

# **BACHELOR OF SCIENCE (B.S.) IN BIOLOGY FOR SECONDARY CERTIFICATION**

## **DEGREE PLAN FOR TEACHING CERTIFICATION IN SECONDARY EDUCATION IN BIOLOGY (6-12) AT WASHBURN UNIVERSITY**

To be certified to teach at the secondary level in Kansas, a candidate must satisfy the Kansas State Department of Education requirements for the teaching certification 6-12.

- Bachelor's degree from an accredited college or university
- Recommendation from an accredited institution verifying completion of a state-approved program in the subject or field in which certification is sought.
- Minimum cumulative GPA of 2.50 in the teaching field courses on a 4.0 scale.

To satisfy Kansas State Department of Education requirements for teaching certification in Biology (6-12), the state-approved program of the Department of Biology at Washburn requires that candidates fulfill the following requirements:

- Completion of the field-specified courses required by the Biology Department (as listed below) or substitutions thereof, approved by the University Officer in the Department of Education, in consultation with the Biology Department.
- Minimum cumulative GPA of 2.75 in the teaching field courses on a 4.0 scale.
- Successful completion of the State competency test for certification in Biology.

1. The B.S. degree requires 44 credit hours in Biology:

- a. 23 hours of core courses (credit hours in parenthesis). These are the same as the core courses for the B.A. degree and are required by all Biology majors.

BI102	General Cellular Biology	(5)	BI333	General Genetics	(4)
BI105	General Botany	(4)	BI390	Biology Seminar	(1)
BI110	General Zoology	(4)	BI395/6	Research in Biology	(1)
BI301	General Microbiology	(4)			

- b. Of the remaining 21 hours, 18 hours minimum must be in upper division courses – numbered 300 and above (credit hours in parenthesis).

c. Required courses for Biology Teacher Education

BI155	Sexually Transmitted Diseases	(1)	or BI325
BI202	Biology of Behavior	(3)	
BI250	Introduction to Human Anatomy	(3)	or BI275 or BI320
BI255	Human Physiology	(4)	
BI310	Ecology	(4)	
BI340	Evolutionary Biology	(2)	

d. Electives to complete the required 15 hours

BI275	Human Anatomy	(4)	BI330	Animal Physiology	(4)
BI302	Entomology	(4)	BI343	Human Genetics	(2)
BI303	Invertebrate Zoology	(4)	BI353	Molecular Genetics	(3)
BI305	Parasitology	(4)	BI355	Vertebrate Embryology	(5)
BI315	Vertebrate Anatomy	(4)	BI357	Histology	(4)
BI320	Comparative Vertebrate	(5)	BI362	Immunology	(3)
BI324	Systematic Botany	(3)	BI363	Immunology Lab	(2)
BI325	Microbiology of Human Diseases	(5)	BI370	Virology	(3)
			BI372	Virology Lab	(1)
BI328	Plant Anatomy & Physio	(3)			

2. Required physical sciences/math/computer science courses (credit hours in parenthesis)

**Chemistry:**

CH151	Fundamentals of Chemistry I	(5)
CH152	Fundamentals of Chemistry II	(5)
CH340	Organic Chemistry I	(3)
CH342	Organic Chemistry Laboratory I	(2)

**Physics:**

PS261	College Physics I AND	(5)
PS262	College Physics II	(5)
	OR	
PS281	General Physics I AND	(5)
PS283	General Physics II	(5)

**Mathematics and Computer Information Sciences:**

MA116	College Algebra	(3)
MA117	Trigonometry OR	(3)
MA140	Statistics	(3)

3. B.S. majors must complete a 30 hour minor in math or science with at least 20 hours in one department (most use their chemistry of Physics).

4. General Education Requirements:

General Education course requirements must be fulfilled according to the University catalog outline. 76 credits outside Biology.

EN101	(3)	Humanities	(9)
EN300	(3) must take Teaching Emph.	Social Sciences	(9) must take HI111, HI112, AN112
PE198	(2)		

5. Professional Education Requirements:

Courses are the same for both the B.A. and B.S. degrees.

ED150	EPIC Experience I	(1)
ED200	Educational Psychology	(3)
ED225	Becoming an Ed Professional	(3)
ED300	Integrating Technology	(3)
ED302	Exceptional Learners	(3)
ED385	Foundations	(3)
ED400	Understanding the School	(2)
ED402	Struggling Learners	(2)
ED405	Classroom Management	(1)
ED410	Secondary Student Teaching	(12)
ED350	Content Methods	(3)
RD484	Reading in Content Areas	(3)