

APPLIED HEALTH SCIENCES (BAS), BIOMEDICAL SCIENCE SPECIALIZATION

Previous Degree Required: A.S./A.A.

Eligible for Financial Aid: Yes

Delivery Method(s): On-Campus, Hybrid

Location(s): All campuses and online

Limited Access: No

Program Testing Requirements: Not Required

Academic Community: HSCI

Program Code: HSBSBIOM

Classification of Instructional Programs (CIP) Code: 51.2211

Florida Department of Education CIP Code: 1105122111

This is a specialization of the BAS Applied Health Sciences degree.

The Biomedical Science specialization is most appropriate for students with a strong background in biology who plan to move on to a medical career or apply for an advanced degree program that involves patient contact. It builds upon a student's existing professional knowledge to enhance skills in communication, critical thinking, problem solving, and research and leadership theories.

Refer to the [Bachelor of Applied Science \(BAS\) overview page](#) to find information about admission, graduation, general education and other requirements. Students who need technical electives will work with a bachelor's advisor to determine the courses best suited to their plan of study.

Visit the [program page](#) for more details and how to apply.

Program of Study

Code	Title	Credit Hours
Associate Degree		60
Credits earned from Associate Degree		
Applied Health Sciences Major Courses		
HSC 3741	Writing for Healthcare Professionals	3
ISC 3523	Applied Scientific Thinking	3
Biomedical Science Specialization Courses		27
BCH 4024	Introduction to Biochemistry and Molecular Biology	
HSA 4910 & HSC 3801	Capstone: Case Studies in Biomedical Science and Clinical Observation/Volunteer Work ¹	
	or HSC 4851 Health Sciences Internship	
HSC 4500	Epidemiology	
MCBC 3020	Biology of Microorganisms	
PCB 3063	Genetics	
PCB 4233	Immunology	
PHC 4031	Emerging and Infectious Diseases	
PHC 4094	Introduction to Biostatistics for Health Science and Public Health	
Biomedical Science Technical Electives		27
Select 27 credit hours from the following:		
ANS 3440	Principles of Animal Nutrition	

ATEC 4640	Laboratory Animals and the IACUC
BCHC 4103	Biochemical Methods
BSC 3424	Nanotechnology
BSC 4434	Bioinformatics
BSC 4870	Principles of Pharmacology
BSC 4911	Individual Mentored Research in Biology
BSCC 4422	Methods and Applications in Biotechnology 2
HSA 3502	Healthcare Risk Management
HSA 3702	Healthcare Research
HSC 3201	Community Health
HSC 3537	Health and Medical Terminology
HSC 3740	Quality Assurance for the Biomedical Sciences Laboratory
HSC 4184	Healthcare Leadership
HSC 4404	Medical Disaster Management
HSCC 3543	Quantitative Biomedical Laboratory Methods
HSCC 4544	Quantitative Biomedical Laboratory Instrumentation
MCB 4203	Bacterial and Viral Pathogenesis
PCB 3134	Cell Biology
PCB 4234	Biology of Cancer
ZOO 4911	Individual Mentored Research in Zoology
ZOOC 4232	Comparative Parasitology
ZOOC 4603	Developmental Biology

Biomedical Science Support Courses

Students may select up to 16 credits from the following as part of their 27 Biomedical 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 Hours: **120**

In accordance with Florida Statute and Florida Administrative Code, students must

- Satisfy the [foreign language competency](#) requirement
- Satisfy the [Civic Literacy Graduation Requirement](#).

¹ Student may take [HSC 3801](#) Clinical Observation/Volunteer Work and [HSA 4910](#) Capstone: Case Studies in Biomedical Science, or [HSC 4851](#) Health Sciences Internship (total 3 credits)

Course Sequence

Below is the recommended sequence for taking courses in this degree. Using this guide and meeting with your assigned advisor each term is the key to successful program completion.

Please note that course prerequisites, including required developmental math, reading, or writing, need to be completed to continue on to the more advanced course. Courses followed by "&" have prerequisites that are not part of this program. Click on the course number to see the requirements.

Code	Title	Credit Hours
HSC 3741	Writing for Healthcare Professionals ^{Su}	3
ISC 3523	Applied Scientific Thinking ^{Fa}	3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
BCH 4024	Introduction to Biochemistry and Molecular Biology ^{Fa, Sp}	4
HSC 4500	Epidemiology ^{&, Fa, Sp, Su}	3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
MCBC 3020	Biology of Microorganisms ^{&, Fa, Sp}	5
PCB 3063	Genetics ^{Fa, Sp}	3
PCB 4233	Immunology ^{&, Fa}	3
PHC 4031	Emerging and Infectious Diseases ^{Fa, Sp, Su}	3
PHC 4094	Introduction to Biostatistics for Health Science and Public Health ^{&, Fa, Sp}	3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
Biomedical Science Elective Course ¹		3
HSA 4910 & HSC 3801 or HSC 4851	Capstone: Case Studies in Biomedical Science and Clinical Observation/Volunteer Work ^{2, Fa} Health Sciences Internship	3
Total Hours:		60

¹ Select 27 credits from the Biomedical Science Electives on the Program of Study

² Take HSC 4851 Health Sciences Internship (3 credits) or both HSA 4910 Capstone: Case Studies in Biomedical Science and HSC 4851 Health Sciences Internship (total 3 credits). Capstone course is to be taken in student's final term.

FaCourse offered in fall term

SpCourse offered in spring term

SuCourse offered in summer term

Listed below are the approved courses that satisfy the Technical Concentration requirement for your degree program. Students must select their courses only from this designated list.

Please note that a single course may not be used to fulfill more than one requirement. For example, a course applied toward Technical Concentration cannot also be used as a Specialization course or applied to any other category.

Before finalizing your selections, be sure to confirm that you have not previously completed any of the courses you intend to use to meet the Technical Concentration. Work with a bachelor's advisor to determine the courses best suited to your plan of study.

Code	Title	Credit Hours
ANS 3440	Principles of Animal Nutrition	4
ATEC 4640	Laboratory Animals and the IACUC	4
BCHC 4103	Biochemical Methods	2
BSC 3424	Nanotechnology	3
BSC 4434	Bioinformatics	3
BSC 4870	Principles of Pharmacology	3
BSC 4911	Individual Mentored Research in Biology	1-4
BSCC 1011	General Biology 2	4
BSCC 1426	Introduction to Biotechnology Methods	4
BSCC 1427	Introduction to Biotechnology Methods 2	4
BSCC 4422	Methods and Applications in Biotechnology 2	4
CHM 1045	General Chemistry 1	3
CHM 1046	General Chemistry 2	3
CHM 2210	Organic Chemistry 1	3
CHM 2211	Organic Chemistry 2	3
CHML 1045	General Chemistry 1 Laboratory	1
CHML 1046	General Chemistry 2 Laboratory	1
CHML 2210	Organic Chemistry 1 Laboratory	1
CHML 2211	Organic Chemistry 2 Laboratory	1
CHMC 3120	Analytical Chemistry with Laboratory	4
HSA 3502	Healthcare Risk Management	3
HSA 3702	Healthcare Research	3
HSC 3201	Community Health	3
HSC 3537	Health and Medical Terminology	3
HSC 3740	Quality Assurance for the Biomedical Sciences Laboratory	3
HSC 4184	Healthcare Leadership	3
HSC 4404	Medical Disaster Management	3
HSCC 3543	Quantitative Biomedical Laboratory Methods	4
HSCC 4544	Quantitative Biomedical Laboratory Instrumentation	4
MAC 2311	Calculus 1 with Analytic Geometry	5
MAC 2312	Calculus 2 with Analytic Geometry	5
MCB 4203	Bacterial and Viral Pathogenesis	3
PCB 3134	Cell Biology	3
PCB 4234	Biology of Cancer	3
PHY 2048	General Physics 1	4
PHY 2049	General Physics 2	4
PHYL 2048	General Physics 1 Laboratory	1
PHYL 2049	General Physics 2 Laboratory	1
ZOO 4911	Individual Mentored Research in Zoology	1

ZOOC 4232	Comparative Parasitology	4
ZOOC 4603	Developmental Biology	5

Learning Outcomes

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