



**Miami Dade
College**

BIOTECHNOLOGY PROGRAM

Associate in Science Degree (AS)

Program Code: 22027

Program Code: 22028

Program Code: 22029

Biotechnology

Bioinformatics

Chemical Technology

Associate in Science (AS) - 61 credits

If your goal is to begin working as a technician immediately after graduation from MDC, choose the AS degree. Students will choose between 3 tracks: Biotechnology, Chemical Technology, or Bioinformatics. The AS degree will expose you to a breadth of topics and emphasizes hands-on learning in a variety of techniques and procedures necessary for employment in the bioscience industry.

This program provides an opportunity to establish a basic foundation in the field of Biotechnology for employment in commercial, industrial, and government institutions. Graduates are prepared for positions as Lab Technicians, Lab Assistants, Research Assistants and Media Prep Technicians. They can also work in Biology or Biotechnology laboratories at University or Government research institutions. Graduates work in every major division of Biotechnology or pharmaceutical companies in Research and Development, Manufacturing, or Quality Control and Quality Assurance. Salary depends on the level of education and experience.

Course	Course Title	Credits	Pre-requisites	Co-requisites
GENERAL EDUCATION REQUIREMENTS (18 credits hours)				
ENC-1101	English Composition 1	3	None	None
SPC-1017	Fundamentals of Speech Comm.	3	None	None
PHI-2604	Critical Thinking & Ethics	3	ENC-1101	None
CLP-1006	Psychology of Personal Effectiveness	3	None	None
MAC-1105	College Algebra	3	None	None
BSC-2010	Principles of Biology 1	3	None	CHM-1045 BSC-2010L
CORE COURSES (23 credits hours)				
STA-2023	Statistical Methods	3	None	None
BSC-2010L	Principles of Biology 1 Lab	2	None	BSC-2010
CHM-1045	General Chemistry	3	None	MAC-1105
CHM-1045L	General Chemistry Lab	2	None	CHM-1045 MAC-1105
BSC-2426	Biotechnology: Methods and Applications I	3	None	BSC-2426L
BSC-2426L	Biotechnology: Methods and Applications I Lab	2	None	BSC-2426
BSC-2427	Biotechnology: Methods and Applications II	3	BSC-2426 BSC-2426L	BSC-2427L
BSC-2427L	Biotechnology: Methods and Applications II Lab	2	BSC-2426 BSC-2426L	BSC-2427
BSC-2943L	Bioscience Internship	3	8 credits in track	
TRACK 1 Biotechnology (20 credits chosen from the following)				
CHM-1046	General Chemistry/ Qualitative Analysis	3	CHM-1045	CHM-1046L
CHM-1046L	General Chemistry/ Qualitative Analysis Lab	2	CHM-1045L	CHM-1046
ETI-1040	Introduction to Bioscience Manufacturing	3	None	None
ETI-1172 (formerly ETI-1181)	Introduction to Quality Assurance	3	None	None
CHM-2200	Survey of Organic Chemistry	3	CHM-1046	CHM-2200L
CHM-2200L	Survey of Organic Chemistry Lab	1	CHM-1046L	CHM-2200
MCB-2010	Microbiology	3	BSC-2010 BSC-2010L	MCB-2010L CHM-1045
MCB-2010L	Microbiology Lab	2	None	MCB-2010
BSC-2423C	Protein Biotechnology/ Tissue Culture	4	BSC-2427 BSC-2427L	None
PCB-2061	Genetics	3	BSC-2010 BSC-2010L	None
CGS-1021	Scientific Computing	4	None	STA-2023
OR				

TRACK 2 BIOINFORMATICS (20 credits)				
CGS-1021	Scientific Computing	4	None	STA-2023
CGS-1145	Introduction to Bioinformatics	4	CGS-1021 or CGS-1060	None
CIS-2321	Systems Analysis and design	4	CGS-1060	None
COP-1334 (replacing COP- 2004)	Introduction to Object Oriented Programming C++	4	CGS-1060	None
COP-2700	Databases Application Programming	4	None	None
OR				
TRACK 3 CHEMICAL TECHNOLOGY (20 credits)				
CHM-1046	General Chemistry/ Qualitative Analysis	3	CHM-1045	CHM-1046L
CHM-1046L	General Chemistry/ Qualitative Analysis Lab	2	CHM-1045L	CHM-1046
CHM-2200	Survey of Organic Chemistry	3	CHM-1046	CHM-2200L
CHM-2200L	Survey of Organic Chemistry Lab	1	CHM-1046L	CHM-2200
CHS-2311C	Introduction to Chemical Instrumentation	4	CHM-2200 CHM2200L OR CHM-2211 CHM-2211L; AND CHM2110C	None
CHM-2110C	Survey of Quantitative Analysis	4	CHM-1046 CHM-1046L	None
ETI-1172 (formerly ETI-1181)	Introduction to Quality Assurance	3	None	None

GENERAL EDUCATION REQUIREMENTS (18 credits)

For additional advising information, students should refer to the MDC General Education advising information or their advisor.

- **CGS 1060** - Introduction to Microcomputer Usage (4 credits). By the 16th college level credit (excluding ESL, ENS, EAP, and college preparatory courses), a student must take and pass the Computer Competency Test or by the 31st college level credit (excluding ESL, ENS, EAP, and college preparatory courses), a student must pass CGS1060, an equivalent continuing education or vocational credit course or retest with a passing score on the Computer Competency Test.
- **CHM 1045** – General Chemistry (3 credits). While there is no pre-requisite for General Chemistry, students who have not earned a grade of “C” or higher in high school chemistry may be required to complete CHM 1025 prior to enrolling in CHM 1045.
- **MAC 1105** - College Algebra (3 credits). While there is no pre-requisite for College Algebra, students not demonstrating proficiency on the College Placement Test may be required to enroll in MAT 1033 prior to enrolling in MAC 1105.

For more information about the Biotechnology program, please contact:

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