

MAJOR MAP FOR BACHELOR OF SCIENCE IN PHYSICS CONCENTRATION IN BIOPHYSICS (PHYSBS-BIPH) 2019-20 THROUGH 2026-27 CATALOG YEARS

Name: _____ ID Number: _____ Date: _____ Anticipated Graduation Semester: _____

PHYSBS-BIPH Degree Snapshot

Advising Notes

University or College Requirements

Overall Academic Progress (120 total Hrs required):

_____ Eligible Units in Progress (In Progress Unused Registrations: _____)
_____ Units Satisfying + _____ Units Remaining = 120 Units Minimum (Does not include In Progress or Ineligible units)
[Additional courses may be required to complete chosen major(s)/minor(s).]

_____ Cumulative GPA- UofA courses only, 2.0 minimum

_____ Upper-Level Enrollment Requirement- 30-hrs 30000+ at UofA. (Units remaining after in-progress)

_____ Major Residency Rule- 19 hrs PHYS courses in residence. (Units remaining after in-progress)

_____ Fulbright College 40-hour rule- 40-hrs 30000+ or 20000+ w/ prereq (Units remaining after in-progress)

State Minimum Core Requirements

University Core in English Composition I (0-3 hrs)

_____ ENGL 10103/101H3 Composition I or exemption _____

University Core in English Composition II (0-3 hrs)

_____ ENGL 10203/102H3 Composition II or exemption _____

University Core in Mathematics (3 hrs possible overlap with **Calculus I**)

_____ MATH 11003 College Algebra or MATH 11103 Quantitative Reasoning (or higher MATH) _____

University Core in Science (8 hrs possible overlap with multiple classes in the major. Requirements that can overlap with this requirement are marked with **)

_____ Science w/ lab _____

_____ Science w/ lab _____

University Core in US History or Government (3 hrs)

_____ US HIST/PLSC _____

University Core in Fine Arts (3 hrs)

_____ Fine Art _____

University Core in Humanities (3 hrs)

_____ Humanities _____

University Core in Social Sciences (9 hrs)

_____ Social Science _____

_____ Social Science _____

_____ Social Science _____

Degree Requirements continued on Page 2 with Major Requirements

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Major Requirements

University Physics I (4 hrs)**

_____ PHYS 20304 University Physics I

University Physics II (4 hrs)**

_____ PHYS 20404 University Physics II

University Physics III (4 hrs)

_____ PHYS 20504 University Physics III

Electromagnetic Theory I (3 hrs)

_____ PHYS 34503 Electromagnetic Theory I

Modern Physics (3 hrs)

_____ PHYS 36103 Modern Physics

Introduction to Quantum Mechanics (3 hrs)

_____ PHYS 40703 Introduction to Quantum Mechanics

Physics Senior Seminar (1 hr)

_____ PHYS 49901 Physics Seminar

Calculus I (4 hrs)

_____ MATH 24004 Calculus I

Calculus II (4 hrs)

_____ MATH 25004 Calculus II

Calculus III (4 hrs)

_____ MATH 26004 Calculus III

Elementary Differential Equations (4 hrs)

_____ MATH 25804 Elementary Differential Equations

Linear Algebra (3 hrs)

_____ MATH 30803 Linear Algebra

Additional Science for PHYSBS (8 hrs)**

Choose 2 courses from the list below:

BIPH Concentration

Thermal Physics (3 hrs)

_____ PHYS 43303 Thermal Physics

Introduction to Biophysics and Biophysical Techniques (3 hrs)

_____ PHYS 46103 Intro to Biophysics and Biophysical Techniques

PHYSBS-BIPH Electives check 1: Junior Level Lab (1-4 hrs) Choose 1:

_____ PHYS 32103 Electronics in Experimental Physics

_____ PHYS 35404 Optics

_____ PHYS 3610V Modern Physics Laboratory

PHYSBS-BIPH Electives check 2: 10 hrs ASTR, BIOL, CHEM, or PHYS 30000+ (10 hrs)

Take 10 credit hours of ASTR, BIOL, CHEM, or PHYS courses numbered 30000 level or higher. Hours for individual classes vary

General Electives (20-37 hrs. Hours vary based on how much overlap students choose between major and core requirements. If required UNIV 10051 University Perspectives counts here.)

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Graduation Plan

Use the following additional resources in addition to this major map to complete your graduation plan ([Catalog](#) and your [Academic Progress Tab](#) in Workday Student). Many students have more than one major minor or pre-professional goal that has additional required classes. This tool allows you to combine all your educational goals into one plan.

High School credit	List all Advanced Placement International Baccalaureate Dual or Concurrent credit			
Year	Fall	Spring	Summer	Total
Year 1				Total 1 st year credit hours (aim for 30):
Year 2				Total 2 nd year credit hours (aim for 60):
Year 3				Total 3 rd year credit hours (aim for 90):
Year 4				Total 4 th year credit hours (Must be at least 120):

Please visit <https://catalog.uark.edu/undergraduatecatalog> for an extensive list of core major graduation and pre-requisite requirements. To read more about individual classes visit the [courses of instruction](#) page for course descriptions.

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Degree Requirement Breakdown by Category

The following information is designed to help you navigate your experience in your degree and answer common questions that may come up for each requirement. All requirements for graduation are documented on the [Catalog of Studies](#).

University or College Requirements		
Academic Requirement Name	Catalog Requirement	Additional Notes
Overall Academic Progress	Overall Academic Progress: 120 graduation eligible hours required	Overall Academic Progress: Students must earn a minimum of 120 credit hours. The total number of hours required to complete specific major and minor combinations may vary beyond 120 hours. - Graduation Eligible Hours: The following classes are not eligible for degree credit- ENGL 00001 ENGL 00101 MATH 00101 MATH 00202 MATH 01101 any duplicate credit where a course is not listed as repeatable in the catalog. These classes may show up in Workday Student as in-progress hours, but they will not post as units satisfying Overall Academic Progress when grades post.
Cumulative GPA	GPA: must be 2.0 or higher	GPA: Students must maintain a 2.0 Grade Point Average (GPA) to remain in good standing and be eligible for graduation.
Upper-Level Enrollment Requirement	Upper-Level Enrollment Requirement: minimum 30 hours 30000+ taken in residence	Upper-Level Enrollment Requirement (30-hr rule): Students are required to take at least 30 credit hours of upper-level (30000+) courses in residence. This includes UA faculty-led study abroad classes online/on-campus classes and courses offered through the Global Campus; and all other courses paid toward Fayetteville campus tuition and fees.
PHYSBS Residency Rule	PHYSBS Residency Rule: minimum 19 hours PHYS courses taken in residence	Residency Rule: Students must take at least 50% of their program (i.e. major or minor) requirements in residence. For programs that require classes from other departments this rule is defined only by required classes from the program's home department.
Fulbright College 40-Hour Rule	Fulbright College 40-hour rule: minimum 40 hours upper-level. Includes all 30000+ courses and 20000+ if the course has prerequisite.	Fulbright College 40-hour rule: Students must take at least 40 credit hours of upper-level courses. This includes courses numbered 30000 level or above or 20000 level courses if the course has a prerequisite. It is not limited to courses taken in residence.
State Minimum Core Requirements		
University Core in English Composition I 0-3 hrs	ENGL 10103/101H3 Composition I or SAT/ACT exemption	See Catalog for information about placement and/or exemption.
University Core in English Composition II 0-3 hrs	ENGL 10203/102H3 Composition II or SAT/ACT exemption	See Catalog for information about placement and/or exemption.

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<u>University Core in Mathematics</u> 3 hrs	Choose 1: • MATH 11003 College Algebra • MATH 11103 Quantitative Reasoning	Based on ACT/SAT or other math placement scores students may need to enroll in additional remediation related courses. See catalog or math placement website for additional information.
<u>University Core in Science</u> 8 hrs	Choose 2: (each class will have a required lecture and lab component): • ANTH 10143/ANTH 10141 Intro to Biological Anthropology (or ANTH 101H3/101H1) • ASTR 20003/20001 Survey of the Universe (or ASTR 200H3/200H1) • BIOL 10004 Biological Principles • BIOL 10103/10101 Principles of Biology (or BIOL 154H3/154H1) • BIOL 10104 Biology for Majors • BIOL 10303/10301 Plant Biology • BIOL 10503/10501 Principles of Zoology • BIOL 24003/24001 Human Anatomy • BIOL 24103/24101 Human Physiology • CHEM 10003/10001 Chemistry in the Modern World • CHEM 12103/12101 Fundamentals of Chemistry • CHEM 12073/12071 Chemistry for Majors I • CHEM 12283/12281 Chemistry for Majors II • CHEM 14103/14101 University Chemistry I • CHEM 14203/14201 University Chemistry II (or CHEM 142H3/142H1) • ENSC 10003/10001 Environmental Science (or ENSC 100H3/100H1) • ENTO 10203/10201 Insects Science and Society • GEOL 11103/11101 Physical Geology (or GEOL 111H3/111H1) • GEOL 11203/11201 Earth Science • GEOS 11504 Introduction to Geology for Science Majors • PHYS 10243/10241 Physics and Human Affairs (or PHYS 102H3/102H1) • PHYS 10304 Physics for Elementary Education Majors • PHYS 10404 Physics for Architects I • PHYS 10504 Physics for Architects II • PHYS 20103/20101 College Physics I • PHYS 20203/20201 College Physics II	Some classes will have pre-requisites

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	• PHYS 20304 University Physics I (or PHYS 203H4) • PHYS 20404 University Physics II (or PHYS 204H4)	
<u>University Core in US History or Government</u> 3 hrs	Choose 1: * • HIST 20003 History of the American People to 1877 • HIST 20103 History of the American People 1877 to Present • PLSC 20003 American National Government (or PLSC 200H3)	*Some courses may appear as options in multiple areas of the State Minimum Core. You can only count each course one time in State Minimum Core categories.
<u>University Core in Fine Arts</u> 3 hrs	Choose 1: * • ARCH 10003 Architecture Lecture (or ARCH 100H3) • ARHS 10003 Art Lecture (or ARHS 100H3) • COMM 10003 Film Lecture (or COMM 100H3) • DANC 10003 Dance Appreciation • ENGL 20103 Creative Writing 1 • HUMN 211H4 Honors Birth of Modern Culture 1600-1900 (honors only) • LARC 10003 The American Landscape (or LARC 100H3) • MUSC 10003 Experiencing Music (or MUSC 100H3) • MLIT 10103 Music and Society (music majors only. Or MLIT 101H3) • MLIT 13303 Popular Music • THTR 10003 Theatre Appreciation (or THTR 100H3) • THTR 10103 Musical Theatre Appreciation (or THTR 101H3) • THTR 16803 Acting I • THTR 18803 Acting 1 for Theatre majors	*Some courses may appear as options in multiple areas of the State Minimum Core. You can only count each course one time in State Minimum Core categories.
<u>University Core in Humanities</u> 3 hrs	Choose 1: * • AAST 20203 The African American Experience • ANTH 10303 Introduction to Archeology • ARCH 10103 Diversity and Design (or ARCH 101H3) • CLST 10003 Introduction to Classical Studies: Greece (or CLST 100H3) • CLST 10103 Introduction to Classical Studies: Rome (or CLST 101H3) • COMM 12303 Media Community and Citizenship (or COMM 123H3)	*Some courses may appear as options in multiple areas of the State Minimum Core. You can only count each course one time in State Minimum Core categories.

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	• DANC 10003 Dance Appreciation • DASC 21303 Data Privacy & Ethics • ENGL 11103 World Literature: Beginnings to 1650 CE (or ENGL 111H3) • ENGL 11203 World Literature: 1650 CE to Present (or ENGL 112H3) • ENGL 12103 Introduction to Literature (or ENGL 121H3) • ENGL 20103 Creative Writing I • GNST 20003 Introduction to Gender Studies (or GNST 200H3) • HUMN 112H4 Honors Equilibrium of Cultures 500-1600 (Honors only) • HUMN 22103 Introduction to World Religions • LALS 20103 Introduction to Latin American and Latino Studies • MRST 20103 Introduction to Medieval and Renaissance Studies • MUSY 20003 Music in World Cultures (or MUSY 200H3) • PHIL 20003 Introduction to Philosophy (or PHIL 200H3) • PHIL 21003 Introduction to Ethics • PHIL 22003 Logic • PHIL 23003 Human Nature and the Meaning of Life • PHIL 31003 Ethics and the Professions • THTR 10003 Theatre Appreciation (or THTR 100H3) • THTR 10103 Musical Theatre Appreciation (or THTR 101H3) • Any Intermediate level world language numbered at the 20000 level	
<u>University Core in Social Sciences</u> 9 hrs	Choose 3: * • AGECE 11003 Principles of Agriculture Microeconomics (or AGECE 110H3) • AGECE 21003 Principles of Agriculture Macroeconomics (or AGECE 210H3) • ANTH 10203 Intro to Cultural Anthropology (or ANTH 102H3) • COMM 10203 Communication in a Diverse World (or ANTH 102H3)	Students must take classes from at least two departments. *Some courses may appear as options in multiple areas of the State Minimum Core. You can only count each course one time in State Minimum Core categories.

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- ECON 21003 Principles of Macroeconomics (or ECON 210H3)
- ECON 22003 Principles of Microeconomics (or ECON 220H3)
- ECON 21403 Basic Economics: Theory and Practice (or ECON 214H3)
- GEOG 11103 Human Geography (or GEOG 111H3)
- GEOG 21003 World Regional Geography (or GEOG 210H3)
- HDFS 14003 Life Span Development (HDFS 140H3)
- HDFS 24103 Family Relations (or HDFS 241H3)
- HDFS 26003 Rural Families & Communities (HDFS 260H3)
- HIST 11193 Institutions and Ideas of World Civilizations I (or HIST 111H3)
- HIST 11293 Institutions and Ideas of World Civilizations II (or HIST 112H3)
- HIST 20003 History of the American People to 1877
- HIST 20103 History of the American People 1877 to Present
- HIST 20903 Animals in World History
- HUMN 111H4 Honors Roots of Culture to 500 C.E. (Honors only)
- HUMN 211H4 Honors Birth of Modern Culture 1600-1900 (honors only)
- INST 20103 Introduction to International and Global Studies
- INST 211H4 Honors Pathways to Global and Social Change
- JOUR 10203 Media and Society
- PLSC 20003 American National Government (or PLSC 200H3)
- PLSC 20103 Intro to Comparative Politics
- PLSC 21003 State and Local Government
- PLSC 28103 Intro to International Relations (or PLSC 281H3)
- PSYC 20003 General Psychology (or PSYC 200H3)
- RESM 28503 Leisure and Society (or RESM 285H3)

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	• SOCI 10103 General Sociology (or SOCI 201H3) • SOCI 20103 Social Problems • STEM 20003 The Art of STEM Communication	
<u>Major Requirements</u>		
<u>University Physics I</u> 4 hrs	PHYS 20304 University Physics I (Co-req: MATH 24004 Calculus I)	Prerequisites for MATH and STAT courses may vary based on math placement. See catalog and placement chart for more information.
<u>University Physics II</u> 4 hrs	PHYS 20404 University Physics II (Pre-req: PHYS 20304 University Physics I. Co-req: MATH 25004 Calculus II.)	
<u>University Physics III</u> 4 hrs	PHYS 20504 University Physics III (Pre-req: PHYS 20404 University Physics II. Co-req: MATH 26004 Calculus III)	Students may take MEEG 24003 and MEEG 35003 in lieu of PHYS 20504. Students will need to ask their department advisor to get this substitution once they are done with both courses.
<u>Electromagnetic Theory I</u> 3 hrs	PHYS 34503 Electromagnetic Theory I (Pre-req: MATH 26004 Calculus III and PHYS 20404 Calculus II. Co-Req: MATH 25804 Elementary Differential Equations)	
<u>Modern Physics</u> 3 hrs	PHYS 36103 Modern Physics (Pre-req: PHYS 20404 University Physics II)	
<u>Introduction to Quantum Mechanics</u> 3 hrs	PHYS 40703 Introduction to Quantum Mechanics (Pre-req: PHYS 36103 Modern Physics, MATH 26003 Calculus III, and MATH 25804 Elementary Differential Equations)	
<u>Physics Senior Seminar</u> 1 hr	PHYS 49901 Physics Seminar	A written report of a physics or astronomy research project must be submitted during Senior Seminar.
<u>Calculus I</u> 4 hrs	MATH 24004 Calculus I (Possible Pre-req: MATH 11003 with a C or higher and MATH 12003 or 13004 with a C or higher or Math placement)	MATH 24005 Calculus I with Review may also count here. Prerequisites for MATH and STAT courses may vary based on math placement. See catalog and placement chart for more information.
<u>Calculus II</u> 4 hrs	MATH 25004 Calculus II (Pre-req: MATH 24004 Calculus I with a grade of C or better)	Students must earn a C or higher to use a class as a pre-requisite.
<u>Calculus III</u> 4 hrs	MATH 26004 Calculus III (Pre-req: MATH 25004 Calculus II with a grade of C or better)	Students must earn a C or higher to use a class as a pre-requisite.
<u>Elementary Differential Equations</u> 4 hrs	MATH 25804 Elementary Differential Equations (Pre-req: MATH 25004 Calculus II with a grade of C or better)	Students must earn a C or higher to use a class as a pre-requisite.

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Linear Algebra 3 hrs	MATH 30803 Linear Algebra (Pre-req: MATH 24004 Calculus I or MATH 22004 Survey of Calculus with a C or better)	Students must earn a C or higher to use a class as a pre-requisite. Students may not receive credit for both MATH 30903 and MATH 30803. If students took MATH 30903 instead of MATH 30803 they should seek substitution from the department. MEEG 27003 can be substituted for MATH 30803. Students will need to ask their department advisor to get this substitution.
Additional Science for PHYSBS 8 hrs	Choose 2 sciences from below: • CHEM 14103/14101 University Chemistry I* • CHEM 14203/14101 University Chemistry II • CSCE 20004 Programming Foundations I • CSCE 20104 Programming Foundations II • BIOL 10103/10101 Principles of Biology • BIOL 10104 Biology for Majors • GEOL 11103/11101 Physical Geology • GEOL 11203/11201 Earth Science	*Students may count GNEG 11101 in lieu of CHEM 14101. Students will need to ask their academic advisor to adjust their degree audit. **Student may also count MEEG 32002 and 32102 for 4 hours of non-Physics Sciences. Students will need to ask their academic advisor to adjust their degree audit. Some courses may have additional prerequisites
BIPH Concentration		
Thermal Physics 3 hrs	PHYS 43303 Thermal Physics (Pre-req: PHYS 36103 Modern Physics)	
Introduction to Biophysics and Biophysical Techniques 3 hrs	PHYS 46103 Intro to Biophysics and Biophysical Techniques (Pre-req: PHYS 36103 Modern Physics)	
PHYSBS-BIPH Electives check 1: Junior Level Lab 1-4 hrs*	Choose 1: PHYS 32103 Electronics in Experimental Physics PHYS 35404 Optics PHYS 3610V Modern Physics Laboratory	* This is an overlapping requirement. Courses taken for this requirement will also count in PHYSBS-BIPH Electives check 2: 10 hrs ASTR, BIOL, CHEM, or PHYS 30000+ Some courses may have additional prerequisites
PHYSBS-BIPH Electives check 2: 10 hrs ASTR, BIOL, CHEM, or PHYS 30000+ 10 hrs*	Take 10 credit hours of ASTR, BIOL, CHEM, or PHYS courses numbered 30000 level or higher.	* This is an overlapping requirement. Courses taken for PHYSBS-BIPH Electives check 1: Junior Level Lab will also count here. Some courses may have additional prerequisites
General Electives 20-37 hrs	Hours will vary depending on concentration choice, possible overlap in major, and whether a student is exempt from ENGL 10103, ENGL 10203, and UNIV 10051.*	Some general electives may need to be upper-level to meet college and university residency requirements. * UNIV 10051 (or an equivalent course) is required for all incoming freshmen. Some students may have taken one of the following courses instead: AFLS 102H3,

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		BUSI/WCOB 11101, BUSI/WCOB 111H1, GNEG 11101, GNEG 111H1, HIST 1003(H), HIST 10001, HIST 100H1, PLSC 10003, PLSC 100H3, STEM 12001. Students who transfer to the University of Arkansas with at least 24 credit hours are not required to take UNIV 10051.
<u>Honors</u>	Minimum Requirements for Honors: • Maintain cumulative grade point average of 3.5. • Complete Honors <u>Capstone Project</u> • Complete all required Honors Courses See <u>Catalog</u> for full description of requirements.*	Honors Capstone Project Timeline: Honors students should consistently work with their academic advisor and thesis advisor to ensure they stay on track with their honors requirements, but can consult the <u>Fulbright Honors</u> SharePoint for important dates. * Students following honors requirements from a catalog earlier than 2025-26 should consult with their academic advisor to confirm requirements.