



## Requisitos y su equivalencia en universidades de Estados Unidos

Pharmacy (NOVA)				
Requisitos	Equivalencia	Carolina	Cupey	Gurabo
General Biology I and II including laboratory (8 credits)	<b>BIOL 203 - GENERAL BIOLOGY I 4 CREDITS</b>	X	X	X
	An introductory survey of current biological concepts for students majoring in the sciences. Emphasis will be placed on topics which include characteristics of living things, scientific method, biologically important compounds and molecules, cells, energy and metabolism, genetics, evolution and ethical aspects related to technology and scientific research.			
	<b>BIOL 204 - GENERAL BIOLOGY II 4 CREDITS</b>	X	X	X
	General biology course for natural sciences students. Include the following topics: biodiversity, basic concepts of anatomy and physiology of plants and animals, ecology and ethical aspects related to technology and scientific research.			
Human Anatomy and/or Physiology with or without laboratory (6 credits)	<b>HESC 125 HUMAN ANATOMY AND PHYSIOLOGY I</b>	X		
	The course offers fundamental concepts of anatomy and human physiology. The relationship between structure, function, and its integration within the different systems of the human body are emphasized. The course covers the basic principles of biochemistry and cellular biology including the integumentary, skeletal, muscular nervous and endocrine systems. The course incorporates pathological conditions, medical terminology, and other more common diagnostic exams for different conditions.			
	<b>BIOL 313 - HUMAN ANATOMY AND PHYSIOLOGY I 4 CREDITS</b>			X
The course integrates the study of the structure of the human organism, its development and histology, with the function of organs and systems. Also, issues related to health are discussed. Study of cellular concepts, histological structures, and osteoarticular, muscle and nerve systems; emphasizing the value of life, human dignity, respect, integrity, justice and responsibility of every human being. This course is designed primarily for students majoring in natural sciences professions, pre-medical, pre-odontology etc.				

	<b>BIOL 314 - HUMAN ANATOMY AND PHYSIOLOGY II 4 CREDITS</b>			<b>X</b>
	The course integrates the study of the structure of the human organism, its development and histology with the function of organs and systems and how they work together. Health-related issues are discussed. Endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems are discussed, emphasizing the importance to value life, human dignity, respect, integrity, justice and responsibility of every human being. This course is designed primarily for students majoring in natural sciences professions, pre-medical, pre-odontology etc.			
General Chemistry and laboratory (8 credits)	<b>CHEM 203 GENERAL CHEMISTRY I 4 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	Emphasis in this course is aimed to the study of the states of the matter, atomic and molecular structures, nomenclature of inorganic compounds, classification of elements in the periodic table, chemical bond, chemical equations and reactions, stoichiometry. In the laboratory students are trained in the use of basic laboratory techniques such as the use of volumetric equipment, titration and qualitative analysis. Students are taught to keep a good laboratory notebook and safety on the laboratory.			
	<b>CHEM 204 - GENERAL CHEMISTRY II 4 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	Second part of the introductory course of fundamental concepts in chemistry. Study of matter, its composition, properties, chemical reactions, and energy transformations related to these reactions. Analysis of relevant environmental issues related to the chemistry concepts studied. Promotion of decision-making on controversial issues involving chemistry and ethics. Investigative activities that promote the development of higher thinking processes and hand-on doing science. One semester, 3 hours of lecture, and 3 hours of laboratory per week.			
Organic Chemistry and laboratory (8 credits)	<b>CHEM 351 - ORGANIC CHEMISTRY I 4 CREDITS</b>	<b>X</b>		<b>X</b>
	The Organic chemistry course studies the carbon and hydrogen compounds and its derivatives with others heteroatom such as: halogens, oxygen, nitrogen, sulfur, phosphorus and some metals. This course discusses the nomenclature and physical properties of the different families of organic compounds. The synthetic methods and the reactions of the alkanes, alkenes, cycloalkanes, alkynes, dienes, alkyl halides, aromatic compounds, and derivatives are also presented. Emphasis is done the reactions mechanisms, specially: SN1, SN2, E-1, E-2, double and triple bonds additions, electrophilic aromatic substitutions in benzene and its derivatives, alcohols dehydration, aldol condensation, Cannizzaro reaction, epoxidation of alkenes, Sandmeyer reaction and Cope and Hofmann amines elimination.			
	<b>CHEM 352 - ORGANIC CHEMISTRY II 4 CREDITS</b>	<b>X</b>		<b>X</b>
	The Organic chemistry course studies the carbon and hydrogen compounds and its derivatives with others heteroatom such as: halogens, oxygen, nitrogen, sulfur, phosphorus and some metals. This course discusses the nomenclature and physical properties of the different families of organic compounds. The synthetic methods and the reactions of the alkanes, alkenes, cycloalkanes, alkynes, dienes, alkyl halides, aromatic compounds, and derivatives are also presented. Emphasis is done the reactions mechanisms, specially: SN1, SN2, E-1, E-2, double and triple bonds additions, electrophilic aromatic substitutions in benzene and its derivatives, alcohols dehydration, aldol condensation, Cannizzaro reaction, epoxidation of alkenes, Sandmeyer reaction and Cope and Hofmann amines elimination. With respect to the compound structure, the course discusses the structural, geometrical and optical isomerism, emphasizing the conditions that have to be fulfilled for them to exist. The spectroscopic method of analysis and identification of functional group and structure assignment are discussed. Specifically, IR, UV, NMR and MS spectroscopy.			

General Physics with or without laboratory (3 credits)	<b>PHSC 203 - GENERAL PHYSICS I 4 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	The course provides skills to understand the world that surrounds the student. The student will learn to explain physical phenomena and will discover principles and laws that have connections with other disciplines and apply to analog phenomena and broader situations. This way, he will recognize the broad scope of Physics. For this, the student will strengthen the correct use of the language of the discipline, perform cooperative experiments where will manipulate instruments and take measurements that will report clearly and precisely. Topics are covered in sequential manner, integrating an inductive and deductive format. The applications cover from the simple free fall to orbiting satellites, based on the laws of movement and their relation with energy. Slightly emphasis is given on integral calculus. Student will be evaluated with a variety of instruments, in class as well as online Course.			
English (6 credits)	<b>ENGS 152 - FUNDAMENTALS OF SPEAKING, READING, AND WRITING ENGLISH I 3 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	This competency-focused course develops and strengthens students' listening, speaking, reading, and writing proficiency in English through an integrated language arts approach. Students will engage in oral communication competencies to fit the purpose and context of diverse situations. Reading comprehension competencies focus on the analysis of fiction and non-fiction texts from a global perspective to produce different types of paragraphs and short essays expressing diverse points of view. This course involves the responsible use of technology and information skills to generate new knowledge.			
	<b>ENGS 153 - FUNDAMENTALS OF SPEAKING, READING, AND WRITING ENGLISH I 3 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
This competency-focused course integrates different rhetorical discourses in a variety of local and international topics in order to generate new knowledge. Students will demonstrate the use of appropriate oral communication competencies in verbal and nonverbal interactions to fit the purpose and context of diverse situations. Reading comprehension competencies will focus on the analysis of fiction and non-fiction texts in order to generate ideas to compose different types of essays. Students apply the writing process and adequate language usage for academic writing on diverse topics. This course requires students to develop a basic research paper on a variety of issues from a global perspective and encourages the responsible use of technology and information skills to generate new knowledge.				
Calculus (3 credits)	<b>MATH 221 CALCULUS I 4 CREDITS</b>	<b>X</b>		<b>X</b>
	This course is an introduction to differential and integral calculus in one variable with an emphasis on the process of derivation and integration of functions. It is designed for students planning to earn a degree in science, mathematics, computer science, or engineering. The fundamental concepts and skills to study and develop in this course include: limit, the derivative as a rate of change, derivatives of functions and techniques to calculate them, applications of the derivative, integration as the area under a curve or between curves in an interval, integration of functions and the Fundamental Theorem of Calculus.			
Humanities (3 credits)	<b>HUGS 101 WORLD CULTURE I 3 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	The course is a critical study of the cultural evolution of humanity from its beginnings to the development of cities and urban life with attention to the ancient cities, especially those of the West. It studies aspects of culture from a transdisciplinary approach. The course is focused on the development, at a basic level, of the competences of critical thinking, ethics and diversity, and integrates the responsible management of technology and information technology for the search and use of information.			

Behavioral/Social Science (3 credits)	<b>SOGS 201 - HUMAN BEING AND SOCIAL CONSCIOUSNESS 3 CREDITS</b>	<b>X</b>	<b>X</b>	<b>X</b>
	<p>The course studies the social interaction and socialization processes that human beings undergo, from different theoretical perspectives. Exploration and explanation of the ways in which social stability is produced and reproduced over time. Critical analysis of social life, with the human being as primary subject and agent within the social structure. Emphasis on the development of different ideologies, forms of thought, and worldviews through which people interpret, and contribute to the production and reproduction of the social whole. The course contributes to the student's scholarly formation by providing a better understanding of the self within diverse social, cultural, and historical contexts. It is a competency-based course that encourages the responsible use of technology and information. This course will develop primary competencies such as, Critical thinking, Scientific inquiry, and Ethics and diversity, through the analysis and reflection on the topics and problems previously mentioned that permit the student to evaluate and propose solutions in regards to them.</p>			
	<b>PSYC 226 - DEVELOPMENTAL PSYCHOLOGY 3 CREDITS</b>	<b>X</b>		
	<p>In this course, human development is studied from conception to death, taking into account the psychological perspective. It emphasizes the interpersonal, cognitive, and motivational processes that arise in each stage. Throughout the course, the student will examine the different psychological topics that have been highlighted in the study of each stage. The most recent literature will be analyzed with reference to the findings of scientific research in the study of human development.</p>			