

## BIOLOGICAL SCIENCES DEGREE: Biomedical Sciences Emphasis Plan (AY 2021-2022)

**GENERAL EDUCATION CURRICULUM** (See Undergraduate Bulletin for full description of GEC)

<b>GEC 01. Written Communication (Select both)</b>	<b>Credit Hours</b>
ENG 101 - Composition One	3
ENG 102 - Composition Two	3
<b>GEC 02. Natural Science Requirement (Select both)</b>	
BSC 110/L* - Principles of Biological Sciences I & Lab	3/1
BSC 111/L* - Principles of Biological Sciences II & Lab	3/1
<b>GEC 03. Humanities (Select 3 courses)</b>	
01. <b>REQUIRED:</b> ENG 203 - World Literature	3
02. <b>SELECT 2 courses. One history course is required.</b>	
HIS 101 - World Civilizations: Beginning to 1500 C.E.	3
HIS 102 - World Civilizations: 1500 C.E. to the Present	3
PHI 151 - Introduction to Philosophy	3
PHI 171 - Ethics and Good Living	3
REL 131 - Comparative Religions	3
<b>GEC 04. Aesthetic Values. SELECT 1 course.</b>	
ART 130 - Art Appreciation	3
DAN 130 - Dance Appreciation	3
MUS 165 - The Enjoyment of Music	3
THE 100 - Theatrical Expressions	3
<b>GEC 05. Social and Behavioral Sciences. SELECT 2 courses.</b>	
PSY 110 - General Psychology	3
SOC 101 - Understanding Society: Principles of Sociology	3
<b>GEC 06. Mathematics Requirement. SELECT 1 of the following calculus courses.**</b>	
MAT 114 - Calculus for Arts and Sciences <b>OR</b>	3
MAT 167 - Calculus I with Analytical Geometry	3
<b>GEC 07. Writing-Intensive Requirement. SELECT 1 course.</b>	
ENG 333 - Technical Writing (WI) (Prerequisites = ENG 101 & 102) <b>OR</b> DPH 485	3
<b>GEC 08. Speaking-Intensive Requirement. SELECT 1 course.</b>	
CMS 111 - Oral Communication	3
CMS 305 - Interpersonal Communication	3
CMS 320 - Business and Professional Speaking	3
CMS 330 - Small Group Communication	3
<b>GEC 09. Capstone Requirement (Major Area)</b>	
BSC 497* - Senior Practicum	1

\*This course is required for this major.

\*\*Calculus is required for this major. MAT 114 is recommended for biology majors. MAT 167 is generally taken by student desiring a minor or a second major in mathematics. Students may enroll in MAT 114 if their ACT mathematics subtest score is  $\geq 24$ . Students enrolling in MAT 167 must have an ACT mathematics subtest score of  $\geq 26$ . Students entering USM with an ACT mathematics subtest score of 20 to 23 must complete MAT 101 (College Algebra) with a C or better before taking MAT 114. Students entering USM with an ACT mathematics subtest score of  $\leq 19$  must take MAT 099 (Intermediate Algebra) during their first semester and earn at least a C prior to enrolling in MAT 101(which must also be completed satisfactorily prior to enrolling in MAT 114). MAT 103 (Trigonometry) is recommended for students lacking a good background in mathematics.

## PROGRAM CURRICULUM

### DEG 01. Major Area of Study Requirements

*TOTAL BSC HOURS MUST EQUAL A MINIMUM OF 41 HOURS, including BSC 110/L, BSC 111/L, and BSC 497.*

**Students must complete a minimum of three laboratory-based BSC courses at the 300-400 level.**

01. BSC 197 - First Year Foundations	1
02. BSC 201/L - Zoology	3/1
03. BSC 282/L - General Microbiology & Lab (will be BSC 282/L starting Spring 2020)	3/1
04. BSC 305 - Evolution	3
05. BSC 360 - Cell Biology	3
06. BSC 370 – Genetics	3
07. BSC 486/L - Immunology & Serology & Lab	3/1
<b>08. Technology Elective. SELECT 1 course.</b>	
BSC 461/L – Histology & Lab	3/1
BSC 472 – Population Genetics	3
BSC 476 – Molecular Biology	3
BSC 477/L – Microbial Genetics & Lab	3/1
BSC 478/L - Methods in Biotechnology & Lab	3/1
BSC 491/L – Introductory Bioinformatics & Lab	3/1
<b>09. Systems Elective. SELECT 1 course.</b>	
BSC 361/L – Comparative Anatomy & Lab	3/1
BSC 407/L – Biology of Vertebrates & Lab	3/1
BSC 450 – Comparative Animal Physiology	3
BSC 451 – Human Physiology	3
BSC 466 – Human Embryology	3
BSC 469/L – Developmental Biology & Lab	3/1
<b>10. Pathophysiology and Microbiology Elective. SELECT 1 course.</b>	
BSC 410/L - Human Parasitology & Lab	3/1
BSC 412/L - Medical Entomology & Lab	3/1
BSC 426/L –Mycology & Lab	3/1
BSC 463 - Pathobiology	3
BSC 481 – Pathogenic Microbiology	3
BSC 484/L - Virology & Lab	3/1
BSC 487/L –Microbial Physiology & Lab	3/1
BSC 488/L –Food Microbiology & Lab	3/1
BSC 489/L –Environmental Microbiology & Lab	3/1

### DEG 02. Additional Requirements

01. CHE 106/L - General Chemistry I & Lab	3/1
02. CHE 107/L - General Chemistry II & Lab	3/1
03. CHE 255/L - Organic Chemistry I & Lab	3/1
04. CHE 256/L - Organic Chemistry II & Lab	3/1
05. CHE 420/L – Principles of Biochemistry & Lab <b>OR</b>	3/1
CHE 421/L –Biochemistry I & Lab	3/2
06. PHY 111/L - General Physics I & Lab	3/1
07. PHY 112/L - General Physics II & Lab	3/1
<b>08. SELECT 1 course.</b>	
PSY 360 – Intro to Statistics for Behavioral Sciences	3
DPH 440 – Introduction to Biostatistics	3

### DEG 03. Electives – Choose as needed with advisor’s approval.

01. MLS 201 – Medical Terminology	2
02. PHI 452 – Health Care Ethics	3
03. Recommended to choose one of the following:	
CHE 422 – Biochemistry II	3
CHE 424 – Biochemistry III	3
CHE 451 – Medicinal Chemistry	3
CHE 470 – Survey of Toxicology	3

**Hours to Degree at The University of Southern Mississippi:** 124 hours are needed to graduate with a BS in Biological Sciences with an emphasis in Biomedical Sciences. At least 50 percent of the hours applied to a degree at The University of Southern Mississippi must be earned from a senior college, and 30 of these hours must be in courses numbered 300 or above. The student must earn at least 21 of the last 30 hours of course work and at least 12 hours in the major area of study from Southern Miss. See Residence Hour Requirements for more information.