

# Physics B.S. with Optics Concentration

## Physics B.S. with Optics Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy>) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area. Students should consult their advisers.

First Year	Units	
	Fall	Spring
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)	3	
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) <sup>1</sup>	4	
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) <sup>1</sup>	4	
University/State Core US History requirement	3	
General Elective	1	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)		3
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) (Sp, Su, Fa) <sup>1</sup>		4
PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) <sup>1</sup>		4
University/State Core Fine Arts or Humanities requirement		3
General Electives		2
Year Total:	15	16

Second Year	Units	
	Fall	Spring
PHYS 2094 University Physics III <sup>1</sup>	4	
Select one of the following four-hour lecture/lab combinations	4	
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)		
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)		
CSCE 2004 Programming Foundations I		
CSCE 2014 Programming Foundations II		

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) or BIOL 1584 Biology for Majors		
GEOS 1113 General Geology (ACTS Equivalency = GEOL 1114 Lecture) & GEOS 1111L General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)		
GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124 Lecture) & GEOS 1131L Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)		
MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) (Sp, Su, Fa) <sup>1</sup>	4	
University/State Core Humanities or Fine Arts requirement (as needed)		3
General Elective		1
PHYS 3613 Modern Physics <sup>1,2</sup>		3
PHYS 3213 Electronics in Experimental Physics (Recommended; else, 3000+ level PHYS or ASTR course) <sup>1,2</sup>		3
MATH 2584 Elementary Differential Equations (Sp, Su, Fa) <sup>1,2</sup>		4
Select one of the following four-hour lecture/lab combinations		4
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)		
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)		
CSCE 2004 Programming Foundations I		
CSCE 2014 Programming Foundations II		
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) or BIOL 1584 Biology for Majors		
GEOS 1113 General Geology (ACTS Equivalency = GEOL 1114 Lecture) & GEOS 1111L General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)		
GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124 Lecture) & GEOS 1131L Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)		
Year Total:	16	14

Third Year	Units	
	Fall	Spring
PHYS/ASTR Group A <sup>1,2</sup>	4	
PHYS/ASTR Group A or General Elective	4	

MATH 3083 Linear Algebra (Sp, Su, Fa)	3	
University/State Core Social Science requirement	3	
PHYS 3453 Electromagnetic Theory I <sup>1,2</sup>		3
University/State Core Social Science requirement		3
University/State Core Social Science requirement		3
General Elective or PHYS/ASTR Group A (as needed) <sup>1,2</sup>		3-4
General Elective		4
Year Total:	14	16

Fourth Year	Units	
	Fall	Spring
PHYS 4073 Introduction to Quantum Mechanics <sup>1,2</sup>	3	
PHYS 3544 Optics <sup>1,2</sup>	4	
General Electives	9	
PHYS 4991 Physics Senior Seminar <sup>1,2</sup>		1
PHYS 4734 Introduction to Laser Physics <sup>1,2</sup> or PHYS 4773 Introduction to Optical Properties of Materials		4
General Electives		8
Year Total:	16	13

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Total Units in Sequence: 120

<sup>1</sup> Meets 40-hour advanced credit hour requirement. See College Academic Regulations.

<sup>2</sup> Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations.

Group A: Any PHYS or ASTR classes numbered 3000 or above.  
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