

# Academy of Biotechnology

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**Introduction:** The Biotechnology Program provides students with opportunities to apply the concepts of biochemistry, genetics, and molecular biology to research activities. This intensive hands-on laboratory program utilizes the latest in laboratory equipment and computer technology to investigate the intricacies of molecular biology, microbiology, organic chemistry, and DNA science.

Students may enroll in the Academy of Biotechnology as incoming freshmen, sophomores or as juniors. In order to successfully complete the program requirements, students must earn 2 credit hours in each of the junior and senior years in Academy-approved science courses.

Courses that fall within the MCPS College Tech Prep Program (Molecular Biotechnology, Special Topics in Biotechnology and Guided Research in Biosciences) have been approved for articulation credit with Montgomery College. Students must earn a B or better in the approved courses to receive college credit.

**ADVANTAGES AND BENEFITS:** In addition to offering career windows to numerous scientific careers such as microbiology, marine biology environmental health, and police forensics, biotechnology student interns frequently enter the research field with employers competing for their services.

Academy of Biotechnology students are encouraged to participate in the numerous enrichment activities scheduled throughout the year including field trips, guest speakers and participation in the Biotechnology Student Association.

PROGRAM REQUIREMENTS AND OFFERINGS:

	<b>Course(s)</b>	<b>Credit</b>	<b>Requirements</b>
<b>Grade Nine</b>	Academy Honors Biology A/B	1.0	Required
<b>Grade Ten</b>	Academy Honors Chemistry A/B Academy Honors Physics A/B	1.0 1.0	Required Physics can be taken at any time.
<b>Grade Eleven</b>	Molecular Biotechnology, Advanced Level DP A/B* <b>REQUIRED COURSE</b>	2.0	Successful completion of Honors Biology A/B and completion or co-enrollment in Honors Chemistry
<b>Grade Twelve</b>	<b><u>CTE Completer Options*</u></b> · Special Topics in Biotechnology A/B · Guided Research in Biosciences A/B <b><u>Academy Alternatives</u></b> · Internship, Biosciences (unlimited repeats) · College, Biosciences · Biology, Advanced Placement A/B DP · Chemistry, Advanced Placement A/B DP · Environmental Science, Advanced Placement, A/B Forensics A/B Anatomy and Physiology A/B	1.0 1.0 1.0 0.5 2.0 2.0 1.0 1.0 1.0	Administered by the NWHHS Internship Program Dual enrolment at Montgomery College.

\*These courses have been approved for articulation credit with Montgomery College with a grade of B or higher

Competitive Internship Opportunities:

- Howard Hughes Medical Institute
- Center for Advanced Research in Biotechnology

For more information, see the MCPS CTE information website:

[www.montgomeryschoolsmd.org/departments/cte/toolkit/index.shtm](http://www.montgomeryschoolsmd.org/departments/cte/toolkit/index.shtm)

**Student Testimonials:**

“As a member of the academy, I received unique insight on modern branches of science, such as genetics and the role of molecules in sustaining life. I also had the opportunity to visit various institutions and learn of current projects in the field of biotechnology,” Megh

“This Academy has allowed me [to] participated in advanced science classes that are for students who want to develop a career in science,” Tiffany.

“In Molecular Biology, I had loved all the labs, but my favorite one was when we were testing the effect of the “ampicillin resistant gene” in bacteria. It was pretty interesting to observe, how easily we had inserted or modified the gene of the E. Coli bacteria just with the help of test tubes and pipettes,” Sachi.