

## Curriculum Sheet for 2017-2018 Catalog

Degree: **Bachelor of Science**  
 Major: **BIOLOGY**  
 Emphasis: **CELLULAR/MOLECULAR**

**UNIVERSITY CORE CURRICULUM**

<u>UNIVERSITY CORE CURRICULUM</u>			<u>SCH</u>	
COMM 1311	Foundation of Communication	Communication	3	
ENGL 1302	Writing and Rhetoric	Communication	3	
See Catalog		Language, Philosophy, and Culture	3	
HIST 1301	US History to 1865	American History	3	
HIST 1302	US History Since 1865	American History	3	
POLS 2305	US Government and Politics	Government/Political Science	3	
POLS 2306	State and Local Government	Government/Political Science	3	
See Catalog		Creative Arts	3	
PSYC 2301	General Psychology	Social and Behavioral Science	3	
MATH 2413	Calculus I	Mathematics	(3)	See catalog for pre-requisite courses
BIOL 1406	Gen Biology I	Life and Physical Sciences	(3)	
BIOL 1407	Gen Biology II	Life and Physical Sciences	(3)	
CHEM 1411	Gen. Chemistry I	Component Area Option	(3)	
CHEM 1412	Gen. Chemistry II	Component Area Option	(3)	

**PREREQUISITES**

**First-Year Seminars/ Professional Skills**

<b>Choose UCCP 1101 &amp; UCCP 1102 or BIOL 2200</b>		2 Credits required	
UCCP 1101 & UCCP 1102	<u>First-Year Seminar</u>		2
BIOL 2200	<u>Professional Skills</u>		2

**Biology Core**

BIOL 1406	<u>Biology I</u>	*Life and Physical Sciences Core Course	4	MATH 1314 or see catalog for placement criteria
BIOL 1407	<u>Biology II</u>	*Life and Physical Sciences Core Course	4	BIOL 1406
BIOL 2416	<u>Genetics</u>		4	BIOL 1406 w "C", 1407, CHEM 1411, 1412
BIOL 2421	<u>Microbiology</u>		4	BIOL 1406 w "C", 1407, CHEM 1411, 1412
BIOL 2371	Principles of Evolution		3	BIOL 1407
BIOL 3428	Principles of Ecology		4	BIOL 1407, CHEM 1411, BIOL 2200 or UCCP1101, 1102, MATH 2413
CHEM 1411	Gen. Chemistry I	*Component area Option Core Course	4	MATH 1314 or see catalog for placement criteria
CHEM 1412	Gen. Chemistry II	*Component area Option Core Course	4	Chem 1411
*CHEM 3411	Organic Chemistry I		4	Chem 1411
*CHEM 3412	Organic Chemistry II		4	Chem 1412
MATH 2413	Calculus I		4	MATH 1314, 1316, or MATH 2312, or placement beyond MATH 2312
*BIOL 4292	Senior Presentation		2	BIOL 2200, Sr. standing

**Math requirement:**

<b>Choose one from the following:</b>				
MATH 1314	<u>College Algebra</u>		3	College Ready
MATH 1316	<u>Trigonometry</u>		3	MATH 1314, level IV ready
MATH 2312	<u>Precalculus</u>		3	MATH 1314, level IV ready
MATH 2414	<u>Calculus II</u>		4	MATH 2413
MATH 3342	<u>Applied Probability and Stats</u>		3	MATH 2413

**Chemistry of Life/Cell Biology Requirement: Choose one from the following:**

BIOL 3403	<u>Molecular Biology (SP)</u>		4	BIOL 2416 and BIOL 2421
BIOL 3410	<u>Cell Biology (FL)</u>		4	CHEM 3411 and BIOL 2416
CHEM 4401	<u>Biochemistry I</u>		4	CHEM 3412 and one year biology

**Form and Function requirement: Choose one from the following:**

BIOL 3425	<u>Functional Anatomy (SP)</u>		4	BIOL 1407
BIOL 3430	<u>Physiology (FL,SS)</u>		4	BIOL 1407
BIOL 3455	<u>Plant Form and Function (alt)</u>		4	BIOL 1407

**Organismal Biology requirement: Choose one from the following:**

BIOL 2472	<u>Principles of Botany (SP)</u>		4	BIOL 1407, CHEM 1411
BIOL 3413	<u>Invertebrate Zoology (FL, SS)</u>		4	BIOL 1407
BIOL 3414	<u>Vertebrate Zoology (FL)</u>		4	BIOL 1407

**CELLULAR/MOLECULAR CORE CLASSES: (15 sem hours)**

BIOL 3403	<u>Molecular Biology (SP)</u>		4	BIOL 2416 and BIOL 2421
BIOL 3410	<u>Cell Biology (FL)</u>		4	CHEM 3411 and BIOL 2416
BIOL 4340	<u>Genomics, Proteomics, Bioinformatics</u>		3	BIOL 2416 and (BIOL 3410 or CHEM 4401)
CHEM 4401	<u>Biochemistry I</u>		4	CHEM 3412 and one year biology
CHEM 4402	<u>Biochemistry II</u>		4	CHEM 4401

**CELLULAR/MOLECULAR ELECTIVES: See elective list**

15-16

**University Requirements**

Minimum Total Hours for degree:	120	Minimum Major grade point average (g.p.a.): 2.50
*Upper Division minimum total hours:	45	
*Upper Division minimum residency hours:	36	
*Upper Division minimum major residency hrs:	12	
Cumulative TAMU-CC minimum g.p.a.:	2	First Year Seminar Requirement: UCCP 1101/1102
Foreign Language Requirement:	see catalog	

## Cell/Molecular Biology Electives: Choose 15-16 hours

<b>COURSE</b>				<b>PRE-REQ</b>
BIOL2472	Principles of Botany	*If not used elsewhere for degree	4	BIOL1407, CHEM1411
BIOL 3300	Animal Nutrition		3	BIOL 1407, CHEM3411, Pre/Corequisite of CHEM3412
BIOL 3345	Cell Physiology		3	BIOL 2200, BIOL3410
BIOL 3413	Invert. Zoology	*If not used elsewhere for degree	4	BIOL 1407
BIOL 3414	Vert. Zoology	*If not used elsewhere for degree	4	BIOL 1407
BIOL 3425	Functional Anatomy	*If not used elsewhere for degree	4	BIOL 1407
BIOL 3430	Physiology	*If not used elsewhere for degree	4	BIOL 1407
BIOL 3455	Plant Form & Function	*If not used elsewhere for degree	4	BIOL 1407
BIOL 3479	Plant Ecology		4	BIOL 1407
BIOL 4299	Directed Independent Research			
BIOL 4301	Embryology		3	BIOL 2416
BIOL4302	Coral Reef Conservation		3	BIOL3428
BIOL 4304	Biology of Viruses		3	BIOL 2416, BIOL2421, CHEM1411
BIOL 4319	Marine Mammals		3	BIOL 1407
BIOL 4323	Global Change Ecology		3	none
BIOL 4326	Toxic & Therapeutic Plants		3	BIOL 1407
BIOL 4350	Research & Design		3	PROF. PERM.
BIOL 4370	Mariculture		3	BIOL 1407
BIOL 4371	Population Genetics		3	BIOL 2416, MATH1442 or 2413
BIOL 4396	Directed Independent Study		3	20 HRS. BIO & PROF. PERM.
BIOL 4405	Limnology		4	BIOL 3428
BIOL 4406	Immunology		4	BIOL 2421
BIOL 4407	Biology of the Fungi		4	BIOL 2421
BIOL 4408	Microbial Diversity & Ecology		4	BIOL 2421
BIOL 4409	Field & Sampling Techniques		4	PROF. PERM.
BIOL 4411	Animal Behavior		4	BIOL 1407
BIOL 4413	Entomology		4	BIOL 3413
BIOL 4422	Plant Taxonomy		4	BIOL 1407
BIOL 4425	Ornithology		4	BIOL 3414
BIOL 4428	Fisheries		4	BIOL 1407
BIOL 4429	Marine Botany		4	BIOL 1407
BIOL 4431	Mammology		4	BIOL 3414
BIOL 4432	Ichthyology		4	BIOL 3414
BIOL 4433	Parasitology		4	BIOL 2421
BIOL 4435	Biological Microtechniques		4	CHEM 3411, BIOL1407
BIOL 4436	Marine Ecology		4	BIOL 3428
BIOL 4442	Herpetology		4	BIOL 3414
BIOL 4444	Estuarine Organisms		4	BIOL 3413
BIOL 4446	Tropical Ecos & Conserv		4	BIOL 3428
BIMS3401	Pathophysiology		4	CHEM1411, BIOL1407, BIOL2401
BIMS4311	Biology of Cancer		3	BIOL2416, BIOL3410 strongly recommended
BIMS4323	Neurobiology		3	BIOL2416
BIMS4327	Intro to Toxicology		3	BIOL1407, CHEM1412
BIMS4330	Biological Basis of Aging		3	BIOL1407, CHEM3411
BIMS4333	Medical Entomology		3	BIOL1407
BIMS4334	Human Genetics		3	CHEM3412, BIOL2416
BIMS4335	Endocrinology		3	BIOL2200, CHEM3412, BIOL2416
BIMS4374	Medical Microbiology		3	BIOL2421
BIMS4375	Mechanisms of Microbial Pathogenesis		3	BIOL2421
BIMS4410	Histology		4	BIOL3425
PHYS 1401	Physics I		4	(For 2425- MATH2413)
PHYS 1402	Physics II		4	(For 2426- MATH2414)
MATH2414	Calculus II	*If not used elsewhere for degree	4	Math 2413
BIOL4590	Selected Topics	With Faculty Mentor Approval		
*Electives		With Faculty Mentor Approval	4	