Biotechnology – Bioinformatics
Associate in Science | Code: 22028 | 61 credits
CIP (1341010100**)**
Effective Term: Fall Term 2024 (2247)

The Biotechnology Program will expose students to a breadth of topics and emphasizes hands-on learning in a variety of techniques and procedures necessary for employment in the bioscience industry. The Program includes modules designed to enhance critical thinking and technical communication skills. It focuses on developing broad transferable skills and stresses understanding and demonstration of laboratory/industry protocols and regulations, bio-safety and safe operating procedures, ethical and environmental issues, product generation/formulation, quality control, validation, instrumentation, and computing.

GENERAL EDUCATION REQUIREMENTS (15.00 Credits)

COMMUNICATIONS (3.00 credits)

ENC 1101	English Composition 1	(3 credits)	Prerequisite: Student must meet the Developmental Education reading and writing requirements in State Rule 6A- 10.0315 (by course, placement score, or eligible exemption).

HUMANITIES (3.00 credits)

HUM 1020	Humanities	(3 credits)
PHI 2010	Introduction to Philosophy	(3 credits)

MATHEMATICS (3.00 credits)

MAC 1105	College Algebra	(3 credits)	Prerequisite: MAT 1033♦

♦**Note:** Students must seek advisement for proper mathematics course from discipline chairperson.

NATURAL SCIENCE (3.00 credits)

BSC 2010	Principles of Biology	(3 credits)	Pre/Corequisite: CHM 1045; Corequisite: BSC 2010L

SOCIAL SCIENCE (3.00 credits)

AMH 2010	History of the US to 1877	(3 credits)
AMH 2020	History of the US since 1877	(3 credits)
POS 2041	American Federal Government	(3 credits)

COMPUTER COMPETENCY

Test type(s) needed:
Computer Competency Test (CCT)
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CGS 1060C	Introduction to Computer Technology & Applications

MAJOR COURSE REQUIREMENTS (23.00 Credits)

BSC 2010L	Principles of Biology 1 Laboratory	(2 credits)	Corequisite: BSC 2010
BSC 2426	Biotechnology Methods and Applications 1	(3 credits)	Corequisite: BSC 2426L
BSC 2426L	Biotechnology Methods & Applications 1 Laboratory	(2 credits)	Corequisite: BSC 2426
BSC 2427	Biotechnology Methods and Applications 2	(3 credits)	Prerequisites: BSC 2426, BSC 2426L; Corequisite: BSC 2427L
BSC 2427L	Biotechnology Methods & Applications 2 Laboratory	(2 credits)	Prerequisites: BSC 2426, BSC 2426L; Corequisite: BSC 2427
BSC 2943L	Bioscience Internship	(3 - 6 credits)	
CHM 1045	General Chemistry and Qualitative Analysis	(3 credits)	Prerequisite: CHM1025 or a passing score on the CART exam, MAC 1105; Corequisite: CHM 1045L

CHM 1045L	General Chemistry and Qualitative Analysis Lab	(2 credits)	Prerequisite: MAC1105, CHM 1025 or a passing score on the CART exam; Corequisite: CHM 1045
STA 2023	Statistical Methods	(3 credits)	Prerequisites: MAT 1033 or MGF 1131

MAJOR COURSE ELECTIVE (23.00 Credits)

CGS 1021	Scientific Computing	(4 credits)	Corequisite: STA 2023
CGS 1060C	Introduction to Computer Technology & Applications	(4 credits)	
CGS 1145	Introduction to Bioinformatics	(4 credits)	
CIS 1321	Introduction to Systems Analysis and Design	(4 credits)	Prerequisite: CGS 1060C
COP 1334	Introduction to C++ Programming	(4 credits)	
COP 2700	Database Application Programming	(4 credits)	Prerequisites: Completion of all basic skills or acceptable scores on the Placement Test, CGS 1060C, and proficiency in any programming language.
MAT 1033	Intermediate Algebra	(3 credits)	Prerequisites: MAT 0022C, or MAT 0028, or MAT 0057 or by placement score, or eligible exemption.