Date Submitted: 02/03/25 10:02 am

Viewing: BIOLBS : Biology, Bachelor of Science

Last approved: 10/03/24 2:47 pm

Last edit: 02/10/25 11:20 am

Changes proposed by: nrgreen

Catalog Pages Using this Program

Biology B.S.

Biological Sciences (BISC)

Submitter:	User ID:	nrgreen ~~gdaugher~~	Phone:	2329 ~~5454~~
Program Status	Active			
Academic Level	Undergraduate			
Type of proposal	Major/Field of Study			

Select a reason for this modification

Making Minor Changes to an Existing Certificate, Degree or Program (including 15 or fewer hours, admission/graduation requirements, Focused Studies or Tracks)

Are you adding a concentration?

No

Are you adding or modifying a track?

No

Are you adding or modifying a focused study?

No

Effective Catalog Year: Fall 2025

College/School Code

In Workflow

1. **ARSC Dean Initial**
2. **Director of Curriculum Review and Program Assessment**
3. **Registrar Initial**
4. **Institutional Research**
5. **BISC Chair**
6. **ARSC Curriculum Committee**
7. **ARSC Dean**
8. **Global Campus**
9. **Provost Review**
10. **Undergraduate Council**
11. Faculty Senate
12. Provost Final
13. Registrar Final
14. Catalog Editor Final

Approval Path

1. 02/03/25 10:06 am Christopher Schulte (cschulte): Approved for ARSC Dean Initial
2. 02/03/25 3:57 pm Lisa Kulczak (lkulcza): Approved for Director of

Fulbright College of Arts and Sciences (ARSC)

Department Code

Department of Biological Sciences (BISC)

Program Code BIOLBS

Degree Bachelor of Science

CIP Code

Curriculum Review and Program Assessment

3. 02/03/25 4:18 pm Gina Daugherty (gdaugher): Approved for Registrar Initial
4. 02/03/25 4:19 pm Doug Miles (dmiles): Approved for Institutional Research
5. 02/04/25 9:26 am Michelle Evans White (mevanswh): Approved for BISC Chair
6. 02/10/25 11:44 am Nik Rowan (nrgreen): Approved for ARSC Curriculum Committee
7. 02/10/25 11:53 am Christopher Schulte (cschulte): Approved for ARSC Dean
8. 02/10/25 12:08 pm Suzanne Kenner (skenner): Approved for Global Campus
9. 02/10/25 3:30 pm Jim Gigantino (jgiganti):

Approved for Provost Review

History

1. Aug 15, 2014 by Leepfrog Administrator (clhelp)
2. Feb 12, 2015 by Charlie Alison (calison)
3. Feb 12, 2015 by Charlie Alison (calison)
4. Apr 27, 2016 by Donna Draper (ddraper)
5. May 27, 2020 by Charlie Alison (calison)
6. May 27, 2020 by Charlie Alison (calison)
7. Jun 1, 2020 by Lisa Kulczak (lkulcza)
8. Mar 8, 2021 by Karen Turner (kjvestal)
9. Jun 4, 2021 by Charlie Alison (calison)
10. Apr 8, 2022 by Ryan Cochran (rcc003)
11. Jan 12, 2024 by Gina Daugherty (gdaugher)
12. May 8, 2024 by Gina Daugherty (gdaugher)

13. Oct 3, 2024 by Jean Mitchell (jem03)

26.0101 - Biology/Biological Sciences, General.

Program Title

Biology, Bachelor of Science

Program Delivery Method

On Campus

Is this program interdisciplinary between two or more colleges or schools?

No

Do the proposed changes impact any specific course(s) from another college or school?

No

What are the total hours needed to complete the program? 120

Program Requirements and Description

Requirements

~~University and College Requirements for a Bachelor of Science in Biology~~University of Arkansas and ~~In addition to the~~ Fulbright College of ~~of~~ Arts and ~~and~~ Sciences Requirements for a Bachelor of Science in Biology

The following credit hour requirements ~~graduation requirements (see under Degree Completion Program Policy), the following course requirements~~ must be met (see Degree Completion Program Policy for additional information). ~~met.~~

State minimum core requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor. **Bolded** courses from the course list below may be applied to portions of the State Minimum Core requirements.

State Minimum Core	35

Mathematics		4
MATH 24004	**Calculus I (ACTS Equivalency = MATH 2405)**	
Statistics		3-4
Choose one statistics (STAT) course from the following:		
MATH 21003	**Principles of Statistics (ACTS Equivalency = MATH 2103)**	
STAT 28233	**Biostatistics**	
STAT 30043 & **STAT 30041**	**Statistical Methods and Statistics Methods Laboratory**	
Chemistry		19
CHEM 14103 & **CHEM 14101**	**University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)**	
CHEM 14203 & **CHEM 14201**	**University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)**	
CHEM 36053 & CHEM 36051	Organic Chemistry I and Organic Chemistry I Laboratory	
CHEM 36203 & CHEM 36201	Organic Chemistry II and Organic Chemistry II Laboratory	
CHEM 38103	Elements of Biochemistry	
Physics		8
Choose one two-semester sequence from the following:		
PHYS 20103 & **PHYS 20101**	**College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)**	
PHYS 20203 & **PHYS 20201**	**College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)**	
-or-		
PHYS 20304	**University Physics I (ACTS Equivalency = PHYS 2034)**	
PHYS 20404	**University Physics II (ACTS Equivalency = PHYS 2044 Lecture)**	
Philosophy		3

Choose one philosophy (PHIL) course from the following:		
PHIL 21003	**Introduction to Ethics (ACTS Equivalency = PHIL 1003)**	
PHIL 22003	**Logic (ACTS Equivalency = PHIL 1003)**	
PHIL 31103	Environmental Ethics	
PHIL 42103	Philosophy of Science	
Biology		40
BIOL 10104	**Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)** [1]	
BIOL 25473	Cell Biology	
BIOL 23373	General Genetics	
BIOL 30473	Evolutionary Biology	
BIOL 38773	General Ecology	
and a minimum of one lab chosen from the following:		
BIOL 25471	Cell Biology Laboratory	
BIOL 23371	General Genetics Laboratory	
BIOL 38771	General Ecology Laboratory	
At least 23 credit hours in biology (BIOL) or biology-related electives, including:		
1. At least 18 credit hours in biology (BIOL) courses numbered 30000-level or higher, of which at least 12 credit hours must be numbered 40000-level or higher.		
2. At least two lab courses numbered 20000-level or higher. This includes Biology Core labs not previously completed. Courses whose course descriptions explicitly exclude them from counting toward this requirement may not be used. Lab courses may also include BIOL 4807V Special Topics in Biological Sciences and BIOL 4997V Research in Biology Sciences (and their honors equivalents).		
3. No more than four credit hours numbered at the 10000-level are permitted. BIOL 10103/BIOL 10101 Principles of Biology/Principles of Biology Laboratory may not apply to this requirement.		
4. Completion of BIOL 4987V Senior Thesis or BIOL 499HV Honors Research in Biological Sciences		
Note: Biology-related electives that are not taught by the Department of Biological Sciences must be approved by a departmental faculty member using the “Exception Request for Major or Minor Requirements” form.		
General Electives		8

Total Hours	120

1 A student who, after completing BIOL 10103/BIOL 10101 Principles of Biology/Principles of Biology Laboratory with a grade of a 'B' or better in both courses, wishes to substitute BIOL 10103/BIOL 10101 for the required BIOL 10104 Biology for Majors may petition the Department of Biological Sciences to do so. These petitions will be considered on a case by case basis.

8-Semester Plan

B.S. in Biology
Eight-Semester Degree Plan

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

First Year	Units Fall	Spring
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)[1]	3	
Select one of the following (Satisfies General Education Outcome 2.1):[1]	3-4	
MATH 11003 College Algebra (ACTS Equivalency = MATH 1103)		
MATH 12003 Plane Trigonometry (ACTS Equivalency = MATH 1203)		
MATH 13004 Precalculus Mathematics (ACTS Equivalency = MATH 1305)		
MATH 24004 Calculus I (ACTS Equivalency = MATH 2405)[2]		
BIOL 10104 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) (Satisfies State minimum core Natural Science and General Education Outcome 3.4)[1]	4	
CHEM 14103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	4	
& CHEM 14101 University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)		
General Electives[1]	0-1	
ENGL 10203 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)[1]		3
MATH 12003 Plane Trigonometry (ACTS Equivalency = MATH 1203) (if needed--otherwise take general electives)		3-4
or MATH 13004 Precalculus Mathematics (ACTS Equivalency = MATH 1305)		
or MATH 24004 Calculus I (ACTS Equivalency = MATH 2405)		
CHEM 14203 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)		4
& CHEM 14201 University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)		
State Minimum Core—U.S. History (Satisfies General Education Outcome 4.2)[1]		3
General Electives[1]		1-2
Year Total:	15	15

Second Year	Units Fall	Spring
State Minimum Core—Fine Arts (Satisfies General Education Outcome 3.1)[1]	3	
Philosophy (PHIL) requirement	3	
BIOL 25473 Cell Biology (take BIOL 25471 if needed)	3	
CHEM 36053 Organic Chemistry I	4	
& CHEM 36051 Organic Chemistry I Laboratory		

& CHEM 36051 Organic Chemistry I Laboratory

General Electives[1]	2	
State Minimum Core—Social Science (Satisfies General Education Outcome 5.1)[1]		3
BIOL 23373 General Genetics (take BIOL 23371 if needed)		3
CHEM 36203 Organic Chemistry II		4
& CHEM 36201 Organic Chemistry II Laboratory		
BIOL Electives[2]		3
General Electives[1]		2
Year Total:	15	15

Third Year	Units	
	Fall	Spring
~~State Minimum Core—Social Science~~	~~3~~	-
Social Science State Minimum Core (Satisfies General Education Outcome 3.3)[1]	3	-
CHEM 38103 Elements of Biochemistry	3	
Select one of the following:	4	
PHYS 20103 College Physics I (ACTS Equivalency = PHYS 2014 Lecture)		
& PHYS 20101 College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)		
PHYS 20304 University Physics I (ACTS Equivalency = PHYS 2034)		
BIOL 30473 Evolutionary Biology	3	
BIOL Electives[2]	3	
MATH 21003 Principles of Statistics (ACTS Equivalency = MATH 2103)		3
or STAT 28233 Biostatistics		
or STAT 30043/30041 Statistical Methods		
Select one of the following:		4
PHYS 20203 College Physics II (ACTS Equivalency = PHYS 2024 Lecture)		
& PHYS 20201 College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)		
PHYS 20404 University Physics II (ACTS Equivalency = PHYS 2044 Lecture)		
BIOL 38773 General Ecology (take BIOL 38771 if needed)		3
BIOL Electives[2]		5
Year Total:	16	15

Fourth Year	Units	
	Fall	Spring
~~State Minimum Core—Social Science~~	~~3~~	-
Social Science State Minimum Core (Satisfies General Education Outcome 3.3[1]	3	-
BIOL Electives [2]	9	
~~General Electives~~	~~3~~	-
General Electives (as needed)[1]	3	-
State Minimum Core—Humanities (Satisfies General Education Outcomes 3.2 and 4.1)[1]		3
~~BIOL Electives ((Satisfies General Education Outcomes 1.2 and 6.1)~~[1]	-	~~3~~
BIOL Electives[2]	-	3
General Electives[1]		8

General Electives		6
Year Total:	15	14

Total Units in Sequence: 120

1

Students must complete the State Minimum Core and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements. Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

2

~~T~~Within the BIOL electives, students need to complete the following:
Take at least 18 hours of BIOL 30000+ courses, with at least 12 hours numbered at the 40000 level
Take at least two lab courses numbered 20000-level or higher. This includes Biology Core labs not previously completed. Courses whose course descriptions explicitly exclude them from counting toward this requirement may not be used. Lab courses may also include BIOL 4807V Special Topics in Biological Sciences and BIOL 4997V Research in Biology Sciences (and their honors equivalents).
Complete BIOL 4987V or BIOL 499HV which meets General Education Learning Outcome 6.1
No more than 4 our credit hours numbered at the 10000-level are permitted. BIOL 10103/BIOL 10101 Principles of Biology/Principles of Biology Laboratory may not apply to this requirement.

Are Similar Programs available in the area?

Yes

List institutions in Arkansas offering similar programs

NA

Why is the Program needed if offered at other institutions?

NA

Estimated Student Demand for Program: 1000-1300 ~~NA~~

Scheduled Program Review Date: 2028-29 ~~NA~~

Program Goals and Objectives

Program Goals and Objectives
1. Foster the scientific curiosity of students about biological sciences. 2. Communicate the current state of knowledge and technology to students. 3. Nurture critical thinking, reasoning, and problem-solving abilities. 4. Enhance students' communication skills for communicating scientific ideas. 5. Prepare students to achieve academic and professional success.

Learning Outcomes

Learning Outcomes
The following learning outcomes mirror those proposed in several recent reviews of biology pedagogy. They apply to the both the introductory biology course and to completion of the department's common core of courses, cell biology, genetics, evolutionary biology, and ecology. 1. Show that you can understand data that support the hypothesis that all organisms are genealogically related including the recognition that all organisms are cellular and that they share the same basic genetic system. 2. Show that you can understand data that support the hypothesis that all organisms need energy and a source of building blocks to maintain themselves, grow, and reproduce. 3. Show that you can understand data that support the hypothesis that all organisms use information to maintain themselves, grow, and reproduce, and that that information can both be stored genetically and be received from the environment. 4. Show that you can understand data that support the hypothesis that all organisms interact both with other organisms and with the physical components of their environment and that these interactions affect their ability to maintain themselves, grow, and reproduce. 5. Show that you can distinguish data-supported interpretations of biological systems from anecdotal information. 6. Show that you can understand and use quantitative methods for explaining how biological systems work. This will include graph interpretation, table interpretation, and basic mathematical formulas. 7. Show that you can apply the information that has been presented during the course to novel situations.

Description and justification of the request

Description of specific change	Justification for this change
Updated major to require students to take BIOL 4987V or BIOL 499HV (GELO 6.1 assessed courses). No change in overall size of major as new requirements can fit withing 23 hours of BIOL electives.	Updated major to require students to take BIOL 4987V or BIOL 499HV (GELO 6.1 assessed courses). No change in overall size of major as new requirements can fit withing 23 hours of BIOL electives.

Description of specific change	Justification for this change
Update 8 semester plan to reflect new requirement and to clarify how GELOs and State Minimum Core are met. Formatting changes to follow current ARSC standard.	Update 8 semester plan to reflect new requirement and to clarify how GELOs and State Minimum Core are met. Formatting changes to follow current ARSC standard.

Upload attachments

Reviewer Comments

Key: 111