Program Coordinator: V. Fitsanakis

The B.A. in General Biology is designed for individuals seeking employment not requiring an advanced degree in science or medicine, but where a strong technical background is desirable. This would include such professional career options as scientific or pharmaceutical sales, lab technician, scientific writing, public education, law, etc. This curriculum includes 50 semester hours of science and math but has more flexibility than the Bachelor of Science.

The Bachelor of Arts in Human Biology is designed for students who are interested in pursuing an advanced degree in graduate programs related to human health, such as a doctorate in physical therapy (DPT), or graduate degrees in physician’s assistant (PA) or occupational health programs such as occupational therapy (OT). This track is not designed or intended to meet the needs of students who are pursuing medical, pharmacy, or graduate school in an area of biology or biomedical research. Students interested in those career paths should follow the requirements for a B.S. in Biology in either General Biology or the Cell and Molecular Biology tracks.

Students who complete the Bachelor of Arts degree in Biology are required to have a minor; students should choose their minor program in consultation with their academic advisor, taking into account their career goals.

The Bachelor of Arts with secondary education licensure prepares a student for teaching science. Licensed teachers are in great demand nationwide in all areas of science, particularly biology and chemistry. Students obtaining their secondary education licensure will minor in Education. Due to the number of semester hours required for completion of the B.A. in Biology with secondary licensure, students should meet regularly with advisors from both Biology and Education.

Clinical Experiences
During completion of course work, it is anticipated that students interested in physical therapy, occupational health, or physician’s assistant programs would participate in clinical rotations or internships. Students should be aware that many of these specific graduate programs require up to 1500 hours of patient contact before admission to the respective programs. Thus, students ideally will start accumulating hours the summer after their sophomore year.

Student Learning Outcomes
1. Knowledge of Fundamental Areas of Biology: Students will demonstrate knowledge of fundamental areas of biology.
2. Skills for Appropriate Lab Methodology: Students will develop skills to use appropriate lab methodology to gather data and draw conclusions, and to communicate results in meaningful forms.
3. Written and Oral Communication: Students will be able to write or orally communicate technical information that is suitable for presentation.

4. Progress Toward Science-Related Careers: Identify and participate in experiences (jobs, internships, shadowing, research) related to desired career goals; gain employment in science-related careers or entry into graduate or professional degree programs.

Core Curriculum Requirement
Biology majors should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the “The Core Curriculum” section of the catalog for additional details.

Science
CHEM 1110
General Chemistry I ................................................................. 4 s.h.

Quantitative Literacy
MATH 2350
Calculus I .................................................................................. 4 s.h.

BS in Biology Major Requirements
BIOL 2110
General Biology I ........................................................................ 4 s.h.
BIOL 2120
General Biology II ....................................................................... 4 s.h.
BIOL 4010
Comprehensive Assessment ........................................................... 0 s.h.
CHEM 1120
General Chemistry II ................................................................. 4 s.h.
CHEM 2110
Organic Chemistry I .................................................................. 4 s.h.
PHYS 2210
General Physics I ........................................................................ 4 s.h.
IDST 4500 (0.5 credits, repeated for a total of four semesters)
Interdepartmental Science and Mathematics Seminar .................. 2 s.h.

Track Requirements for a BA in Biology
Students will choose a track in General Biology or Human Biology.

General Biology Track (B.A.)
BIOL 3100
Plant Biology ............................................................................. 4 s.h.
BIOL 3130
Ecology ...................................................................................... 4 s.h.
BIOL 3150
Genetics ..................................................................................... 4 s.h.

Choose from the following courses ............................................. 4 s.h.
BIOL 3210
Human and Vertebrate Comparative Anatomy (4 s.h.)
BIOL 3500
Histology (4 s.h.)
BIOL 3560
Clinical Neuroanatomy (4 s.h.)
**Choose from the following courses** ................................................. 4 s.h.
- BIOL 3300
  - Cell Biology (4 s.h.)
- BIOL 3540
  - Neurophysiology (4 s.h.)
- BIOL 3600
  - Human and Mammalian Physiology (4 s.h.)

**Choose from the following courses** ................................................. 8 s.h.
- Any BIOL courses at 3000-level or higher
- PHYS 2030
  - Survey of Astronomy (4 s.h.)
- MATH 1560
  - Introduction to Statistics (4 s.h.)
- MATH 2360
  - Calculus II (4 s.h.)

**Human Biology Track (B.S.)**
- BIOL 1010
  - Human Anatomy and Physiology I ........................................ 4 s.h.
- BIOL 1020
  - Human Anatomy and Physiology II ...................................... 4 s.h.
- ATEP 2510
  - Care and Prevention of Athletic Injuries ................................ 4 s.h.
- ATEP 3680
  - Kinesiology ........................................................................ 4 s.h.
- ATEP 3690
  - Exercise Physiology ............................................................ 4 s.h.
- PHED 3550
  - Nutrition and Conditioning .................................................. 4 s.h.
- PHYS 2220
  - General Physics II ............................................................... 4 s.h.

**Choose from the following courses** ................................................. 8 s.h.
- BIOL 3150
  - Genetics (4 s.h.)
- BIOL 3300
  - Cell Biology (4 s.h.)
- BIOL 3400
  - Microbiology (4 s.h.)
- BIOL 3500
  - Histology (4 s.h.)
- BIOL 3540
  - Neurophysiology (4 s.h.)
- BIOL 3560
  - Clinical Neuroanatomy (4 s.h.)
- BIOL 4670
  - Mammalian Toxicology (4 s.h.)
Summary of Total Credits

General Biology Track
Core Curriculum ................................................................. 42 s.h.
Major Requirements:
  Common Requirements .................................................. (22 s.h.)
  Track Requirements ...................................................... (28 s.h.)
Electives/Second Minor/Second Major ................................. 32 s.h.
Minimum to Earn Bachelor of Science ................................. 124 s.h.

Human Biology Track
Core Curriculum .................................................................. 42 s.h.
Major Requirements:
  Common Requirements .................................................. (22 s.h.)
  Track Requirements ...................................................... (36 s.h.)
Electives/Second Minor/Second Major ................................. 24 s.h.
Minimum to Earn Bachelor of Science ................................. 124 s.h.

Teacher Education - BIOLOGY
The B.A. in Biology is (Grades 6-12) is available with modifications to the Biology BA track and the King Core, and successful completion of the Secondary Education minor. Licensed teachers in secondary education are in great demand in all fifty states, and the areas of science, mathematics, English as a second language, and foreign languages are considered critical need areas in K-12 public education by all states.

Declaration of the minor and early and frequent advisement is essential to timely completion of degree and licensure requirements. Students seeking teacher licensure will be assigned a secondary education advisor in the Department of Teacher Education, in addition to their major advisor. See the “Admission to the Teacher Education Program” section of this catalog or contact the Certification Advisor in the School of Education for eligibility criteria, admissions procedures, and timelines.

Core Curriculum Requirements
Biology majors seeking teaching licensure should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the “The Core Curriculum” section of the catalog for additional details on fulfillment of other categories.

Science
CHEM 1110  
General Chemistry I ............................................................. 4 s.h.

Quantitative Literacy
MATH 2350  
Calculus I .......................................................................... 4 s.h.

Literature/History
HUMN 2171  
The Quest for a Meaningful Life I ..................................... 4 s.h.
HUMN 2172  
The Quest for a Meaningful Life II .................................... 4 s.h.
Human Culture

*If language requirement is not met by proficiency, then a student must choose FREN/SPAN/GREK 2000 to satisfy requirement.*

FREN 2000, SPAN 2000, GREK 2000
Intermediate Foreign Language .................................................. 4 s.h.

General Science and Physical Science Core

CHEM 1120
General Chemistry II ............................................................. 4 s.h.
CHEM 2110
Organic Chemistry I ............................................................. 4 s.h.
GEOG 2010
Physical Geography ............................................................... 3 s.h.
PHYS 2210
General Physics I ................................................................. 4 s.h.

BA In Biology Major Requirements for Teaching Licensure

BIOL 2110
General Biology I ................................................................. 4 s.h.
BIOL 2120
General Biology II ............................................................... 4 s.h.
BIOL 3150
Genetics ............................................................................... 4 s.h.
BIOL 3130
Ecology .................................................................................. 4 s.h.
BIOL 3100
Plant Biology .......................................................................... 4 s.h.
BIOL 4010
Comprehensive Assessment .................................................... 0 s.h.
IDST 4500 (0.5 s.h. repeated for a total of four semesters)
Interdepartmental Science and Mathematics Seminar ............... 2 s.h.

*Choose from the following courses* ........................................ 4 s.h.

BIOL 3300
Cell Biology (4 s.h.)
BIOL 3540
Neurophysiology (4 s.h.)
BIOL 3600
Human and Mammalian Physiology (4 s.h.)

*Choose from the following courses* ........................................ 4 s.h.

BIOL 3210
Human and Vertebrate Comparative Anatomy (4 s.h.)
BIOL 3500
Histology (4 s.h.)
BIOL 3560
Clinical Neuroanatomy (4 s.h.)

*Choose from the following courses* ........................................ 4 s.h.
Any BIOL course at 3000 level or higher
PHYS 2030 (4 s.h.)
Survey of Astronomy
MATH 1560 (4 s.h.)  
Introduction to Statistics  
MATH 2360 (4 s.h.)  
Calculus II

Secondary Education Minor
EDUC 2030  
Introduction to Teaching: K-Grade 12 ........................................ 2 s.h.  
EDUC 2031  
Introduction to Teaching Practicum, Grades PreK-12 .................... 1 s.h.  
EDUC 2100  
Survey of Exceptional Children ............................................. 4 s.h.  
EDUC 2370  
Reflective Teaching: Planning for Classroom Instruction ................ 3 s.h.  
EDUC 2900  
Foundations of Education .................................................... 3 s.h.  
EDUC 2950  
Technology for Teachers .................................................... 2 s.h.  
EDUC 3390*  
Secondary Curriculum and Methods ........................................ 3 s.h.  
EDUC 3590*  
Content Area Reading ....................................................... 3 s.h.  
EDUC 3600*  
Assessment and Evaluation ................................................ 3 s.h.  
PSCI 2120  
Cultural Diversity in America .............................................. 4 s.h.  
PSYC 3320  
Adolescent Development ................................................... 4 s.h.  
EDUC 4490*  
Student Teaching, Grades 6-10 ............................................ 5 s.h.  
EDUC 4500*  
Student Teaching, Grades 9-12 ............................................ 5 s.h.  
EDUC 4950*  
Capstone Seminar, Grades K-12 .......................................... 2 s.h.  
EDUC 4990  
Comprehensive Assessment (passing state-required  
Praxis II exams, successful portfolio completion,  
successful portfolio defense) ................................................ 0 s.h.

*Requires admittance to the Teacher Education Program

Summary of Total Credits
Core Curriculum .......................................................................... 42 s.h.  
Major Requirements .................................................................... 49 s.h.  
Secondary Education Minor .................................................... 44 s.h.  
Minimum to Complete Licensure Program ................................ 135 s.h.