in Biotechnology	
<b>Total Credits</b>		<b>20</b>

<sup>1</sup> Students must enroll in one laboratory courses offered at the Homewood campus. Laboratory courses are not offered online.

See course descriptions in the Center for Biotechnology Education ([https://e-catalogue.jhu.edu/course-descriptions/\\_biotechnology/](https://e-catalogue.jhu.edu/course-descriptions/_biotechnology/)).