

## Description Bachelor of Biomedical Sciences

This program exposes the student to a range of disciplines that increase their understanding of clinical topics and provide a foundation to be successful in applying for graduate studies in health-related disciplines. The program allows the acquisition of many requirements to pursue graduate studies in medicine. In addition, the student could be able to apply to doctoral programs in pharmacy, audiology, physical therapy, and chiropractic. In addition, the student can complete the requirements for doctoral programs in basic sciences such as microbiology, biochemistry, and biology. Students are advised to take as prescribed distributive courses those additional courses that are requirements of their prospective graduate program. The academic component also allows them to enter post-graduate programs such as medical technology and cyto-technology.

The baccalaureate allows the student to apply for work as a medical representative or laboratory technician in universities or research centers.

## Mission

The Bachelor of Science in Biomedical Sciences is designed to develop in students the understanding of modern concepts of Biomedical Sciences and familiarize them with basic laboratory skills, teach them to solve scientific problems and use critical thinking while addressing biomedical problems in our society.

## Alumni Competency Profile

This Bachelor of Biomedical Sciences degree is designed to develop competencies that will enable students to acquire:

## Knowledge

1. The students will review and study topics that will enhance their proficiency to take the entrance exams to biomedical science schools at the professional or graduate level.

## Skills

1. It will allow them to use critical thinking to assess consequences and discern between actions that promote the maintenance of quality of life through individual and collective health care, and to make informed decisions on health issues within a framework of ethical-moral values.

## Admission's Requirements

Every student to be admitted must present a valid document proving their identity, for purposes of compliance with the law and applicable regulations.

1. Option A:
  1. Deliver an official document issued in any tangible medium that serves to certify that the student has completed the graduation requirements of an accredited high school, with an academic index of 2.00 or its equivalent.
  2. Submit the results obtained in the University Admission Test (PAA), the Scholastic Aptitude Test or any other equivalent.
  3. Obtain an index of 785 or its equivalent, according to the procedure carried out by the Admissions Office.
  
2. Option B:
  1. Deliver an official document issued in any tangible medium that serves to certify that the student has completed the graduation requirements.
    - a. This admission option does not require the presentation of the result of the PAA test, the Scholastic Aptitude Test or any other equivalent.

## Transfer Requirements

1. Comply with the admission requirements for transfer students established in the General Catalog.
2. Have completed university studies at another Institution and have passed with a grade of C or more; a minimum of 12 credits.

## Academic Progress Requirement

1. Comply with all the Satisfactory Progress Standards established in the General Catalog.
2. Students in this Program must pass all Biomedical Sciences courses and the MATH 1500 course with a minimum grade of C.

## General Education Requirements

### General Education Requirements – 45 credits

Course	Title	Credits	NOTES
GEIC 1010	Information Technology and Computing	3	
GEHP 3000	Comprehensive Health and Quality of Life	3	Pre-requisite GEEN (1101 ó 1201 ó 2311)
GEEN (1101 ó 1201 ó 2311)	English I	3	
GEEN (1102 ó 1202 ó 2312)	English II	3	Pre-requisite GEEN (1101 ó 1201 ó 2311)
GEEN (1103, 1203 ó 2313)	English III	3	Pre-requisite GEEN (1102 ó 1202 ó 2312)

GESP 1101	Literature and Communication: Narrative and Poetry	3	
GESP 1102	Literature and Communication: Essay and Theatre	3	
GESP 2203	Literature and Worldview	3	
GEMA 1200	Fundamentals of Algebra	3	
GECF 1010	Introduction to the Christian Faith	3	
GEHS 2010	Historical Process of Contemporary Puerto Rico	3	
GEHS 3020	Global Society	3	Choose one of the courses.
GEHS 3050	Human Formation, Society and Culture		
GEHS 4020	Western, Ancient and Medieval Civilization		
GEHS 4030	Modern and Contemporary Western Civilization		
GEPE 3010	Art Appreciation	3	Choose one of the courses.
GEPE 3020	Music Appreciation		
GEPE 3030	Appreciation of the Theatre		
GEPE 4040	Ethics and Social Responsibility	3	
GEEC 2000	Entrepreneurial Culture	3	

**Concentration Requirements: 56 credits**

Course	Title	Credits	NOTES
BIOL 1101	General Biology I	3	
BIOL 1103	Biology Skills Laboratory I	1	Concurrent with BIOL 1101
BIOL 1102	General Biology II	3	Pre-requisite BIOL 1101 BIOL 1103
BIOL 1104	Biology Skills Laboratory II	1	Concurrent with BIOL 1102
BMSC 2210	Human Genetics	3	Pre-requisite BIOL 1102
CHEM 1111	General Chemistry I	4	Pre-requisite GEMA1200  Contains Laboratory
BIOL 3105	General Microbiology	4	Pre-requisite BIOL 1102, BIOL 1104 y CHEM 1111  Contains Laboratory
CHEM 2212	General Chemistry II	4	Pre-requisite MATH 1500 ó MATH 1511 and CHEM 1111  Contains Laboratory

CHEM 2221	Organic Chemistry I	4	Pre-requisite CHEM 2212 Contains Laboratory
BMSC 3011	Human Anatomy and Physiology I	3	Pre-requisite BIOL 1102 Contains Laboratory
CHEM 2222	Organic Chemistry II	4	Pre-requisite CHEM 2221 Contains Laboratory
BMSC 3012	Human Anatomy and Physiology II	3	Prerequisite BMSC 3011 Contains Laboratory
PHYS 3001	General Physics I	4	Pre-requisite MATH 1500 Contains Laboratory
MATH 1500	Precalculus **	5	Pre-requisite GEMA 1200  **You can take MATH 1511 Precalculus I and MATH 1512 Precalculus II instead
PHYS 3002	General Physics II	4	Pre-requisite PHYS 3001 Contains Laboratory
BMSC 4020	Biomedical Ethics	3	24 credits in the area of Biomedical Sciences
BMSC 4015	Biochemistry of Human Physiology	3	Pre-requisite CHEM 2222

**Prescribed Distribution Requirements: 12 credits**

Twelve (12) credits from among the following:

BIOL 2153 Biostatistics (3 credits)

BIOL 3405 Immunology (3 credits)

BIOL 4305 Medical Microbiology (3 credits)

BIOL 4405 Embryology (3 credits)

BIOL 4494 Pharmacology (3 credits)

BIOL 4604 Cellular and Molecular Biology (3 credits)

BIOL 4905 Pathology (3 credits)

CHEM 3320 Analytical Chemistry (4 credits)

ENGL 2076 Reading and Writing Technical Texts (3 credits)

ENGL 3030 Technical-Scientific Writing in the Sciences (3 credits)

MATH 2251 Calculus (5 credits)

**Free Courses: 6 credits**

## List of Core Concentration Courses

### BMSC 2210 HUMAN GENETICS

Fundamental concepts of human genetics, from the perspective of the structure, function and transmission of genes; including gene-gene and gene-environment interaction. Emphasis will be placed on the molecular aspects of human inheritance, genetic etiology of diseases and research techniques in human genetics. Requisite: BIOL 1102. (3 credits)

### BMSC 3011 HUMAN ANATOMY AND PHYSIOLOGY I

Analysis of the concepts of histology and the integumentary, skeletal, muscular and nervous systems of the human body from the anatomical and physiological point of view, including the pathophysiological considerations of the systems. Requisite: BIOL 1102. (3 credits)

### BMSC 3012 HUMAN ANATOMY AND PHYSIOLOGY II

Analysis of the concepts of the endocrine, reproductive, cardiovascular, lymphatic, immune, excretory, respiratory and digestive systems of the human body, including pathophysiological considerations. Requisite: BMSC 3011. (3 credits)

### BMSC 4015 BIOCHEMISTRY OF HUMAN PHYSIOLOGY

Study of the metabolic transformations suffered by chemical compounds and biopolymers at the cellular level. Physiological studies comprising bioenergetics, vitamin and hormone metabolism, anabolism and catabolism of carbohydrates, lipids and proteins, energy production through the tricarboxylic acid cycle and oxidative phosphorylation. Requisite: CHEM 2222. (3 credits)

### BMSC 4020 BIOMEDICAL ETHICS

Study of ethical aspects in the biomedical sciences. Analysis, discussion and application of ethics in conflict situations in medicine and biomedical research. Requirement: Have completed 24 credits in the area of Biomedical Sciences. (3 credits)