

COLLEGE: Montgomery College (MC)

HIGH SCHOOLS: Northwest, Seneca Valley, Thomas Edison HS of Technology,

CLUSTER: Biosciences, Health Sciences, and Medicine

Wheaton

MCPS PROGRAM: Biotechnology

MC PROGRAM: Biotechnology A.A.S.

Your future in research science begins here! The Biotechnology program offers career windows to numerous scientific careers such as microbiology, marine biology, environmental health, and police forensics. Biotechnology provides students with the ability to apply the concepts of biochemistry, genetics, and molecular biology in research activities. This intensive hands-on laboratory program utilizes the latest in laboratory equipment and computer technology to investigate the intricacies of molecular and microbiology, organic chemistry, and DNA science. The program is open to students in Grades 11 and 12. A lab fee is required.

STUDENT ENTRY POINTS	GRADE	ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	REQUIRED COURSES			RECOMMENDED ELECTIVE COURSES		OTHER ELECTIVE COURSES	
						CAREER AND TECHNICAL EDUCATION COURSES						
SECONDARY	9	English	Algebra 1 or Geometry	Matter & Energy or Biology	Social Studies	Foreign Language	Physical Education	◆ Software Applications by Design A/B				
	AP courses can fulfill the requirements for program completion (see next page).											
	10	English	Geometry or Algebra 2	Biology, Chemistry or AP science coursework	Social Studies	Foreign Language	Health (.5) Elective (.5)	Fine Arts				
	11	English	Algebra 2 or Pre-calculus, AP Calculus, AP Statistics	Chemistry, Physics, or AP science coursework	Social Studies	Foundations of Technology A/B	◆ Molecular Biotechnology (DP)**					
	AP Biology, AP Chemistry, and Foreign Language are highly recommended.											
12	English	Pre-calculus, AP Calculus, AP Statistics	Physics or AP science coursework	Social Studies Elective	Choose 2 credits: Special Topics in ◆Biotechnology A/B, ◆Guided Research in Biosciences A/B, ◆College Biosciences A/B (DP)**, Internship Biosciences, Forensics Science A/B (pending MSDE approval), Anatomy and Physiology A/B (pending MSDE approval)							
Articulate up to 7 credits with a grade of B or better for a tuition savings of \$955 at Montgomery College.												
POSTSECONDARY	Year 1 1st Semester	English Foundation	Mathematics Foundation	BI 107 Principles of Biology I		Speech Foundation	BI 203 Microbiology		Electives-choose 5 credit hours: Instrumentation for the BioTech Lab ◆Biotech Practicum ◆Intro to Computer Applications Principles of Chemistry II Organic Chemistry II MA Elective			
	Year 1 2nd Semester	EN 101 Techniques of Reading & Writing I		◆BT 101 Introduction to Biotechnology	Behavioral & Social Sciences Distribution	Arts or Humanities Distribution	BT 117 Cell Culture & Cell Function					
	Year 2 1st Semester			BI 209 General Genetics		BT 200 Protein Biotechnology	CH 101 Principles of Chemistry I	Health Foundation				
	Year 2 2nd Semester			BT 204 Basic Immunology & Immunological Methods		BT 213 Nucleic Acid Methods	CH 120 Essentials of Organic & Biochemistry	CH 203 Organic Chemistry I	or			

** DP = Double Period

Students who complete the MCPS program (courses in red) in high school do not have to repeat the courses in red at MC.



This MCPS CTE program is approved by the Maryland State Department of Education for graduates in 2012.

Required Courses
Recommended Elective Courses
Career and Technical Education Courses
Credit-Based Transition Programs (e.g. Dual/Concurrent Enrollment, Articulated Courses, 2+2+2)
(◆=High School to Com. College)(●=Com. College to 4-Yr Institution)(■=Opportunity to test out)



Biosciences, Health Sciences, and Medicine

2009–2010

Biotechnology (OASIS = BI) CIP 26.1201.0 Requirements for Program Completion (1 credit A) + (1 credit B) + (2 credits C)			
Code	Course #	Course Title	Credit
A	3867	Molecular Biotechnology A Advanced Level (Double Period)	1.0
B	3868	Molecular Biotechnology B DP Advanced Level (Double Period)	1.0
C	3871/3872	Special Topics in Biotechnology A/B	1.0
	3875/3876	Guided Research in Biosciences, Health Sciences, and Medicine A/B Advanced Level	1.0
	3869	Internship-Biosciences, Health Sciences, and Medicine Advanced Level (Unlimited Repeats)	.5
	3870	College-Biosciences, Health Sciences, and Medicine Advanced Level (Unlimited Repeats)	.5
	3641/3642	Biology, Advanced Placement A/B	1.0
	3651/3652	Biology, Advanced Placement A/B (Double Period)	2.0
	3606/3607	IB Biology A/B CM AL (Double Period)	2.0
	3741/3742	Chemistry, Advanced Placement A/B	1.0
	3751/3752	Chemistry, Advanced Placement A/B (Double Period)	2.0
	3746/3747	IB Chemistry 1 A/B (AL)	1.0
	3659/3660	Environmental Science, Advanced Placement A/B	1.0
	3864/3865	Forensic Science A/B (SC)	1.0
	3761/3762	Anatomy and Physiology A/B (SC) or	1.0
	4042/4043	Anatomy and Physiology for Health Professions	

Articulation Agreements with Montgomery College (MC)

Students can articulate up to **7** credits at Montgomery College for a savings of **\$955**.

For more information, go to:

<http://www.montgomeryschoolsmd.org/departments/cte/toolkit/ClusterInfo/BioTechnology/index.shtm>.