Students must complete a minimum of 42 credits under the BIOL or SUST prefix to earn a degree. Students must complete all core classes (22-27 credits) and six courses from at least **three** of the upper level baskets (3 must be 300 level or higher with a minimum of 18 credits): Students choosing an emphasis shall select **4 courses from one basket and 2 courses from at least two** of the other baskets. See Page 2 for Applied Microbiology and Sustainability and Environmental Stewardship reqs.

GENERAL EDUCATION – 33 credits	**BIOLOGY CORE REQUIREMENTS – 22 - 27 credits**	
I. Skills/Processes for Literacy (3 courses)	BIOL 117 General Biology I (4) F/S	BIOL 118 General Biology II (4) S/F
A. INTD 101 University Seminar	BIOL 260 General Genetics (4) F/S (@	BIOL 270 Evolution (4) S #
B. ENGL 101 Composition: Theme Writing	SCI 498-Advanced Topics (2) S or BIOL 401 Research 1 (3) F/S @ or SUST 499 (3) F/S for Sustainability conc or BIOL 499 (3) F/S for Applied Microbiology conc.	BIOL 115 – Human Systems (4) F/S **OR** BIOL 101 **and** BIOL 102 (8) – Anatomy and Physiology 1 and 2 F /S (101) and S (102)
C. ENGL 104 Composition: The Essay	**UPPER LEVEL BASKETS – minimum 18 credits**	
II. HUMANITIES (5 courses)	**SUSTAINABILITY & ENVIRONMENTAL STEWARDSHIP**	**MOLECULAR & MICROBIOLOGY**
A. Fine Arts (1 course): Art Music,Performance	SUST 101: Intro to Sustainability (3) F/S	BIOL 316 General Microbiology (4) F/S #
B. Literature/Language (1 course): ENGL or Foreign Language	SUST 201: Environmental Science and Health (3) F/S	BIOL 390 Biotechnology (4) F #
C. Philosophy (1 course)	SUST 150: Sustainability Exploration Seminar (3) S	BIOL 391 Molecular Genetics (4) S* $
D. Humanities Electives (2 courses)	SUST 350: Sustainability Expedition S	BIOL 416 Microbial Genetics (4) F*&
1. HUM 101/301 or HIST 131/331	SUST 375: Strategies in Sustainability (3) F	BIOL 440 Applied Microbiology (4) S*&
2. One additional elective from ENGL, The Arts/ Aesthetics, Foreign Language, HUM,PHIL,REL		**ANATOMY & PHYSIOLOGY**
III. SOCIAL SCIENCE (3 courses)	**ECOLOGY**	BIOL 220 Exercise Science (3) @*
A. American History or Government	BIOL 216 Plants & People (4) S *	BIOL 303 Comparative Vertebrate Anatomy (4) F* ^
B. Social Science Electives (2 courses from ECON, GEOG, HIST, PSCI, PSYC, SOC)	BIOL 231 Conservation Biology (3)F*@	BIOL 350 Intro to Gross Anatomy (4) S* (*) or >
IV. Natural Science/Quantitative Reasoning (met through major)	BIOL 314 Botany (4) S* ^	BIOL 351 Cell Biology (4) S (*) or >
V. General Education Electives (2 courses): From with-in the College of Arts and Sciences	BIOL 352 General Ecology (4) F* $ or ^	BIOL 354 Immunology (3) S*&
ADDITIONAL COURSE CHOICES (not required and not part of the baskets)	BIOL 381 Ornithology (4) S* ^	BIOL 394 Advanced Physiology (3) F @ or >
CHEM 353 – Quantitative Analysis (4) F	BIOL 304 Zoology (4) F* #	BIOL 395 Pathophysiology (3) S !*
CHEM 320 Biochemistry (4) F		
CHEM 321 Biochemistry II (3) S*	**NON-BIOLOGY SCIENCE AND MATH REQUIREMENTS (30 credits min)**	
BIOL 101 and/or 102 – Anatomy and Physiology	MATH 151 Calculus I (4) F *(recommended)* **OR** MATH 125 College Algebra & Trigonometry (3) F/S	MATH 141 Elementary Stats (3) F/S **OR** MATH 420 (3) Statistics for Sci Research **OR** PSYC 341 Understanding Statistical Inference
ORGL 472–Understanding Organization Behavior (3)		
SCI 250 - Computational Science (3) see catalog for prereqs, S		
TIMING -* denotes that the course is offered every other year	CHEM 103 General Chemistry I (4) F	PHYS 153 Calculus-Based Physics I (4) S *(recommended)* **OR** PHYS 103 Gen. Physics I (4) F
	CHEM 104 General Chemistry II (4)S	
PREREQUISITES F=Fall S=Spring @=117/118, # =260 > = 101/102 & = 316 $ = 270 ! = 394 (*) = 115	CHEM 203 Organic Chemistry I (4) F	PHYS 154 Calculus-Based Physics II (4) S *(recommended)* **OR** PHYS 104 Gen. Physics II (4) S
	CHEM 204 Organic Chemistry II (4) S	

COREQUISITES ^ = 270 a = 394 In order to graduate 128 credit hours must be completed. Last 30 credit hours must be completed in residency.		**Alternate Course Offerings** Fall Even Years – Conservation Biology, Comparative Vertebrate Anatomy Fall Odd Years – Ecology, Zoology, Physical Chemistry 1 Spring Even Years – Pathophys, Ex Science, Plants and People, Immunology, Ornithology, Physical Chemistry 2, Inorganic Chemistry Spring Odd Years – Intro to Gross, Molecular Genetics, Botany

Concentrations of the Biology Major	**Biology Major: Pre-Health Professions Career Tracks Required and/or Recommended Course Material**		
Biomedical Science	**Medical School & Physician Assistant School**	**Physical Therapy School**	**Veterinary Medicine School**
Core plus four courses from the Anatomy and Physiology Basket and two courses from the Molecular Biology and Microbiology Basket AND CHEM 320 and BIOL 354.	BIOL 101/102 OR 115, BIOL 351, CHEM 320, SOC 101, PSYC 101, some programs require two semesters of calculus. Some programs like to see microbiology, immunology, and pathophysiology. Biochemistry 2 is recommended for students taking the MCAT Some medical schools may require 2 semesters of Anatomy. If this is the case BIOL 303 or 350 are possible selections.	BIOL 101/102 OR 115, 300-level (to include either BIOL 316, 351, 354, 391) BIOL 394, ISYS 100, HEPR 108, PSYC 101, PSYC 254 Some programs require an additional human anatomy course. Additional Requirements: Min recommended GPA 3.5 GRE, PT Volunteer Experience	One Ecology course, BIOL 101/102, BIOL 303, CHEM 320, BIOL 316, BIOL 351, BIOL 394 & Mammalian Physiology Lab. ECON 202, PSYC 101, SCI 131, BIOL 304 – Zoology
Applied Microbiology			
Core plus five courses from the Molecular and Microbiology and Anatomy & Physiology Baskets to include BIOL 316, BIOL 351, BIOL 390, BIOL 416, BIOL 418, and CHEM 320 and CHEM 353. BIOL 354 and MATH 420. ORGL 472 is recommended			
SUSTAINABILITY & ENVIRONMENTAL STEWARDSHIP	**Dental School**		**Pharmacy School**
Core plus 4 courses from the following: SUST 101, SUST 150, SUST 201, SUST 350, SUST 375, and two courses from the Ecology basket, plus one from one of the other baskets, HUM 211 is required and LGL 460, ADAH/SCI 377, HIST 325 and HIST 475 are recommended. A Chemistry minor is strongly recommended but not required.	BIOL 101/102 OR 115, BIOL 316, BIOL 394, CHEM 320, SOC 101, PSYC 101, ECON 202, a second semester of Calculus is required for some schools.		BIOL with labs 8-12 hours CHEM (Gen and Org) 8 hours, Physics 8 hours, English 6-12 hours
Biotechnology	**Podiatry School**		**Optometry School**
Core plus four courses from the Molecular Biology and Microbiology Basket and two courses from one or more baskets. CHEM 320 and one other CHEM course 300 or higher.	BIOL with labs 8-12 hours CHEM (Gen and Org) 8 hours, Physics 8 hours, English 6-12 hours		BIOL 101/102 OR 115, CHEM 320 and BIOL 316, ECON 202, PSYC 101. Calculus and Calculus-based Physics required