

BIOTECHNOLOGY SPECIALIZATION - APPLIED HEALTH SCIENCES, BACHELOR OF APPLIED SCIENCE

Program Code: HSBSBIOT

Meta-Major: HSCI

Location(s): Cocoa, Melbourne, Palm Bay, Titusville

Delivery Method(s): On-Campus, Hybrid

Previous Degree Required: AS/AA

Eligible for Financial Aid: Yes

Additional Limited Access Application Process Required: No

Program Testing Requirements:

Classification of Instructional Programs (CIP) Code: 51.2211

Florida Department of Education CIP Code: 1105122111

Students can only select one major and one specialization. Students may receive a specific A.S./B.A.S. degree only one time. While students may take courses from multiple specializations, however, the degree will be awarded only once.

Admissions requirements: (There are no additional admissions requirements for this specialization.)

Other: Students wishing to enter the Medical Laboratory Technology or Medical Laboratory Science field should complete the Medical Laboratory Technology AS degree prior to beginning this program. This program is most appropriate for students with an AS degree in Chemical Technology or Medical Laboratory Technology, or AA students with a strong focus in Chemistry or Biotechnology. [Visit the program page for more details and how to apply.](#)

Specialization Requirements

Code	Title	Credit Hours
Associate Degree		
Complete Associate Degree		60
Applied Health Science - Core Courses		
HSC 3741	Writing for Healthcare Professionals	3
ISC 3523	Applied Scientific Thinking	3
Biotechnology Science Major Courses		36
ATEC 4640	Laboratory Animals and the IACUC	
BCH 4024	Introduction to Biochemistry and Molecular Biology	
BCHC 4103	Biochemical Methods	
BSCC 4422	Methods and Applications in Biotechnology 2	
HSC 3740	Quality Assurance for the Biomedical Sciences Laboratory	
HSA 4910/ HSC 3801	Capstone: Case Studies in Biomedical Science ¹	
	or HSC 4851 Health Sciences Internship	
HSCC 3543	Quantitative Biomedical Laboratory Methods	

HSCC 4544	Quantitative Biomedical Laboratory Instrumentation
MCBC 3020	Biology of Microorganisms
PCB 3063	Genetics
Biotechnology Electives	
Select 18 credit hours from the following: 18	
ANS 3440	Principles of Animal Nutrition
ANS 4911	Individual Mentored Research in Animal Science
ANSC 3006	Introduction to Animal Science
BSC 3424	Nanotechnology
BSC 4434	Bioinformatics
BSC 4870	Principles of Pharmacology
BSC 4911	Individual Mentored Research in Biology/ Biotechnology
HSA 3502	Healthcare Risk Management
HSC 3201	Community Health
HSC 3537	Health and Medical Terminology
HSC 3820	Transcultural Biomedical Science - Study Abroad
HSC 4184	Healthcare Leadership
HSC 4404	Medical Disaster Management
MCB 4203	Bacterial and Viral Pathogenesis
PCB 3134	Cell Biology
PCB 4234	Biology of Cancer
PHC 4094	Introduction to Biostatistics for Health Science and Public Health
ZOO 4911	Individual Mentored Research in Zoology
ZOOC 4232	Comparative Parasitology
ZOOC 4603	Developmental Biology
Biotechnology Support Courses	
Students may select up to 8 credits from the following Support Courses as part of their 18 Biotechnology electives.	
BSCC 1011	General Biology 2
BSCC 1426	Introduction to Biotechnology Methods
BSCC 1427	Introduction to Biotechnology Methods 2
CHM 1045	General Chemistry 1
CHM 1046	General Chemistry 2
CHM 2210	Organic Chemistry 1
CHM 2211	Organic Chemistry 2
CHML 1045	General Chemistry 1 Laboratory
CHML 1046	General Chemistry 2 Laboratory
CHML 2210	Organic Chemistry 1 Laboratory
CHML 2211	Organic Chemistry 2 Laboratory
MAC 2311	Calculus 1 with Analytic Geometry
MAC 2312	Calculus 2 with Analytic Geometry
PHY 2048	General Physics 1
PHY 2049	General Physics 2
PHYL 2048	General Physics 1 Laboratory
PHYL 2049	General Physics 2 Laboratory

Total Credit Hours 120

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Student will have the option to take [HSC 4851](#) Health Sciences Internship or [HSC 3801](#) Clinical Observation/Volunteer Work and [HSA 4910](#) Capstone: Case Studies in Biomedical Science

Learning Outcomes: Biomedical Science / Biotechnology Science BAS Specializations

1. Analyze biological processes at all levels of organization: molecular, cellular and microbial, organismal, population, and ecosystem.
 - *Supports Core Ability: Think Critically and Solve Problems*
2. Write a technical biological/bio-medical paper.
 - *Supports Core Ability: Work Cooperatively*
3. Explain the importance of unifying concepts in biology, including cell theory, genetics and evolution.
 - *Supports Core Ability: Think critically and solve problems*
4. Apply laboratory skills in support of bio-medical systems.
 - *Supports Core Ability: Process information*
5. Evaluate historical developments and research in the biological and bio-medical sciences.
 - *Supports Core Ability: Think critically and solve problems*
6. Analyze data and scientific literature.
 - *Supports Core Ability: Communicate effectively*
7. Apply scientific methods in laboratory-based and field-based inquiry.
 - *Supports Core Ability: Process information*
8. Characterize awareness of professional, ethical and global issues in a diverse society.
 - *Supports Core Ability: Model Ethical & Civic Responsibility*