

## BA BIOLOGY for BS SECONDARY ED

Revised 10/19 MDW

*Concepts in Biology 1* (BIOL 114) and *Concepts in Biology 2* (BIOL 115) should be taken during the freshman year; *Microbiology* (BIOL 242) and *Cell Biology* (BIOL 271) should be taken during the sophomore year. In addition to the specified courses listed on this page, the student selects 9 credit hours of approved elective courses in biology.

Chemistry and mathematics courses should be scheduled as early as possible in the program of study.

<p><b>Biology Core Requirements</b> (26 cr hrs)</p> <p>BIOL 114 Concepts in Biology 1            4</p> <p>BIOL 115 Concepts in Biology 2            4</p> <p>BIOL 242 Microbiology                      4</p> <p>BIOL 271 Cell Biology                        4</p> <p>BIOL 332 Genetics                            3</p> <p>BIOL 351 Ecology                              4</p>	<p><b>Physical Sciences Requirement</b> (12 cr hrs)</p> <p>CHEM 115 Chem for the Sciences 1        4</p> <p>CHEM 116 Chem for the Sciences 2        4</p> <p>CHEM 230 Fund Organic Chemistry        4</p> <p>PHYS 201 Introductory Physics 1         4</p>
<p><b>Physiology Requirement</b> (Select BIOL 479 AND one lecture course from among BIOL 472, 474, 477, 478, and 480)</p> <p>BIOL 479 Integrated Physiology Lab        1  <b>with</b> one of the following:</p> <p>BIOL 472 Animal Cell Physiology            3</p> <p>BIOL 474 Human Physiology                3</p> <p>BIOL 477 Plant Physiology                  3</p> <p>BIOL 478 Microbial Physiology            3</p> <p>BIOL 480 Comparative Animal Physiol    3</p>	<p><b>Mathematics Requirement</b> (6 cr hr)</p> <p>MATH 141 Introduction to Statistics        3</p> <p>MATH ____ college-level math class      3</p>
<p><b>Biology Electives</b> (9 cr hrs from biology and/or marine science)</p> <p>BIOL 333 Molecular Biology                3</p> <p>field course from approved list            3</p> <p>biology elective                                3</p>	

<b>Field Courses</b>		<b>Marine Science Courses</b>	
BIOL 200 Dendrology	3	MARSCI 221 Marine Invertebrates	3
BIOL 252 Field Zoology	3	MARSCI 241 Marine Biology	3
BIOL 253 Freshwater Biology	3	MARSCI 250 Wetlands Ecology	3
BIOL 263 Field Botany	3	MARSCI 260 Marine Ecology	3
BIOL 452 Limnology	3	MARSCI 300 Behavior Marine Org	3
BIOL 457 Entomology	3	MARSCI 330 Tropical Invertebrates	3
BIOL 459 Ornithology	3	MARSCI 334 Marine Embryology	3
any MARSCI course	3	MARSCI 342 Marine Botany	3
<b>Biology Elective Courses</b>		MARSCI 343 Ichthyology	3
BIOL 211 Invertebrate Zoology	3	MARSCI 344 Anat Marine Chordates	3
BIOL 212 Vertebrate Zoology	3	MARSCI 345 Marine Ornithology	3
BIOL 222 Comp Biol Plants	3	MARSCI 394 Comp Phys Marine Org	3
BIOL 233 Human Genetics	3	MARSCI 431 Ecol Marine Plankton	3
BIOL 334 Molecular Biology Lab	1	MARSCI 432 Marine Evol Ecol	3
BIOL 342 Medical Microbiology	3	MARSCI 441 Biology of Mollusks	3
BIOL 343 Immunology	3	MARSCI 464 Biol Oceanography	3
BIOL 350 Plant Pathology	3	MARSCI 470 Research Diver Meth	3
BIOL 361 Comp Vert Anatomy	3	MARSCI 490 Aquaculture	3
BIOL 364 Vertebrate Histology	3	MARSCI 491 Coral Reef Ecology	3
BIOL 390 UG Research in Biol 1	3	MARSCI 492 Marine Mammals	3
BIOL 391 UG Research in Biol 2	3	MARSCI 493 Behavioral Ecology	3
BIOL 411 Radiation Biology	3		
BIOL 420 Global Change Biology	3		
BIOL 430 Evolution	3		
BIOL 431 Developmental Biology	3		
BIOL 432 Microbial & Molec Genet	3	<b>Restrictions on Courses</b>	
BIOL 435 Bioinformatics	3	1. A maximum of 3 cr hrs of BIOL 490 may be applied as biology elective credit toward the degree.	
BIOL 442 Virology	3	2. A maximum of 6 cr hrs from among BIOL 390, 391, 490, 493 and 494 may be applied as biology elective credit.	
BIOL 443 Advanced Immunology	3	*Current Topics in Biology may be repeated only once if the topic is different, giving a maximum of 6 credits.	
BIOL 444 Tissue Culture	3		
BIOL 445 Pharm for Health Sciences	3		
BIOL 450 Mycology	3		
BIOL 451 Conservation Biology	3		
BIOL 455 Environmental Microbiology	3		

BIOL 460 Population Biology	3	
BIOL 461 Animal Behavior	3	
BIOL 470 Medical Parasitology	3	
BIOL 476 Neurophysiology	1	
BIOL 481 Senior Biology Seminar	3	
BIOL 489 Current Topics in Biology*	3	
BIOL 490 Internship Biol/AHS	3	
BIOL 493 Honors Indep Study 1	3	
BIOL 494 Honors Indep Study 2	3	

## Education and Related Courses

EDFOUND 204	Educational Computing & Technology	3
EDFOUND 206	Teachers, Schools, & Society	1
EDFOUND 291	Principles of Teaching	3
EDFOUND 311	Classroom Measurement & Assessment*	3
SECED 453	Teaching of Science*	3
* PROFSTUD 320 Field-Based Inclusion Practicum (6 cr) can substitute for EDFOUND 311 and SECED 453		
EDFOUND 406	Multicultural Education	3
EDFOUND 427	Classroom Manage & Effective Discipline	3
EDFOUND 497	Student Teaching (1 <sup>st</sup> experience)	6
EDFOUND 498	Student Teaching (2 <sup>nd</sup> experience)	6
SPECED 101	Intro to Individuals w/Exceptionalities	3
SPECED 275	Linking Assessment and Instruction	3
SPECED 358	Methods of Instruction Indiv w/Disabilities	3
PROFSTUD 494	ELL Strategies & Methods	3
ENGLISH 101	Foundations of College English	3
ENGLISH	literature course (151, 152, 156, 226, 227, 236, 237, 246, 247)	3
PSYCH 101	General Psychology	3
PSYCH 212	Adolescent Development	3



