

Curriculum Sheet for 2017-2018 Catalog

Degree: **Bachelor of Science**
 Major: **BIOLOGY**
 Emphasis: **ORGANISMAL**

UNIVERSITY CORE CURRICULUM

| | | | SCH | PREREQUISITES |
|-------|-------------|-----------------------------|-----------------------------------|---|
| _____ | 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) |
| | | | 2 Credits required | |

First-Year Seminars/ Professional Skills

| | | | | |
|--|-----------------------|---------------------|--|---|
| Choose UCCP 1101 & UCCP 1102 or BIOL 2200 | | | | |
| _____ | UCCP 1101 & UCCP 1102 | First-Year Seminar | | 2 |
| _____ | BIOL 2200 | Professional Skills | | 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:

| | | | | | |
|---------------------------------------|-----------|--------------------------------------|--|---|---------------------------|
| Choose one from the following: | | | | | |
| _____ | 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 |

ORGANISMAL CLASSES: CHOOSE AN EMPHASIS: PLANT, ANIMAL, or BROAD

| | | | | | |
|---|-----------|--------------------------------------|--|-------|-----------|
| PLANT EMPHASIS | | | | | |
| _____ | BIOL 2472 | <u>Principles of Botany (SP)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3455 | <u>Plant form and Function (alt)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3479 | <u>Plant Ecology</u> | | 4 | BIOL 1407 |
| _____ | BIOL 4422 | <u>Plant Taxonomy</u> | | 4 | BIOL 1407 |
| | | Plant Emphasis Electives | | 22-23 | |
| ANIMAL EMPHASIS | | | | | |
| _____ | BIOL 3413 | <u>Invertebrate Zoology (FL, SS)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3414 | <u>Vertebrate Biology (FL)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 4411 | <u>Animal Behavior (SP, SS)</u> | | 4 | BIOL 1407 |
| Chose one from the FOLLOWING two courses: | | | | | |
| _____ | BIOL 3425 | <u>Functional Anatomy (SP)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3430 | <u>Physiology (FL, SS)</u> | | 4 | BIOL 1407 |
| | | Animal Emphasis Electives | | 22-23 | |
| BROAD EMPHASIS | | | | | |
| _____ | BIOL 2472 | <u>Principles of Botany (SP)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3413 | <u>Invertebrate Zoology (FL, SS)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 3414 | <u>Vertebrate Biology (FL)</u> | | 4 | BIOL 1407 |
| Chose one from the FOLLOWING three courses: | | | | | |
| _____ | BIOL 3479 | <u>Plant Ecology</u> | | 4 | BIOL 1407 |
| _____ | BIOL 4411 | <u>Animal Behavior (SP, SS)</u> | | 4 | BIOL 1407 |
| _____ | BIOL 4422 | <u>Plant Taxonomy</u> | | 4 | BIOL 1407 |
| | | Broad Emphasis Electives | | 22-23 | |

| | | |
|--|-------------|--|
| Minimum Total Hours for degree: | 120 | Minimum Major grade point average (g.p.a.): 2.50 |
| University Requirements | | |
| *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 | |

Organismal Electives: Choose 22-23 hours

| COURSE | | | PRE-REQ |
|--|-----------------------------------|---|--|
| 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 3403 Molecular Biology | *If not used elsewhere for degree | 4 | BIOL 2416, BIOL2421 |
| BIOL 3410 Cell Biology | *If not used elsewhere for degree | 4 | BIOL 2416 & CHEM3411 |
| 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 | *If not used elsewhere for degree | 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 4340 Genomics, Proteomics, & Bioinformatics | | 3 | BIOL 2416 & BIOL3410 or CHEM4401 |
| 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 | *If not used elsewhere for degree | 4 | BIOL 1407 |
| BIOL 4413 Entomology | | 4 | BIOL 3413 |
| BIOL 4422 Plant Taxonomy | *If not used elsewhere for degree | 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 140 Physics I | | 4 | (For 2425- MATH2413) |
| PHYS 140 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 | |