

**CURRICULUM SUMMARY FOR THE BACHELOR OF SCIENCE DEGREE
IN BIOLOGY GIS (GEOGRAPHIC INFORMATION SYSTEMS) CERTIFICATE
TOTAL CREDITS REQUIRED: 126**

CORE CURRICULUM * (STANDARD)	TCCNS	MAJOR (BIOLOGY)	OTHER REQUIREMENTS	MINOR CONCENTRATION
42 Credits	EQUIVALENT	50 Credits	25 Credits	21 Credits
<u>Communication:</u>		BIOL 111 (1)	CHEM 111 (1)	
ENG 131 (3)**	ENGL 1301	BIOL 112 (1)	CHEM 112 (1)	
ENG 132 (3)	ENGL 1302	BIOL 131 (3)	CHEM 211 (1)	
<u>Mathematics:</u>		BIOL 132 (3)	CHEM 212 (1)	
MATH 133 (3)	MATH 1314	BIOL 211 (1)	CHEM 231 (3)	
<u>Life and Physical Sciences:</u>		BIOL 212 (1)	CHEM 232 (3)	
CHEM 131 (3)	CHEM 1311	BIOL 231 (3)	MATH 136 (3)	
CHEM 132 (3)	CHEM 1312	BIOL 232 (3)	MATH 241 (4)	
<u>Language, philosophy, and culture:</u>		BIOL 338 (3)	PHYS 213 (1)	
ENG 230 or ENG 231 or ENG 235 or ENG 244		BIOL 340 (3)	PHYS 214 (1)	
<u>Creative Arts:</u>		BIOL 341 (4)	PHYS 237 (3)	
MUSI 239, THEA 130, Or ART 139	ART 135, ART 137	BIOL 347 (4)	PHYS 238 (3)	
<u>American History:</u>		BIOL 401 (3)	FS 102 (1)	
<u>American History:</u>		BIOL 441 (4)		
HIST 231 (3)	HIST 1301	BIOL 443 (4)	3 GIS Cert Courses	
HIST 232 (3)	HIST 1302	BIOL 447 (3)	ES 441 (3)	
<u>Government/Political Science</u>		BIOL 454 (3)	ES 442 (3)	
POLS 235 (3)	GOVT 2305	BIOL 460 (3)	ES 443 (3)	
POLS 236 (3)	GOVT 2306			
<u>Social and Behavioral Sciences:</u>		All courses listed		
PSY 131 or	PSYC 2301	Above are		
SOC 157 or	SOCI 1301	Required		
SOC 158 (3)	SOCI 1306			
<u>Institutional Options:</u>		Plus 3 Upper Level		
CS 116 (3)	COSC 1301	Biol credits		
SC 135 or 136 (3)	SPCH 1321 or SPCH 1315	BIOL 300 (1), BIOL 332 (3), BIOL 334 (3), BIOL 343 (3), BIOL 344 (4), BIOL 345 (1),		
		BIOL 431 (3),BIOL 461 (3) BIOL 434 (3), BIOL 435 (3), BIOL 438 (3), BIOL 439 (3).		
		BIOL 441 (4), BIOL 446 (1), BIOL 447 (3), BIOL 448 (3), BIOL 451 (4), BIOL 452 (3)		

* Students should be advised by a major advisor prior to registering for any credit, particularly any core curriculum credit as listed.

** (N) represents the number of course credits.

*** In selecting Chemistry as a minor, Biology majors need only two additional courses: **CHEM 322 (2 credits)** and **CHEM 332 (3 credits)**. For other minors selected, up to 21 credits may be needed if these minors do not have credits required in other categories for the Biology degree.