

## DEPARTMENT OF BIOLOGY

As one of the largest instructional units in the College of Arts and Sciences, the Department of Biology offers courses in Biology (BIOL), **the Bachelor of Science (B.S.) Degree in Biology, the Master of Science (M.S.) Degree in Biology, and a minor in Biology for students pursuing majors in other departments where the declaration of a minor is required.** In addition, the Department of Biology serves as the academic unit overseeing Texas Southern University's Pre-Nursing Program, which is a non-degreed program designed to prepare students for admission into a Bachelor of Science (B.S.) Degree in Nursing degree program. The teaching facilities, research facilities, and faculty members for the Department are housed on the second and third floors of TSU Science Center with the Department Office located in Room 203.

**Students interested in pursuing the Master of Science in Biology should consult the Graduate School Bulletin of Texas Southern University for further information.**

The mission of the Department of Biology is threefold: (1) to provide the opportunity for all students who matriculate through Texas Southern University to become better informed about biological phenomena and life processes, as well as apply information and knowledge gained toward an improved understanding of man, society, and the universe; (2) to provide undergraduate students with the appropriate background in Biology that will allow them to pursue medical, biomedical, and other allied or related careers; and (3) to ensure that undergraduates who intend to matriculate in graduate programs in the biological sciences, or related areas, are adequately prepared.

**In pursuing the B.S. in Biology, students may select from the Comprehensive or the Pre-Health Professional curricula.** The Comprehensive curriculum is designed to prepare students to enter the workforce or for additional study at the graduate level, while the Pre-Health Professional curriculum is intended to prepare students for professional schools (Medical, Dental, Veterinary, Optometry, Physical Therapy and etc.) upon graduation. Students should contact professional schools directly to ascertain specific admission requirements. The specific requirements for the B.S. in Biology are described, in detail, below. **All students majoring in Biology must declare and complete a minor in a second academic discipline if they are first-time degree seekers. Grades of "C" or better, where grades of "C-" are unacceptable, must be earned in all courses needed to satisfy the major.** Students should seek detailed advisement from their designated advisors when selecting a minor because the selection of a minor could impact the total number of credits required for graduation. **In no case will a student majoring in Biology qualify for graduation at the undergraduate level without satisfactorily completing a minimum of 129 semester credit hours.**

The Biology undergraduate curriculum at Texas Southern University is designed to provide a comprehensive general education in the natural sciences, humanities, and social sciences and a strong foundation in the principles of modern biology. Interested students must first gain admission to the University, must satisfy ASSET requirements, and remove deficiencies identified at the time of admission through the General University Academic Center (GUAC). Shortly after arriving at Texas Southern University, all students interesting in pursuing a degree in Biology will be assigned a pre-major advisor, who will assist in planning the program of study and helping them to achieve their career goals. **Biology pre-majors may petition the department to declare their major as Biology upon the successful completion of Biology 111, 112, 131 and 132 with a cumulative GPA of 2.75. All Biology majors will be required to maintain a GPA of 2.75 with respect to courses in the following cognate areas: Biology, Chemistry, Mathematics, and Physics.** If a student's overall GPA falls below 2.75 for two consecutive semesters the student will be removed from the list of designated majors and minors in Biology. Once admitted, students are each assigned an official faculty advisor who must approve their individual schedules of courses for each semester or term of enrollment. All majors should request that the Faculty Chair or the Departmental Appointee evaluate their transcripts at the beginning of their senior year to verify eligibility for degree conferral at the end of that year. Grades of "C" or better, where grades of "C-" are unacceptable, must be earned in all courses needed to satisfy the major. **The passage of an exit examination is also required of graduating seniors.**

**Individuals interested in seeking certification for teaching in the public schools of Texas in Biology should contact the Teacher Certification Officer in the College of Education at Texas Southern University for application instructions.**

**For the minor in Biology, 21 semester credit hours are required** through enrollment in the following courses: BIOL 131 (3 credits), BIOL 132 (3 credits), BIOL 231 Cell Biology (3 credits), BIOL 232 Developmental (3 credits), and 9 additional 300-level or 400-level BIOL credits. Although students are required to take BIOL 111 (1 credit) and BIOL 112 (1 credit) as co-requisites with BIOL 131 and BIOL 132, respectively, these 2 credits are not counted toward the completion of the minor in Biology. In conjunction with these 21 credits, at least one year of college chemistry must be completed along with Mathematics 133 and 134. **Grades of "C" or better, where grades of "C-" are unacceptable, must be earned in all courses needed to satisfy the minor.**

The curriculum at Texas Southern University is designed so that students receive a broad exposure to important biological concepts in the core courses taken during the first two years. Students **“must”** complete these required core courses prior to registering for Biology courses within the Comprehensive or Pre-Health Professional curricula (see the Required Core Courses). This will allow students to gain the experience and perspective to make sound career decisions for advanced study during their junior and senior years. **All Biology majors are required to pass an exit examination prior to conferral of their degree. It is recommended that all Biology majors enroll to take the exit examination in the spring semester of the junior year.** Further information may be obtained by contacting the Department Office at (713)-313-7005.

**LISTING OF FACULTY IN THE DEPARTMENT**

<p><b>Abdel-Rahman, Fawzia</b>  <b>Professor</b>                      B.Sc., University of Cairo, Egypt                      M.S., Ph.D., University of California at Davis</p>	<p><b>Jejelowo, Olufisayo</b>  <b>Professor</b>                      B.Sc. (Honors), University of Lagos, Nigeria                      M.Sc., Ph.D., University of Manchester, United Kingdom</p>
<p><b>DuMond, James W.</b>  <b>Associate Professor</b>                      B.S., Eastern Montana College                      M.S., Montana Tech                      Ph.D., University of Alabama at Birmingham</p>	<p><b>Miranda, Hector</b>  <b>Assistant Professor</b>                      B.S., M.S., University of the Philippines at Los Ba os                      Ph.D., University of Cincinnati</p>
<p><b>Fadulu, Sunday O.</b>  <b>Professor</b>                      B.S., Oklahoma Baptist University                      M.S., Ph. D., University of Oklahoma</p>	<p><b>Ramesh, Govindarajan</b>  <b>Assistant Professor</b>                      B.S., M.S., Ph.D., University of Madras, India</p>
<p><b>Ghosh, Debabrata</b>  <b>Professor</b>                      B.Sc., The University of Calcutta, India                      M.S., Ph.D., Texas A &amp; M University                      Post-Doctoral Studies, University of Texas at Austin</p>	<p><b>Shishodia, Shishir</b>  <b>Assistant Professor</b>                      B. S., Ranchi University, Ranchi, India.                      M.S., Ph.D., Banaras Hindu University, Varanasi, India</p>
<p><b>Hillar, Marion</b>  <b>Professor</b>                      M.D., Ph.D., University Medical School at                      Gdansk, Poland</p>	<p><b>Sundaresan, Alamelu</b>  <b>Assistant Professor</b>                      B.Sc., Women's Christian College, Madras                      M.Sc, University of Pondicherry and                      The World Health Organizaton, Geneva                      Ph.D., University of Texas Health Science Center, Houston</p>
<p><b>Hogan, Yvonne H</b>  <b>Professor</b>                      B.S., M.S., Ph.D., Howard University</p>	<p><b>Williams, Warren</b>  <b>Associate Professor</b>                      B.S., M.S., Texas Southern University                      Ph.D., University of Illinois</p>
<p><b>Jackson, Desirée</b>  <b>Associate Professor</b>                      B.S., State University of New York College at                      Brockport                      Ph.D., Meharry Medical College</p>	

## BIOLOGY COURSES

- BIOL 111**                    **Biological Science Laboratory I (Previously BIOL 121)**                    (1)  
Laboratory course devoted to the study of basic life processes and the structural and functional organization of plants and animals. One hour of lecture and two hours of laboratory per week. Co-requisite: BIOL 131. **Listed as BIOL 1106 in the Texas Common Course Numbering System.**
- BIOL 112**                    **Biological Science Laboratory II (Previously BIOL 122)**                    (1)  
Continuation of Biology 111 with emphasis on biological concepts and processes. One hour of lecture and two hours laboratory per week. Prerequisite: BIOL 111. Co-requisite: BIOL 132. **Listed as BIOL 1107 in the Texas Common Course Numbering System.**
- BIOL 131**                    **Biological Science I**                    (3)  
Integrated approach to the study of basic biological principles which are presented through the hierarchy of living systems. Three hours of lecture per week. Co-requisite: BIOL 111. **Listed as BIOL 1306 in the Texas Common Course Numbering System.**
- BIOL 132**                    **Biological Science II**                    (3)  
Continuation of BIOL 131. Three hours of lecture per week. Prerequisites: BIOL 111, BIOL 131. Co-requisite: BIOL 112. **Listed as BIOL 1307 in the Texas Common Course Numbering System.**
- BIOL 135**                    **Human Anatomy and Physiology I**                    (4)  
Course designed for health careers and pre-nursing students emphasizing the structure-function relationships of human organ systems. Three hours of lecture and three hours of laboratory per week. Co-requisite: BIOL 135L. Prerequisites: BIOL 112 and BIOL 132. **Listed as BIOL 2401 in the Texas Common Course Numbering System.**
- BIOL 136**                    **Human Anatomy and Physiology II**                    (4)  
Continuation of BIOL 135. Three hours of lecture and three hours of laboratory per week. Co-requisite: BIOL 136L. Prerequisite: BIOL 135. **Listed as BIOL 2402 in the Texas Common Course Numbering System.**
- BIOL 143**                    **Survey of Life Science**                    (4)  
In-depth coverage of selected biological principles for non-majors covering the molecular through the population levels of life forms and functions. Methods of inquiry and analysis emphasized. Three hours of lecture and one hour of discussion/demonstrations per week. Co-requisite: BIOL 143L. **Listed as BIOL 1408 in the Texas Common Course Numbering System.**
- BIOL 211**                    **Cell Biology Laboratory**                    (1)  
Laboratory experiments and exercises to complement BIOL 231 Cell Biology. Three hours of laboratory per week. Co-requisite: BIOL 231.
- BIOL 212**                    **Developmental Biology Laboratory**                    (1)  
Laboratory experiments and exercises to complement BIOL 232 Developmental Biology. Three hours of laboratory per week. Co-requisite: BIOL 232.
- BIOL 231**                    **Cell Biology (Previously BIOL 241)**                    (3)  
Molecular biology of cells encompassing ultra-structure, biosynthesis of macromolecules, chromosome and gene structure, control of gene expression, cell cycles, cytoskeleton movement, and energetic. Three hours of lecture per week. Co-requisite: BIOL 211 (laboratory). Prerequisites: BIOL 111, BIOL 112, BIOL 131, BIOL 132, and one year of college level chemistry.
- BIOL 232**                    **Developmental Biology (Previously BIOL 243)**                    (3)  
Consideration of development in diverse organisms with an emphasis on comparative vertebrate development. Three hours of lecture per week. Co-requisite: BIOL 212 (laboratory). Prerequisites: BIOL 111, BIOL 112, BIOL 131, and BIOL 132.

- BIOL 245**                      **Human Anatomy and Physiology**                      (4)  
Integrated approach to the study of the organ systems of man for non-majors where the relationship between anatomy and function is emphasized. Three hours of lecture and three hours of laboratory per week. Co-requisite: BIOL 245L. Prerequisite: One year of college level biology. (BIOL 143 does not qualify in meeting this prerequisite.)
- BIOL 246**                      **Microbiology for Health Related Professions**                      (4)  
Morphology and physiology of microorganisms important in community health. Three hours of lecture and three hours of laboratory per week. Co-requisite: BIOL 246L. Prerequisites: BIOL 135 and BIOL 136. **Listed as BIOL 2420 in the Texas Common Course Numbering System.**
- BIOL 300**                      **Seminar for Health Related Professions**                      (1)  
Designed to broaden the perspectives of students preparing to pursue health professional careers. Students may enroll for a maximum of two semesters. One hour of lecture per week. Prerequisites: BIOL 112 and BIOL 132.
- BIOL 332**                      **Bioinformatics**                      (3)  
Investigates the application of molecular biology, computers and the internet to generate and manage DNA and protein sequence data. Lecture and laboratory will involve generation, management and analysis of real and archived (in Genbank) data, including that from the Human Genome Project. With emphasis on genome organization and evolution, archival (web-based) and information retrieval, sequence assembly, alignment, comparative genomics, phylogenetics and evolutionary inferences, analyses of protein structure and micro-array data. Two hours of lecture per week and three hours of laboratory. Co-requisite: BIOL 332L. Prerequisites: BIOL 131 and BIOL 132.
- BIOL 334**                      **Conservation Biology**                      (3)  
This course is designed to investigate biodiversity patterns across evolutionary time and place, the human impact on wild populations and habitats, the social, cultural and political issues at the local and global level, and search for sustainable solutions to a world of expanding human populations with limited resources. Three hours of lecture per week. Prerequisites: BIOL 131 and BIOL 132.
- BIOL 338**                      **Genetics**                      (3)  
In-depth discussion of the basic concepts of Mendelian, neo-Mendelian, molecular, and population genetics. Three hours of lecture per week. Prerequisites: Two years of college level biology and one year of college level chemistry.
- BIOL 340**                      **Biochemistry of Biological Compounds**                      (3)  
Physico-chemical nature of proteins, carbohydrates, lipids, and nucleic acids; kinetic function of enzymes; and structure of biological membranes. Three hours of lecture per week. Prerequisites: One year of college level biology and chemistry.
- BIOL 341**                      **Organismic Biology**                      (4)  
Comparative and integrated approach to the study of organisms emphasizing diversity, maintenance, coordination, and function of organ systems. Three hours of lecture and three hours of laboratory per week. Co-requisite: BIOL 341L. Prerequisites: BIOL 112 and BIOL 132.
- BIOL 343**                      **Ecology**                      (3)  
A study of ecosystems from the standpoint of functional dynamics as well as the roles of ecological, evolutionary and adaptive processes in shaping the environment. Three hours of lecture per week. Prerequisites: BIOL 112 and BIOL 132.
- BIOL 344**                      **Vertebrate Anatomy and Histology**                      (4)  
Gross and microscopic anatomy of the organ systems of vertebrates with an emphasis on histology essential to understanding drug effects on functional anatomy for pharmacy students. Co-requisite: BIOL 344L. Three hours of lecture and three hours of laboratory per week.
- BIOL 345**                      **Ecology Laboratory**                      (1)  
This course is designed for both field and laboratory ecological studies. Three hours of laboratory per week. Prerequisites: BIOL 112 and BIOL 132.





Bachelor of Science Degree in Biology  
Comprehensive Track  
Four Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
		CS 116 Computer Science I Lec	3
	14 hrs		17 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 338 Genetics	3
BIOL 231 Developmental Biology	3	BIOL 341 Organismic Biology	4
BIOL 212 Cell Biology Lab	1	CHEM 212 Organic Chemistry II lab	1
BIOL 232 Cell Biology	3	CHEM 232 Organic Chemistry II Lec	3
CHEM 211 Organic Chemistry I Lab	1	HIST 231 Social & Political History of the United States to 1877	3
CHEM 231 Organic Chemistry I Lec	3	PSY 131 or SOC 157 or SOC 158, Intro to Psychology or Sociology or Contemporary Social Issues	3
MATH 241 Calculus & Analytic Geometry I	4		
	16 hrs		17 hrs

Third Year			
Fifth Semester		Sixth Semester	
BIOL 347 Microbiology	4	BIOL Electives	4
CHEM 322 Quantitative Analysis Lab	2	BIOL 443 Molecular Biology	4
CHEM 332 Quantitative Analysis Lec	3	ENG 2xx Upper level English	3
MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3	HIST 232 Social & Political History of the United States since 1877	3
SC 135 or 136 Business & Professional Communication or Public Address	3	POLS 231 American Political Systems I	3
	15 hrs		17 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
BIOL Electives	7	BIOL Electives	6
Foreign Language I	3	Foreign Language II	3
POLS 232 American Political Systems II	3	MATH 231 or BIOL 460 Elementary Statistics or Biostatistics	3
PHYS 213 – College Physics lab I	1	PHYS 214 – College Physics Lab II	1
PHYS 237 – College Physics I	3	PHYS 238 – College Physics II	3
	17 hrs		16 hrs

Bachelor of Science Degree in Biology  
Comprehensive Track  
Five Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
	14 hrs		14 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 212 Cell Biology Lab	1
BIOL 231 Developmental Biology	3	BIOL 232 Cell Biology	3
CHEM 211 Organic Chemistry I Lab	1	CHEM 212 Organic Chemistry II lab	1
CHEM 231 Organic Chemistry I Lec	3	CHEM 232 Organic Chemistry II Lec	3
MATH 241 Calculus & Analytic Geometry I	4	HIST 231 Social & Political History of the United States to 1877	3
		PSY 131 or SOC 157 or SOC 158 Intro to Psychology or Sociology or Contemporary Social Issues	3
	12 hrs		14 hrs

Third Year			
Fifth Semester		Sixth Semester	
BIOL 338 Genetics	3	BIOL Electives	3
BIOL 341 Organismic Biology	4	ENG 2xx Upper level English	3
CHEM 322 Quantitative Analysis Lab	2	HIST 232 Social & Political History of the United States since 1877	3
CHEM 332 Quantitative Analysis Lec	3	POLS 231 American Political Systems I	3
	12 hrs		12 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
BIOL 443 Molecular Biology	4	BIOL 347 Microbiology	4
Foreign Language I	3	Foreign Language II	3
POLS 232 American Political Systems II	3	MATH 231 or BIOL 460 Elementary Statistics or Biostatics	3
PHYS 213 – College Physics lab I	1	PHYS 214 – College Physics Lab II	1
PHYS 237 – College Physics I	3	PHYS 238 – College Physics II	3
	14 hrs		14 hrs

Fifth Year			
Ninth Semester		Tenth Semester	
BIOL Electives	6	BIOL Electives	8
CS 116 Computer Science I Lec	3	SC 135 or 136 Business & Professional Communication or Public Address	3
MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3		
	12 hrs		11 hrs

Bachelor of Science Degree in Biology  
 Comprehensive Track  
 Six Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
	11 hrs		11 hrs
Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 212 Cell Biology Lab	1
BIOL 231 Developmental Biology	3	BIOL 232 Cell Biology	3
CHEM 211 Organic Chemistry I Lab	1	CHEM 212 Organic Chemistry II lab	1
CHEM 231 Organic Chemistry I Lec	3	CHEM 232 Organic Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
	11 hrs		11 hrs
Third Year			
Fifth Semester		Sixth Semester	
BIOL 338 Genetics	3	BIOL Electives	3
BIOL 341 Organismic Biology	4	ENG 2xx Upper level English	3
CHEM 322 Quantitative Analysis Lab	2	POLS 231 American Political Systems I	3
CHEM 332 Quantitative Analysis Lec	3		
	12 hrs		9 hrs
Fourth Year			
Seventh Semester		Eighth Semester	
BIOL 443 Molecular Biology	4	BIOL 347 Microbiology	4
HIST 231 Social & Political History of the United States to 1877	3	HIST 232 Social & Political History of the United States since 1877	3
POLS 232 American Political Systems II	3	MATH 231 or BIOL 460 Elementary Statistics or Biostatistics	3
	10 hrs		10 hrs
Fifth Year			
Ninth Semester		Tenth Semester	
BIOL Electives	3	BIOL Electives	4
Foreign Language I	3	Foreign Language II	3
MATH 241 Calculus & Analytic Geometry I	4	SC 135 or 136 Business & Professional Communication or Public Address	3
MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3		
	13 hrs		10 hrs
Sixth Year			
Eleventh Semester		Twelfth Semester	
BIOL Electives	3	BIOL Electives	4
CS 116 Computer Science I Lec	3	PHYS 214 – College Physics Lab II	1
PSY 131 or SOC 157 or SOC 158 Intro to Psych or Sociology or Social Issues	3	PHYS 238 – College Physics II	3
PHYS 213 – College Physics lab I	1		
PHYS 237 – College Physics I	3		
	13 hrs		8 hrs

Bachelor of Science Degree in Biology  
Pre-Health Professional Track  
Four Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
		CS 116 Computer Science I Lec	3
	14 hrs		17 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 300 Seminar	1
BIOL 231 Developmental Biology	3	BIOL 338 Genetics	3
BIOL 212 Cell Biology Lab	1	BIOL 341 Organismic Biology	4
BIOL 232 Cell Biology	3	CHEM 212 Organic Chemistry II lab	1
CHEM 211 Organic Chemistry I Lab	1	CHEM 232 Organic Chemistry II Lec	3
CHEM 231 Organic Chemistry I Lec	3	HIST 231 Social & Political History of the United States to 1877	3
MATH 241 Calculus & Analytic Geometry I	4	PSY 131 or SOC 157 or SOC 158 Intro to Psychology or Sociology or Contemporary Social Issues	3
	16 hrs		17 hrs

Third Year			
Fifth Semester		Sixth Semester	
BIOL 340 Biochemistry of Biological Comp.	3	BIOL 441 Histology	4
BIOL 347 Microbiology	4	BIOL 443 Molecular Biology	4
CHEM 322 Quantitative Analysis Lab	2	ENG 2xx Upper level English	3
CHEM 332 Quantitative Analysis Lec	3	HIST 232 Social & Political History of the United States since 1877	3
MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3	POLS 231 American Political Systems I	3
SC 135 or 136 Business & Professional Communication or Public Address	3		
	18 hrs		17 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
BIOL 454 Immunology	3	BIOL 452 Intermediary and Cellular Metabolism	3
MATH 231 or BIOL 460 Elementary Statistics or Biostatistics	3	BIOL 447 Human Physiology	3
Foreign Language I	3	Foreign Language II	3
POLS 232 American Political Systems II	3	PHYS 214 – College Physics Lab II	1
PHYS 213 – College Physics lab I	1	PHYS 238 – College Physics II	3
PHYS 237 – College Physics I	3		
	16 hrs		13 hrs

Bachelor of Science Degree in Biology  
Pre-Health Professional Track  
Five Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
	14 hrs		14 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 212 Cell Biology Lab	1
BIOL 231 Developmental Biology	3	BIOL 232 Cell Biology	3
CHEM 211 Organic Chemistry I Lab	1	CHEM 212 Organic Chemistry II lab	1
CHEM 231 Organic Chemistry I Lec	3	CHEM 232 Organic Chemistry II Lec	3
MATH 241 Calculus & Analytic Geometry I	4	HIST 231 Social & Political History of the United States to 1877	3
		PSY 131 or SOC 157 or SOC 158 Intro to Psych or Sociology or Social Issues	3
	12 hrs		14 hrs

Third Year			
Fifth Semester		Sixth Semester	
BIOL 300 Seminar	1	BIOL 341 Organismic Biology	4
BIOL 340 Biochemistry of Biological Comp.	3	BIOL 452 Intermediary and Cellular Metabolism	3
BIOL 338 Genetics	3	ENG 2xx Upper level English	3
CHEM 322 Quantitative Analysis Lab	2	HIST 232 Social & Political History of the United States since 1877	3
CHEM 332 Quantitative Analysis Lec	3		
	12 hrs		13 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
BIOL 443 Molecular Biology	4	BIOL 347 Microbiology	4
MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3	BIOL 447 Human Physiology	3
POLS 231 American Political Systems I	3	CS 116 Computer Science I Lec	3
SC 135 or 136 Business & Professional Communication or Public Address	3	POLS 232 American Political Systems II	3
	13 hrs		13 hrs

Fifth Year			
Ninth Semester		Tenth Semester	
BIOL 454 Immunology	3	BIOL 441 Histology	4
MATH 231 or BIOL 460 Elementary Statistics or Biostatistics	3	Foreign Language II	3
Foreign Language I	3	PHYS 214 – College Physics Lab II	1
PHYS 213 – College Physics lab I	1	PHYS 238 – College Physics II	3
PHYS 237 – College Physics I	3		
	13 hrs		11 hrs

Bachelor of Science Degree in Biology  
Pre-Health Professional Track  
Six Year Degree Plan - Total Credits: 129

First Year			
First Semester		Second Semester	
BIOL 111 Biological Science I Lab	1	BIOL 112 Biological Science II Lab	1
BIOL 131 Biological Science I Lec	3	BIOL 132 Biological Science II Lec	3
CHEM 111 General Chemistry I Lab	1	CHEM 112 General Chemistry II Lab	1
CHEM 131 General Chemistry I Lec	3	CHEM 132 General Chemistry II Lec	3
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
	11 hrs		11 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 211 Developmental Biology Lab	1	BIOL 212 Cell Biology Lab	1
BIOL 231 Developmental Biology	3	BIOL 232 Cell Biology	3
CHEM 211 Organic Chemistry I Lab	1	CHEM 212 Organic Chemistry II lab	1
CHEM 231 Organic Chemistry I Lec	3	CHEM 232 Organic Chemistry II Lec	3
MATH 133 College Algebra	3	MATH 136 Precalculus	3
	11 hrs		11 hrs

Third Year			
Fifth Semester		Sixth Semester	
BIOL 300 Seminar	1	BIOL 341 Organismic Biology	4
BIOL 340 Biochemistry of Biological Comp.	3	BIOL 452 Intermediary and Cellular Metabolism	3
BIOL 338 Genetics	3	ENG 2xx Upper level English	3
CHEM 322 Quantitative Analysis Lab	2		
CHEM 332 Quantitative Analysis Lec	3		
	12 hrs		10 hrs

Fourth Year			
Seventh Semester		Eighth Semester	
BIOL 443 Molecular Biology	4	BIOL 347 Microbiology	4
MATH 241 Calculus & Analytic Geometry I	4	CS 116 Computer Science I Lec	3
POLS 231 American Political Systems I	3	POLS 232 American Political Systems II	3
	11 hrs		10 hrs

Fifth Year			
Ninth Semester		Tenth Semester	
MATH 231 or BIOL 460 Elementary Statistics or Biostatics	3	BIOL 447 Human Physiology	3
Foreign Language I	3	Foreign Language II	3
SC 135 or 136 Business & Professional Communication or Public Address	3	MUSI 131 or ART 131 Intro to Music or Drawing and Comp. I	3
HIST 231 Social & Political History of the United States to 1877	3	HIST 232 Social & Political History of the United States since 1877	3
	12 hrs		12 hrs

Sixth Year			
Ninth Semester		Tenth Semester	
BIOL 454 Immunology	3	BIOL 441 Histology	4
PSY 131 or SOC 157 or SOC 158 Intro to Psych or Sociology or Social Issues	3	PHYS 214 – College Physics Lab II	1
PHYS 213 – College Physics lab I	1	PHYS 238 – College Physics II	3
PHYS 237 – College Physics I	3		
	10 hrs		8 hrs

Pre-Nursing Curriculum  
Two Year Plan - Total Credits: 70

First Year			
First Semester		Second Semester	
ENG 131 Freshman English I	3	ENG 132 Freshman English II	3
BIOL 131 Biological Science I Lecture	3	BIOL 132 Biological Science II Lecture	3
MATH 133 College Algebra	3	SC 135 or SC 136 Business and Professional Communication or Public Address	3
PSY 131 General Psychology	3	CHEM 111 General Chemistry Laboratory I	1
SOC 157 Introduction to Sociology	3	CHEM 131 General Chemistry I Lecture	3
		Visual & Performing Arts	3
	15 hrs		16 hrs

First Summer		Second Summer	
HIST 231 Social and Political History of the United States to 1877	3	HIST 232 Social and Political History of the United States since 1877	3
POLS 231 American Political Systems I	3	POLS 232 American Political Systems II	3
	6 hrs	HIST	6 hrs

Second Year			
Third Semester		Fourth Semester	
BIOL 135 Human Anatomy and Physiology I	4	BIOL 136 Human Anatomy and Physiology II	4
FN 233 Elementary Nutrition	3	BIOL 246 Microbiology for Health Related Professions	4
PHIL 231 Introduction to Philosophy	3	PSY 234 Elementary Statistics	3
SOCW 345 Human Behavior in the Social Environment I	3	CS 116 Introduction to Computer Science I	3
	13 hrs		14 hrs

NOTE: Completion of this program does not guarantee acceptance to a Nursing program. Students must contact other institutions for specific admission requirements.

The above courses satisfy prerequisites for the Nursing programs of Prairie View A&M University, University of Texas Medical Branch (UTMB) at Galveston and University of Texas at Houston.

Texas Woman's University (TWU) requires SOC 141 and HIST 349, and allows substitution of Literature for PHIL 231.

Houston Baptist University (HBU) requires six hours of foreign language, for the Humanities requirement, and two hours of Physical Education, but not FN 233.