Life Sciences (7-12)
Teacher Licensure Requirements

Program Requirements

Gen Ed: Satisfactory completion of all general education requirements (generally 55 sem hrs).

Major: Satisfactory completion of a major in Biology (42 or 41 sem hrs for B.A. degree as described below) plus coursework in related sciences (24 sem hrs) for a total of 66 sem hrs in the sciences. For students seeking a B.S. degree, see the current academic catalog for courses required beyond what is listed below.

Education: Satisfactory completion of a minor in education (34 sem hrs) as described below. Before being admitted to the Teacher Education Program, the student must first demonstrate Math competency by earning a grade of C- or higher in a 4 sem hr course that fulfills the general education quantitative reasoning requirement (courses designated with a "Q").

Note: All courses in the teaching field must be passed with grades of C- or higher. See the Academic Catalog for additional requirements for admission and continuance in the program. Courses may not be offered every year. Be sure to check with the department for schedule of course offerings.

Required in Biology (41-42 sem hrs)

**AREA I: Fundamental Courses in Biology**

- __Biol 170/171 Concepts of Biology: Biological Information (5)
- __Biol 180/181 Concepts of Biology: Energy & Resources in Biology (5)
  (Note: Courses can be taken in either order)
- __Biol 255 Biological Literacy (4)

**AREA II: A minimum of 4 hours each from Groups 1, 2 & 3, and 9 hours from Group 4.**

Two of these upper-level courses must fulfill the botanical/zoological requirement of the Biology major by examining both plant and non-human animal life.

**Group 1: Molecules, Organelles, Cells**

- __Biol 210 Molecular Neurobiology (5)
- __Biol 214 Developmental Biology (5)
- __Biol 215 Genetics (5)
- __Biol 310 Molecular Biology (5)
- __Biol 312 The Cell (5)
- __Biol 316 Molecular Genetics (5)

**Group 2: Tissues, Organs, Systems**

- __Biol 325 Human Anatomy and Physiology I (5)

**Group 3: Organisms**

- __Biol 230 Woody Plants (4)
- __Biol 231 Vertebrate Zoology (5)
- __Biol 232 Herpetology (5)
- __Biol 233 Ornithology (5)
- __Biol 234 Morphology of Nonvasc Plants (5)
- __Biol 235 Morphology & Taxonomy of Vascular Plants (5)
- __Biol 237 Microbiology (5)
- __Biol 238 Entomology (5)
- __Biol 239 Marine Invertebrates (5)

**Group 4: Populations, Communities, Ecosystems**

- __Biol 347 Evolution (4)

Plus one from the following courses:

- __Biol 241 Freshwater Ecology (5)
- __Biol 242 Behavioral Ecology (5)
- __Biol 245 Wildlife Management (5)
- __Biol 247 Marine Ecology (5)
- __Biol 248 Compar Comm: Bahamas (5)
- __Biol 342 Stream Ecology (5)
- __Biol 346 Ecology (5)

**AREA III:**

Note: This requirement is satisfied by the two courses completed in Area II, Group 4.

**AREA IV: Senior Capstone**

- __Biol 406 Senior Capstone Seminar (4)

**Required in Related Sciences** (24 sem hrs)

The following courses in "related sciences" are required for purposes of teacher licensure.

**AREA V: Required in Chemistry**

- __Chem 121 Models of Chem. Systems (5)
- __Chem 162 Chem Struc. & Analysis (5)

**AREA VI: Supporting Science**

From Geology, 5 sem hrs from the following

- __Geol 150 Physical Geology (5)
- __Geol 160 Environmental Geology (5)

From Physics, 9 sem hrs

- __Phys 107 Astronomy (4)
- __Phys 200 Mechanics and Waves (5)
Required in Education (34 sem hours)

Note: All education courses must be passed with grades of C- or higher. See Academic Catalog for additional requirements for admission to and continuance in the program.

Entry-Level Courses

___ Educ 103 S Sociological Perspectives in Education (4)
or, Educ 104 R Philosophical Perspectives in Education (4)
___ Educ 112 Human Development & Learning Theory: Middle Childhood through Young Adult (2)
___ Educ 120 Introduction to Students with Special Needs (2)
       (Educ 112 and 120 are to be taken concurrently)

Advanced Courses

___ Educ 304 Responsive Schools for the Middle Grades (2) (*Offered Fall & Spring semesters; Spring scheduling preferred.*)
___ Educ 306 Teaching and Learning in the High School (4) (*Offered Spring semesters only*)
___ Educ 312 Reading and Writing in Content Areas (4) (*Offered Fall semesters only*)

Student Teaching

Application for permission to student teach must be submitted early spring term of the junior year. The student teaching term will consist of methods courses, followed by the full-time student teaching placement. Other coursework, if taken, must be scheduled for late afternoon or evenings during the term.

___ Educ 342 Including Students with Special Needs in Middle & Secondary Classes (2)
___ Educ 348 Teaching Science in Secondary Schools (2)
___ Educ 495 Student Teaching (12)

Additional Education Requirements:

___ Successful completion of State Board of Education Examinations
       (Complete during the senior year)

Note: Changes in this program of study must be approved by the Chairperson of the major department and the Director of Teacher Licensure, Wittenberg University.