SCIENCE- 4TH TO 12TH GRADE (BFS/SED) MAJOR*

What you will learn

When you choose a science major, you combine studies in science with a teaching concentration. For teaching requirements, see the entry under Education – Early Adolescence/ Adolescence EducationSecondary.

You begin your major work with 16 credits of introductory biology and chemistry. Students who have taken advanced sciences in high school may be eligible to bypass some of these courses! This experience emphasizes the interrelatedness of science concepts and how one learns and does science. Your program of studies is designed to illustrate basic and intermediate science principles. You will also examine how those principles are applied across disciplines. In advanced courses, you will learn the significant theoretical frameworks of scientific thought. Throughout your coursework, you will be introduced to laboratory, field, descriptive, and experimental modes of data collection and analysis. You will gain experience in setting up experimental design strategies. The program places emphasis on the development of solid inquiry skills and on active and reflective learning. This is the kind of learning that nurtures your natural curiosity as a learner, and you will bring it forward into your own classroom in the future.

In the course of your studies you develop several key abilities:

1. ***The ability to analyze.*** You learn to observe the natural world and draw inferences and meaning from the interplay of living and nonliving matter. You then learn to apply concepts of science to a range of examples.
2. ***The ability to solve problems.*** You design and carry out experiments to expand your knowledge and experience. You develop critical-thinking skills in the effective use of scientific methodologies, data retrieval, charts, graphs, models, and computer simulations and in the analysis of data.
3. ***The ability to deal responsibly with environmental and global issues.*** You explore the contexts in which scientists work. These may include the goals and values of your colleagues and students, or the conflicting needs and beliefs of whole cultures.

***This program is suspended and is not currently accepting new students.**

Requirements

Code	Title	Credits
SCIENCE		
Beginning Requirements		
SC-120 & 120L	Foundations of Biology and Foundations of Biology Lab	4
CH-213 & 213L	Chemistry of Bioorganic Molecules and Chemistry of Bioorganic Molecules Lab	4
BI-223		4
or BI-221 & 221L	Biology of Plants and Biology of Plants Lab	
or BI-222 & 222L	Biology of Animals and Biology of Animals Lab	
Intermediate Requirements		
BI-251 & 251L	Microbiology and Microbiology Lab	4
BI-399	Formal Introduction to Advanced Work	0
or CH-399	Formal Introduction to Advanced Work	
CH-221 & 221L	Organic Chemistry 1 and Organic Chemistry 1 - Lab	4
or CH-234 & 234L	Analytical Chemistry/Quantitative Analys and Analytical Chem-Quant Analysis Lab	
CH-260 & 260L	Chemistry of Inorganic Materials and Chemistry/Inorganic Materials - Lab	4
GE-220	Earth Science	4
PH-231 & 231L	Algebra-Based Physics I and Physics Lab	4
or PH-241 & 241L	Calculus-Based Physics 1 and Physics Lab	
PH-232 & 232L	Algebra-Based Physics 2 and Physics 2 Lab (or PH-242 & PH-242L)	4
MT-256	Probability and Statistics	4
CH-328 & 328L	Biochemistry and Biochemistry - Lab	4
or CH-337	Instrumental Methods of Analysis Lab	
or CH-395	Biochemistry of Micronutrients	
Advanced Requirements		
BI-341	Ecology	4
GE-410	Environmental Geology	4
BI Elective	Take one Biology (BI) and one Chemistry (CH) course, 300 or 400 level	2-4
SECONDARY EDUCATION		
Beginning Requirements		
ED-116	Relational Competence Workshop	3
ED-201S	Exploration Teaching, Learning and Assessing-Secondary Education	4
PSY-110	Life Span Development	4
or SW-250	Human Behavior in Social Environment	
Intermediate Requirements		
ED-220	Interview Assessment	0
ED-277	Tchg Science/Middle-Secondary Schl	4
ED-321	Middle School Teaching & Field	4
ED-396	Introduction to Exceptional Learner	4
ED-399	Formal Introduction to Advanced Work	0
Advanced Requirements		
ED-315S	Immersion in Teaching, Learning, and Assessing-Secondary Ed	4
PST 329	Praxis II Completed	0
PST 400	Praxis II Completed	
ED-420	Advancement to Student Teaching Performance Assessment	0
ED-468	Student Teaching Placement (or ED-455A & ED-455EA)	18
ED-475	Student Teaching Seminar	0