BIOLOGY - BA

The St. Kate's biology major gives students an understanding of the major principles of biology in a manner that encourages the development of critical-thinking skills. Faculty members encourage students to take an active role in their own educational experiences and foster a cooperative - rather than competitive - learning environment in which women thrive. Students receive hands-on experience with advanced biological techniques and instrumentation.

The biology curriculum provides a solid foundation of first- and second-year courses followed by a variety of advanced courses in topics spanning the discipline. Students frequently use electronic databases to access the scientific literature and professional software programs to analyze data. Students often collaborate with faculty on research projects and have access to an on-site cadaver, tissue culture facilities, and modern biological instrumentation for laboratory and field work.

A St. Kate's biology major prepares students for a wide range of careers in the biological sciences including graduate research in ecology and environmental science, cellular and molecular biology, genetics, plant and animal physiology, behavior, public health, forensic science, and for professional programs in medicine, physician assistant, dentistry, veterinary medicine, physical therapy, optometry, pharmacy and medical technology. St. Kate's biology graduates go on to lead and influence as professionals in healthcare, teaching, non-profit organizations, industry, and government.

Students have many opportunities to explore career options, including internships related to their specific interests. Internships at off-campus sites expose students to the day-to-day activities of professionals ranging from physicians, field biologists, teachers, and basic researchers to industrial biotechnologists.

Students also have opportunities to explore their creative, intellectual, and scientific potentials through research projects done in collaboration with faculty. This type of experience allows students to discover the dynamic nature of the scientific process, to experience autonomy in their thinking while seeing how collaboration enhances scientific creativity and productivity, and to learn the value of perseverance through the frustrations that often accompany conducting and trouble-shooting experiments. Together with faculty mentors, students pose original research questions and are involved in experimental design, data gathering, and in interpretation of results. Through conference presentations and publications, students share their research results with the larger scientific community. Participation in research activities as an undergraduate helps some students decide if research is an appropriate career path and enhances their chances of being accepted into graduate programs. For example, one student recently worked with faculty on a field study of wetlands, which not only enriched her education but made her better prepared for graduate school. Another student performed genetic analysis of bacteria, giving her the lab experiences she needed to pursue a Ph.D. in molecular biology. Students may receive stipends to support their research activities through the Summer Scholars Program, the Assistantship Mentoring Program, and Faculty/Student Collaborative 3M STEM Grants.

See also: Applied Science in Biology (http://catalog.stkate.edu/undergraduate/humanities-arts-sciences/biology/applied-science-biology-ba-bs/), Pre-Physical Therapy (http://catalog.stkate.edu/undergraduate/preprofessional-programs/prephysical-therapy/), Pre-Public Health (http://catalog.stkate.edu/undergraduate/preprofessional-programs/prepublic-health/), Pre-Holistic Health Studies (http://catalog.stkate.edu/undergraduate/preprofessional-programs/pre-mahs/).

This major is offered in the College for Women only.

Curriculum

Code	Title	Credits
Required Courses in the Major		
BIOL 1710	Foundations of Biology I with Lab	4
BIOL 1720	Foundations of Biology II with Lab	4
BIOL 2710	Foundations of Biology III with Lab	4
BIOL 2720	Sophomore Seminar	2
BIOL 4602	Internship	2
or BIOL 4912	Research	
BIOL 4860W	Senior Seminar	4
Biology Electives		
18 additional credits in biology are required to complete the major. These credits must include:		18
Three 4-credit courses at the 3000 level or above (at least one lab and one field course)		
At least four elective credits at the 4000 level (which may include 4-credit laboratory or field courses and/or 2-credit topics courses)		
Total Credits		38

Code	Title	Credits
Required Supporting Courses (minimum grade of C- required)		
CHEM 1110	General Chemistry I with Lab	4
CHEM 1120	General Chemistry II with Lab	4
CHEM 2010	Organic Chemistry I with Lab	4
Select one of the following:		4
Statistics:		
ECON 1090	Statistical Analysis for Decision Making	
PSYC 1090	Statistical Methods in Psychology	
STAT 1090	Statistical Analysis	
Calculus:		
MATH 1130	Calculus I	
Total Credits		16

Code	Title	Credits
Recommended Courses		
CHEM 2020	Organic Chemistry II with Lab	4
CHEM 4400	Biochemistry	4
MATH 1130	Calculus I	4
Select one of the following (two semesters of physics)		8
PHYS 1110 & PHYS 1120	Introductory Physics I and Introductory Physics II	
PHYS 1080 & PHYS 1090	Physics for the Health Sciences I and Physics for the Health Sciences II with Lab	
Total Credits		20

Biology majors satisfy the Writing Requirement for Majors by completing BIOL 4860W Senior Seminar. They complete the Liberal Arts and Sciences Core Writing Requirement with three other writing-intensive

courses (CORE 1000W The Reflective Woman or CORE 2000W The Reflective Woman, CORE 3990W Global Search for Justice, and any other writing-intensive course in any department).