

## BIOLOGICAL SCIENCES DEGREE: Microbiology Emphasis Plan Effective Fall 2007

<b>01. Written and Oral Communication (8 hrs minimum; at least 4 courses)</b>	<b>Credit Hours</b>
01. ENG 101                                      Composition One	3
02. ENG 102                                      Composition Two	3
03. Senior Capstone Experience            See Major Requirements (over)	
04. Upper level Writing Intensive (WI) course*	1-3
* Students may take a WI course either in the major or in another discipline.	
<b>05. Speech Communication (Select 3 hrs)      [BSC Department Requirement]</b>	
SCM 111                                      Oral Communication	3
SCM 305                                      Interpersonal Communication	3
SCM 320                                      Business and Professional Speaking	3
SCM 330                                      Small Group Communication	3
<b>02. Basic Science and Mathematics (Select 3 hrs)</b>	
01. Laboratory Sciences                      See Major Requirements (over)	
02. Mathematics:                              Calculus Competency**	
MAT 314 <b>or</b> Calculus for Arts and Science	3
MAT 167                                      Calculus I with Analytical Geometry	3
** The pre-requisite for Calculus is high school trigonometry. Students lacking the appropriate background may take MAT 101 College Algebra / MAT 101E Explorations in College Algebra OR MAT 103 Plane Trigonometry OR MAT 128 Precalculus Mathematics before enrolling in a Calculus course. Note that the Mathematics Department states that certain courses, including MAT 101, MAT 103, MAT 128, "are open only to freshmen. Other students desiring to take these courses must have approval from the Chair of the Department of Mathematics. Only two of the following courses can be taken for credit: MAT 101, MAT 103, MAT 128."	
03. Computing Competency                  See Other Required Courses (over)	
<b>03. Global History and Culture (12 hrs)</b>	
01. <i>Social Sciences</i> (Select 3 hrs)	
ANT101                                      The Human Experience	3
GHY 101                                      World Regional Geography	3
SOC 101                                      Understanding Society	3
<i>Humanities</i> (9 Hrs)	
02. ENG 203                                      World Literature	3
03. HIS 101 <b>or</b> World Civilizations: Beginnings to 1500 C.E.	3
HIS 102                                      World Civilizations: 1500 to the Present	3
04. HIS 101 <b>or</b> HIS 102 <b>or</b>	3
PHI 151 <b>or</b> Introduction to Philosophy	3
REL 131                                      Comparative Religion	3
<b>04. Aesthetic Values (Select 3 hrs)</b>	
ART 130                                      The Art Experience	3
DAN 130                                      Dance Appreciation	3
MUS 365                                      The Enjoyment of Music	3
THE 100                                      Theatrical Expressions	3
<b>05. Decision Making and Responsibility (Select 3 hrs)</b>	
ECO 101                                      Basic Economics	3
PHI 171                                      Ethics and Good Living	3
PSY 110                                      General Psychology	3
PS 101                                        American Government	3
COH 100                                      Concepts of Wellness	3
COH 101                                      Diversity and Social Justice	3

**Core Total: 31-33 hrs**

**Minimum of 124 Hours in Program**

Minimum of 64 hours required from a four-year college; 45 hours at 300 or 400 level; last 32 hours taken at USM.

<b>06. Major/Emphasis Requirements (46 hrs)</b>		<b>Credit Hours</b>
01. BSC 110/BSC 110L	Principles of Biological Science I	3/1
02. BSC 111/BSC 111L	Principles of Biological Science II	3/1
03. BSC 370	Genetics	4
04. BSC 380/BSC 380L	General Microbiology	3/1
05. BSC 477/BSC 477L	Microbial Genetics	3/1
06. BSC 484/BSC 484L	Virology	3/1
07. BSC 486/BSC 486L	Immunology and Serology	3/1
08. BSC 487/BSC 487L	Microbial Physiology	3/1
09. Applied Microbiology (Select 4 hours)		
BSC 478L	Molecular Biology Laboratory	4
BSC 481/481L	Pathogenic Microbiology	3/1
BSC 488/488L	Food Microbiology	3/1
BSC 489/489L	Environmental Microbiology	3/1
10. Advanced Microbiology (Select at least 3 hours)		
BSC 382	Microbial Ecology	3
BSC 476	Molecular Biology	3
BSC 482/482L	Advanced Pathogenic Microbiology	3/1
BSC 483	Viral Ecology	3
BSC 485/485L	Viral Pathogenesis and Diagnosis	3/1
11. Select 6 hours at 300- or 400-level from the Department of Biological Sciences. Recommended courses include those listed above in Applied and Advanced Microbiology groups and courses listed below:		
BSC 360	Cellular Physiology	3
BSC 403/L	Natural History of Infectious Diseases	3
BSC 410/L	Human Parasitology	3/1
BSC 412/L	Medical Entomology	3/1
BSC 426/L	Introduction Mycology	3/1
BSC 427/L	Introductory Phycology	2/1
BSC 462/L	Microtechniques	2/2
BSC 463/L	Pathobiology	3/1
BSC 467/L	Diseases of Aquatic Animals	3/1
12. BSC 497	Senior Practicum [Senior Capstone Experience]	1
<b>07. Other Required Courses (36 hrs)</b>		
01. CHE 106/CHE 106L	General Chemistry I	3/1
02. CHE 107/CHE 107L	General Chemistry II	3/1
03. CHE 255/CHE 255L	Organic Chemistry	3/1
04. CHE 256/CHE 256L	Organic Chemistry	3/2
05. CHE 421/CHE 421L	Biochemistry I	3/2
06. CHE 423	Analytical Biochemistry	3
07. PHY 111/PHY 111L	General Physics I	3/1
08. PHY 112/PHY 112L	General Physics II	3/1
09. Computing Competency (Select 3 hrs)		
CSS 240	FORTTRAN Programming	3
CSS 330	Introduction to Programming	3
CSS 333	Problem Solving Using C, I	3
CSS 211	Statistical Methods I	3
PSY 360	Introduction to Statistics for the Behavioral Sciences	3

**08. Minor Area of Study:** the 25 hours of required Chemistry courses constitute a minor, if the student chooses to declare a Chemistry minor.

**09. Electives (9-11 hrs)**

**Minimum of 124 Hours in Program**

Minimum of 64 hours required from a four-year college; 45 hours at 300 or 400 level; last 32 hours taken at USM.