BIOLOGY CORE CURRICULUM (BIOCORE)

BIOCORE 381 — EVOLUTION, ECOLOGY, AND GENETICS
3 credits.
Basic principles of ecology and interrelations between individuals, populations, communities, ecosystems and their environment; transmission genetics and introduction to population genetics; origin of life, evolutionary mechanisms, ancestral relationships among species, and the diversity of life.

Requisites: MATH 221, CHEM 104 or 109, previous or concurrent registration in CHEM 341 or 343; or consent of instructor
Course Designation: Gen Ed - Communication Part B
Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2017

BIOCORE 382 — EVOLUTION, ECOLOGY, AND GENETICS LABORATORY
2 credits.
Writing-intensive course with opportunities for students to make observations and generate and test their own questions. Includes field trips to the Biocore Prairie and local stream, and research projects that focus on genetics and evolution.

Requisites: Completion of or concurrent registration in BIOCORE 381 (or Biocore 301 previous to Fall 2014)
Course Designation: Gen Ed - Communication Part B
Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2017

BIOCORE 383 — CELLULAR BIOLOGY
3 credits.
Cellular and molecular basis of life. The main themes are the structure and function of cells and organelles, the flow of energy in cells, and the storage, expression, and regulation of genetic information.

Requisites: BIOCORE 381 (or Biocore 301 previous to Fall 2014), CHEM 341 or 343; or consent of instructor
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Spring 2017

BIOCORE 384 — CELLULAR BIOLOGY LABORATORY
2 credits.
Writing-intensive course with opportunities for students to generate and test their own questions utilizing concepts and procedures of cell biology. Includes research projects in subcellular fractionation, protein structure and enzyme catalysis, molecular genetics of C.elegans worms, and signal transduction in yeast. Sophomore or Junior status or consent of instructor

Requisites: Completion of or concurrent registration in BIOCORE 383 (or Biocore 303 previous to Spring 2014) or BIOCHEM 501 GENETICS 466.
Course Designation: Gen Ed - Communication Part B
Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Spring 2017

BIOCORE 401 — PEER MENTORING
1 credit.
Weekly seminar for development of mentoring, group facilitation, leadership, and interpersonal skills used in peer learning and leading mentored study groups. This course focuses on the pedagogy, skills, and effective techniques used to facilitate learning in small groups. Activities and assignments include discussion of readings, leading practice facilitation/ problem solving sessions and receiving feedback, development of practice problems and questions from lower order to higher order cognitive levels using Blooms Taxonomy, doing reciprocal mentor observations, and reflective journal assignments.

Requisites: BIOCORE 381, 383, and (BIOCORE 382 or 384)
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2017

BIOCORE 485 — ORGANISMAL BIOLOGY
3 credits.
Physiology course that considers how plants and animals interact with their environments to survive, obtain nutrients, exchange gases, and reproduce, also how the complex systems of neural and endocrine regulation in animals and hormonal and environmental regulation in plants allow cells and organs to communicate.

Requisites: BIOCORE 381 383 (or Biocore 301 303 previous to Spring 2014); or consent of instructor
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2017
BIOCORE 486 — ORGANISMAL BIOLOGY LABORATORY
2 credits.

Students experience the process of science by collaborating on two multi-week independent experiments to investigate their own questions about animal and plant physiology. Emphasis is on critical thinking required in designing and conducting experiments, analyzing and interpreting data, and communicating findings orally and in writing.

**Requisites:** BIOCORE 485 or concurrent enrollment

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level:** Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Honors:** Honors Only Courses (H)

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

BIOCORE 587 — BIOLOGICAL INTERACTIONS
3 credits.

This capstone course helps students build on and integrate the knowledge and skills they have gained in the previous three semesters of Biocore lab and lecture coursework through readings and analysis of primary scientific literature. The course is organized such that students work in small groups to analyze current and emerging topics through the lens of scientific research. Topics include signaling pathways, systems biology, genetic disease, and cancer.

**Requisites:** BIOCORE 381, 383, and 485 (or Biocore 301, 303, and 323 previous to Spring 2014); or consent of instructor

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

**Level:** Advanced

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Honors:** Honors Only Courses (H)

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

BIOCORE 699 — DIRECTED STUDY
1-3 credits.

**Requisites:** Biocore 301 consent of instructor

**Course Designation:** Level - Advanced

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2017