

# BIOLOGICAL SCIENCES | BACHELOR OF SCIENCE: BIOLOGY (EDUCATION)

Bachelor of Science in Biology – Secondary Education

## Program Summary

Code	Title	Hours
General Education		34
Major Core		48
Cognates		28
Open Electives		9
<b>Total Hours to Complete One Degree from FHSU</b>		<b>120</b>
Secondary Education		31
<b>Total Hours to Complete Secondary Education Degree</b>		<b>150</b>

<sup>1</sup> Open electives are the credit hours required to reach a minimum of 120 total hours and 45 upper-level hours. The number listed assumes all courses are completed at FHSU as listed. This number may vary if students transfer courses, or have individual substitutions allowed.

Students should speak with their advisor if either situation applies to determine if the number will vary, and to ensure they enroll in a minimum of 45 upper-level hours.

Students entering within 1 year of high school graduation will take UNIV 101 Freshman Seminar and may apply that hour in the open elective category.

## Program Requirements

### General Education

All undergraduate degrees require completion of the Kansas Systemwide General Education (<https://catalog.fhsu.edu/general-education/>).

Courses identified with <sup>GE</sup> on this page may satisfy a general education requirement in addition to the identified degree requirement. Students who apply a degree requirement to satisfy a general education requirement will typically add an equal number of hours to the the university elective category. This flexibility may allow you to complete a minor or certificate within the 120 hour degree. Transfer students and students majoring in programs with approved exceptions (<https://www.fhsu.edu/general-education/documents/fhsu-gen-ed-transfer-exceptions-explainer1.pdf>) are especially encouraged to select these courses in completing General Education requirements to maximize the likelihood of completing the degree with 120 credit hours.

Code	Title	Hours
<b>General Education</b>		<b>34-35</b>

Code	Title	Hours
<b>Biology Core Courses</b>		

BIOL 180 & 180L	Principles of Biology and Principles of Biology Laboratory <sup>GE, 1,2,3</sup>	4
BIOL 230 & 230L	Anatomy and Physiology I and Anatomy and Physiology I Laboratory <sup>GE, 2,3</sup>	4

BIOL 231 & 231L	Anatomy and Physiology II and Anatomy and Physiology II Laboratory <sup>GE, 2,3</sup>	4
BIOL 235	Early Field Experience: Biology <sup>2,3</sup>	1
BIOL 250 & 250L	Botany and Botany Laboratory <sup>GE, 2,3</sup>	4
BIOL 260 & 260L	Zoology and Zoology Laboratory <sup>GE, 2,3</sup>	4
BIOL 325 & 325L	Genetics and Genetics Laboratory <sup>2,3</sup>	4
BIOL 395 & 395L	Ecology and Ecology Laboratory	4
BIOL 420	Evolution <sup>2</sup>	3
BIOL 490 & 490L	General Microbiology and General Microbiology Laboratory <sup>GE, 2,3</sup>	4
BIOL 499	Global Environmental Issues <sup>2,3</sup>	3
BIOL 499	Global Environmental Issues	3
BIOL 3XX or above	Upper-division elective <sup>2,3</sup>	3

### Discipline Writing Course Graduation Requirement

BIOL 442	Scientific Communication <sup>2</sup>	3
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### Cognates

IDS 350	Diversity in the United States <sup>GE</sup>	3
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### Chemistry

CHEM 120 & 120L	University Chemistry I and University Chemistry Laboratory I <sup>GE, 2</sup>	5
CHEM 122 & 122L	University Chemistry II and University Chemistry Laboratory II <sup>GE, 3</sup>	5
CHEM 480	Laboratory Safety and Teaching Techniques <sup>3</sup>	1

### Mathematics

MATH 110	College Algebra <sup>GE, 1,2,3</sup>	3
MATH 250	Elements of Statistics <sup>GE</sup>	3
MATH 331	Calculus Methods <sup>GE, 2,3</sup>	3

### Physics

PHYS 111 & 111L	Physics I and Physics I Laboratory <sup>GE, 2</sup>	5
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<b>Total Hours</b>		<b>76</b>
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<sup>1</sup> Counts towards General Education and the Biology major.

<sup>2</sup> Fall offering.

<sup>3</sup> Spring offering.

<sup>4</sup> Taken before admission to teacher education program.

<sup>5</sup> Taken after admission to teacher education program.

<sup>6</sup> Other minors are possible; talk to your faculty mentor and academic advisor.

The Bachelor of Science in Education with a emphasis in Secondary Education is available only as part of a dual major in conjunction with a major in an academic teaching field approved by the KSDE at the PreK-12 and 6-12 levels. The teaching fields available at FHSU for students interested in licensure at middle or high school levels are art, biology, business, chemistry, earth/space science, English, modern languages (Spanish), journalism, mathematics, music, physical education, physics, psychology, technology education (communications; power, energy, transportation; production), history and government. For requirements in each content, please contact the appropriate teaching area departmental office. Students wishing to complete the

requirements for the Secondary Education major must also meet the Teacher Education Program admission requirements. This program follows the Conceptual Framework for Teacher Education at Fort Hays State University.

Code	Title	Hours
	Secondary Education Core	19
	Courses from field of study	variable
	Student Teaching	12
<b>Total number of credit hours varies based on chosen field of study</b>		

## General Education

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Code	Title	Hours
	<b>General Education</b>	<b>34-35</b>

## Program Admission Requirements & General Education Courses

To earn an undergraduate degree at FHSU, you must complete 34 hours of General Education coursework. For the Secondary Education degree the following classes typically applied to the general education requirements must be completed with the specified grade for admission to the teacher education program, these include:

Code	Title	Hours
ENG 101	English Composition I (Grade C) <sup>GE</sup>	3
ENG 102	English Composition II (Grade B) <sup>GE</sup>	3
COMM 100	Fundamentals of Oral Communication (Grade B) <sup>GE</sup>	3
or COMM 304	Intermediate Interpersonal Communication	
MATH 110	College Algebra (Grade C) <sup>GE</sup>	3
or MATH 101	Contemporary Mathematics	
or MATH 130	Pre-Calculus Mathematics	
or MATH 234	Analytic Geometry and Calculus I	
MATH 250	Elements of Statistics (Grade C) <sup>GE</sup>	3

For a current list of all teacher education admission requirements check out the programs website (<https://www.fhsu.edu/cert/admission-to-teacher-education/>)

## Secondary Education Requirements

These requirements are in addition to the requirements for the primary degree

Code	Title	Hours
<b>Secondary Education Core Non-Restricted Courses</b>		
TEEL 202	Foundations of Education (Grade C)	3
TEEL 231	Human Growth and Development (Grade C) <sup>GE</sup>	3
TECS 301	Introduction to Instructional Technology (Grade C)	3
—	277 Early Field Experience (Grade C)	
<b>Secondary Education Core Restricted Courses (Admission to Teacher Education Required)</b>		
TESP 302	Educating Students with Exceptionalities	3
TEEL 431	Educational Psychology	3
TESS 494	The Secondary School Experience	4
<b>Student Teaching Courses</b>		
TESS 496	Student Teaching Secondary	11
TEEL 675	Seminar in Education I	1

Total Secondary Education Courses: 31 Credit Hours. The 31 credit hours doesn't include method classes in the discipline or additional cognates necessary for specific fields.

- All program courses must be completed with a C or better
- Major requires 2.75 GPA

## Degree Requirements

Code	Title	Hours
<b>All bachelor degrees require:</b>		
GPA of 2.0 on FHSU courses & 2.0 on all coursework (Higher program requirements prevail over the 2.0 when set)		
A minimum of 30 hours earned from FHSU with a grade of D, C, B, or A		
Successful completion of an upper division Writing and Information Literacy course (Most majors contain a course designated)		
A minimum of 45 hours of recognized upper division credit		
A minimum of 120 hours of recognized college credit		

**You must complete 150 credit hours to earn your Biology and Education Bachelor's Degree.**

## Degree Requirements

Code	Title	Hours
<b>All bachelor degrees require:</b>		
GPA of 2.0 on FHSU courses & 2.0 on all coursework (Higher program requirements prevail over the 2.0 when set)		
A minimum of 30 hours earned from FHSU with a grade of D, C, B, or A		
Successful completion of an upper division Writing and Information Literacy course (Most majors contain a course designated)		
A minimum of 45 hours of recognized upper division credit		
A minimum of 120 hours of recognized college credit		

## Degree Maps

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
TEEL 202	Foundations of Education	3
SGE070 - Institutionally Designated Area: Personal and Professional Development		3
MATH 110	College Algebra	3
BIOL 180 & 180L	Principles of Biology and Principles of Biology Laboratory	4
UNIV 101	Freshman Seminar	1
ENG 101	English Composition I	3
<b>Hours</b>		<b>17</b>
<b>Spring</b>		
TEEL 231	Human Growth and Development	3
COMM 100	Fundamentals of Oral Communication	3
BIOL 250 & 250L	Botany and Botany Laboratory	4
ENG 102	English Composition II	3
MATH 250	Elements of Statistics	3
<b>Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
TESP 302	Educating Students with Exceptionalities	3
BIOL 325 & 325L	Genetics and Genetics Laboratory	4
CHEM 120 & 120L	University Chemistry I and University Chemistry Laboratory I	5
BIOL 260 & 260L	Zoology and Zoology Laboratory	4
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
SGE070 - Institutionally Designated Area: Critical Thinking		3
BIOL 235	Early Field Experience: Biology	1
TECS 301	Introduction to Instructional Technology	3
CHEM 122 & 122L	University Chemistry II and University Chemistry Laboratory II	5
BIOL 395 & 395L	Ecology and Ecology Laboratory	4
<b>Hours</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall</b>		
Directed Electives		3
TEEL 431	Educational Psychology	3
SGE060 - Arts Humanities Discipline Area		3
SGE060 - Arts Humanities Discipline Area		3
BIOL 230 & 230L	Anatomy and Physiology I and Anatomy and Physiology I Laboratory	4
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
TESS 406	Science Teaching Methods	2
SGE050 - Social Behavioral Sciences Discipline Area		3
BIOL 231 & 231L	Anatomy and Physiology II and Anatomy and Physiology II Laboratory	4
BIOL 442	Scientific Communication	3
CHEM 480	Laboratory Safety and Teaching Techniques	1
BIOL 499	Global Environmental Issues	3
<b>Hours</b>		<b>16</b>
<b>Fourth Year</b>		
<b>Fall</b>		
TESS 494	The Secondary School Experience	4
BIOL 490 & 490L	General Microbiology and General Microbiology Laboratory	4

BIOL 420	Evolution	3
PHYS 111 & 111L	Physics I and Physics I Laboratory	5
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
TEEL 675	Seminar in Education I	1
TESS 496	Student Teaching Secondary	11
<b>Hours</b>		<b>12</b>
<b>Total Hours</b>		<b>125</b>

**Academic Degree Maps** are term-by-term sample course plans that specify milestones, courses, and special requirements that are necessary for facilitating on-time completion. Degree Maps are *examples* and are not prescriptive. Individualized choices such as concentration options, transfer credits, optional minors, advisory programs (certificates), etc. can alter the recommended coursework. Course offerings are subject to change. Students should consult with their academic advisors for additional guidance on course planning.

To determine courses to take in the directed choices (often listed as Program Elective Course) and directed elective course blocks see the overview tab for courses. To locate approved courses in General Education areas (Undergraduate Programs) see the general education section (<https://catalog.fhsu.edu/general-education/>) of the catalog.

The undergraduate course maps typically advise the most efficient route for students to complete the general education requirements. Courses that are required in the major may be listed as fulfilling relevant general education requirements. This will result in more open elective course hours in some maps than is listed on the degree overview page.