New Curriculum in Biology (2019-2020)

TABLE 1 Bachelor of Science in Biology		
Requirement	**Courses**	**Hours**
Core Curriculum	BIOL 202, 220/222 or 270, 221/223 or 271, 300, **316 or 317**, 480, 491, 492	19
Area A Ecology and Evolution	Select one course from BIOL 302, 314, 323, 403, 405, 407, 507, 513, 551, 552A or B	3-4
Area B Cell and Molecular Biology	Select one course from BIOL 315, 321, 422, 517, 519, 522, 528, 529, 539, 555, 560	3-4
Area C Biodiversity and Organismal Biology	Select one course from BIOL 303, 304, 309,310,505, 508, 510, 511, 518, 524, 525, 526	3-4
Additional course (A, B, or C)	Select one course from A, B, or C	3-4
Area D Biology Electives	Select additional courses to total 42 hours in BIOL from the above areas and from the following: BIOL 307, 308, 440, 450H, 461, 463, 471, 530, 540, 570	To total a minimum of 42hrs in BIOL
Math and Science Courses	CHEM 105, 106,108 (General Chem I & II) MATH 101, 105, 141, 150, 151, 201, 341, or any MATH course with 201 as the pre-requisite (the MATH course used to satisfy the Quantitative Skills Area may not be counted here)	8 3-4
Area E Mathematics and Science Electives	Must be chosen from: MATH 101, 105, 141, 150, 151, 201, 341, or any MATH course with 201 as the pre-requisite (the MATH course used to satisfy the Quantitative Skills Area may not be counted here); CHEM (any course above 199 except 461, 462, or 463); PHYS (except 101/102); **GEOL; GEOG 305, 320 or 501** (only one may be applied toward credit in the major) and QMTH 205, 206 (if MATH 141 not selected)	11

- No more than 3 semester hours of credit may be awarded toward a degree in biology for a student completing any combination of BIOL 461 and 463.
- Must select at least one 500-level BIOL course.

Prerequisite Changes:

300 level classes:

BIOL 203, 204, 205, and 206, OR **BIOL 220, 221, 222 or 270, and 223 or 271**; HMXP 102; CHEM 105; MATH 101, 150, or 151 or any MATH course with MATH 150 or 151 as a prerequisite; students must have a **minimum grade of C- or S** in all 200-level BIOL courses taken and a minimum grade of C- or S in CHEM 105 and a C- in HMXP 102.

400 and 500 level classes:

BIOL 203, 204, 205, and 206, OR **BIOL 220, 221, 222 or 270, and 223 or 271**; **BIOL 300**; HMXP 102; CHEM 105, **106, and 108**; MATH 101, 150, or 151 or any MATH course with a MATH 150 or 151 prerequisite; **students must have a minimum grade of C- or S** in all of the listed BIOL courses taken and a minimum grade of C- or S in CHEM 105, **106, and 108** and a C- in HMXP 102.

Introductory Core Changes:

The department is replacing the current introductory core, which consists of the courses BIOL 204/203, 205, and 206 (Principles of Biology, Botany, and Zoology, respectively), with two brand-new courses, each with their own lab: BIOL 220/222 (lecture/lab) Principles of Cell and Molecular Biology and BIOL 221/223(lecture/lab) Principles of Ecology, Evolution, and Biodiversity. The two sets of courses will be non-sequential, so students may take them in either order.

TABLE 2: New Biology Introductory Courses	
2018-2019 Catalog	**2019-2020 Catalog**
BIOL 203/204 – Principles of Biology	BIOL 220/222 – Principles of Cellular and Molecular Biology
BIOL 205 – General Botany	BIOL 221/223 – Principles of Ecology, Evolution, and Biodiversity
BIOL 206 – General Zoology	BIOL 300 – Scientific Process in Biology
BIOL 300 – Scientific Process in Biology	BIOL 316 or 317 – Principles of Human Genetics or Genetics

New Course Catalog Descriptions:

BIOL 220/222 - Principles of Cell and Molecular Biology: An examination of core concepts in biology that focuses on the molecular basis of life, genetic principles, and fundamental cellular processes that underlie all forms of life and all levels of biological organization. Course Goals: Students will (1) Understand and apply fundamental scientific principles; theories, and laws as they apply to cellular and molecular biology; (2) Utilize critical thinking to evaluate evidence gathered using the scientific method; (3) Discuss the strengths and limitations of science; (4) Understand the relationship between biology and society; and (5) Effectively communicate biological concepts and interpretations.

BIOL 221/223 - Principles in Ecology, Evolution, and Biodiversity: An introduction to ecological concepts, the theory of evolution, and the diversity, structure, and function of microbes, plants, and animals. Course Goals: Students will (1) Understand and apply major concepts in ecology and evolution; (2) Recognize and describe the diversity of life on Earth and interconnections among organisms; (3) Utilize critical thinking to evaluate evidence gathered using the scientific method; (4) Discuss the strengths and limitations of science; (5) Understand the relationship between biology and society; and (6) Effectively communicate biological concepts and interpretations.