

Cleveland State University  
College of Sciences and Health Professions  
Bachelor of Arts in Physics

**First Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
ASC 101 Introduction to University Life	1		INTRO	ENG 102 English II	3		W/C
ENG 101 English I	3		W/C	MTH 182 Calculus II	4	X	M/QL
MTH 181 Calculus I	4	X	M/QL	Social Science Elective (outside the US/ALAAME)	3 to 4		SS
Social Science Elective	3 to 4		SS	US Diversity Elective	3 to 4		DIV
Arts & Humanities Elective	3 to 4		A&H				
<i>Semester Total</i>	14 to 16			<i>Semester Total</i>	13 to 15		

**Second Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
PHY 243 University Physics I	5	X	NS; WAC	PHY 244 University Physics II	5	X	NS; WAC
MTH 281 Multivariable Calculus OR MTH 220 OR MTH 284	4	X		CIS 260 Programming	4	X	
CHM 261/266 Gen Chemistry I/Lab OR BIO 200/201 Intro Biology I/Lab	4 to 5	X	NS	CHM 262/267 Gen Chemistry II/Lab OR BIO 202/203 Intro Biology II/Lab	4 to 5		NS
African American Experience Elective	3 to 4		DIV	Arts & Humanities Elective (outside the US/ALAAME)	3 to 4		A&H
<i>Semester Total</i>	16 to 18			<i>Semester Total</i>	16 to 18		

**Third Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
PHY 330 Introduction to Modern Physics	4	X		PHY Elective (300/400 Level)**	4	X	
PHY Elective (300/400 Level)**	4	X		Field Elective (300/400 Level)**	4	X	
General Elective*	3 to 4			General Elective*	3 to 4		
Writing Across the Curriculum Elective	3 to 4		WAC	General Elective*	3 to 4		
<i>Semester Total</i>	14 to 16			<i>Semester Total</i>	14 to 16		

**Fourth Year**

Fall Semester	Credits	Major	Gen Ed	Spring Semester	Credits	Major	Gen Ed
PHY 474 Thermal Physics	4	X	CAP	PHY Elective (300/400 Level)**	4	X	
Field Elective (300/400 Level)**	4	X		Field Elective (300/400 Level)**	4	X	
PHY Elective (300/400 Level)**	4	X		Field Elective (300/400 Level)**	4	X	
General Elective*	3 to 4			Upper Division Elective*	3 to 4		
<i>Semester Total</i>	15 to 16			<i>Semester Total</i>	15 to 16		
<b>Degree Total: 117-131 (128 hours minimum)</b>							

Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency

**College/ Program Notes:**

The plan above is a suggested guide to ensure that all General Education, College, University, and Major requirements are met within 4 years of study. Students may deviate from the suggested placement of Gen Ed courses, although the M/QL and W/C requirements should be completed during the first year of study.

\*Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 128 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made (3 credit hour vs. 4 credit hour courses), students may not need as many general electives as indicated above, or may need additional electives.

\*\* Physics majors must complete 16 credits of 300/400-level PHY courses **AND** 16 credits of 300/400-level courses from a coherent program in a different discipline such as biology, chemistry, computer science, mathematics, environmental science, education or engineering. Of these 32 total credits, **4 MUST** be a 300/400-level lab course.

**University Notes:**

Gen Ed Key:	
INTRO = Introduction to University Life (one course)	SS = Social Sciences (two courses, one of which must be focused outside the US**)
W/C = Writing/Composition (two courses; C or better required)	A&H = Arts & Humanities (two courses, one must be focused outside the US**)
M/QL = Mathematics/Quantitative Literacy (two courses)	DIV = Social Diversity (two courses; one US Diversity and one African American Experience)
NS = Natural Sciences (two courses, one of which must have a lab)	WAC/SPAC = Writing/Speaking Across the Curriculum (three courses, one in the major; C or better required)
	CAP = Capstone
	** of the SS and A&H courses focused outside the US, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)

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Cleveland State University  
College of Sciences and Health Professions  
Bachelor of Arts in Physics  
CSUTeach Dual Field Licensure in Life Science and Physics, Grades 7-12  
Minor in Biology, Minor in Education

**First Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
ENG 101 English I	3		W/C	ENG 102 English II	3		W/C				
MTH 181 Calculus I	4	X	M/QL	MTH 182 Calculus II	4	X	M/QL				
PSY 221 Adolescent Psychology	3	X	SS	PHY 243 University Physics I	5	X	NS;WAC				
ASC 101 Introduction to University Life	1		INTRO	BIO 202/203 Introductory Biology/Lab II	4	X	NS				
BIO 200/201 Introductory Biology/Lab I	4	X	NS	EUT 201 Inquiry Approaches to Teaching	1	X					
<b>Semester Total</b>	<b>15</b>			<b>Semester Total</b>	<b>17</b>			<b>Semester Total</b>	<b>0</b>		

**Second Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 244 University Physics II	5	X	NS;WAC	BIO 304/305 Population Biology/Lab	4	X		CHM 262/267 Gen Chem II	5	X	NS
BIO 302/303 Animal Biology/Lab	4	X		CHM 261/266 General Chemistry/Lab I	5	X	NS				
MTH 281 Multivariable Calculus	4	X		EVS 206 Intro to Environmental Science	4	X	NS				
EUT 217 Inquiry in Science	1	X		CIS 260 Intro to Programming	4	X					
Arts & Hum Elective (outside US/ALAAME)	3 to 4		A&H								
<b>Semester Total</b>	<b>17 to 18</b>			<b>Semester Total</b>	<b>17</b>			<b>Semester Total</b>	<b>5</b>		

**Third Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 330 Intro to Modern Physics	4	X		PHY 335 Modern Physics Laboratory**	4	X		BIO 306 Biochemistry	4	X	
PHY 470 Environmental Physics	4	X		CHM 331 Organic Chemistry I	4	X		EDL 305 Content Area Lit	3	X	
PHY 474 Thermal Physics	4	X	CAP	EUT 305 Classroom Interactions	3	X					
EUT 302 Knowing & Learning	3	X		African American Experience Elective	3 to 4		DIV				
EDC 300 Diversity in Educational Settings	3	X	DIV	HPR 101 Wellness	1	X					
<b>Semester Total</b>	<b>18</b>			<b>Semester Total</b>	<b>15 to 16</b>			<b>Semester Total</b>	<b>7</b>		

**Fourth Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 440 Quantum Physics I	4	X		EST 499 STEM Student Teaching	6	X					
PHY 340 Mechanics and Vibrations**	4	X		EUT 210 Perspectives in Math & Science	3	X	A&H				
PHY 301 Research Methods	3	X	WAC	PHY 350 Electricity and Magnetism**	4	X					
EUT 317 Project-Based Instruction	3			Social Sci Elective (outside US/ALAAME)	3 to 4		SS				
<b>Apply for Spring graduation prior to Sep 9th</b>											
<b>Semester Total</b>	<b>14</b>			<b>Semester Total</b>	<b>16 to 17</b>			<b>Semester Total</b>	<b>0</b>		
<b>Degree Total: 141-143</b>											

Assumptions: college-level readiness in MTH & ENG; no Foreign Language Deficiency

**College/ Program Notes:**

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\*Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 128 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon other elective choices made (3 credit hour vs. 4 credit hour courses), students may not need as many general electives as indicated above, or may need additional electives.

\*\*Not offered every semester. Check with department for availability

**University Notes:**

<b>Gen Ed Key:</b>	SS = Social Sciences (two courses, one of which must be focused outside the US)** A&H = Arts & Humanities (two courses, one must be focused outside the US**) DIV = Social Diversity (two courses; one US Diversity and one African American Experience) WAC/SPAC = Writing/Speaking Across the Curriculum (three courses, one in the major; C or better required) CAP = Capstone ** of the SS and A&H courses focused outside the US, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)
INTRO = Introduction to University Life (one course)	
W/C = Writing/Composition (two courses; C or better required)	
M/QL = Mathematics/Quantitative Literacy (two courses)	
NS = Natural Sciences (two courses, one of which must have a lab)	

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Cleveland State University  
College of Sciences and Health Professions  
Bachelor of Arts in Physics  
CSUTeach Dual Field Licensure in Chemistry and Physics, Grades 7-12  
Minor in Chemistry, Minor in Education

**First Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
ENG 101 English I	3		W/C	ENG 102 English II	3		W/C				
MTH 181 Calculus I	4	X	M/QL	MTH 182 Calculus II	4	X	M/QL				
PSY 221 Adolescent Psychology	3	X	SS	PHY 243 University Physics I	5	X	NS;WAC				
ASC 101 Introduction to University Life	1		INTRO	EVS 206 Intro to Environmental Science	4	X	NS				
Arts & Hum Elective (outside US/ALAAME)	3 to 4		A&H	EUT 201 Inquiry Approaches to Teaching	1	X					
<b>Semester Total</b>	<b>14 to 15</b>			<b>Semester Total</b>	<b>17</b>			<b>Semester Total</b>	<b>0</b>		

**Second Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 244 University Physics II	5	X	NS;WAC	CHM 262/267 General Chemistry/Lab II	5	X	NS	CHM 331/336 O Chem/Lab	6	X	
CHM 261/266 General Chemistry/Lab I	5	X	NS	CIS 260 Intro to Programming	4	X					
MTH 281 Multivariable Calculus	4	X		EDC 300 Diversity in Educational Settings	3	X	DIV				
EUT 217 Inquiry in Science	1	X		Social Sci Elective (outside US/ALAAME)	3 to 4		SS				
				HPR 101 Wellness	1	X					
<b>Semester Total</b>	<b>15</b>			<b>Semester Total</b>	<b>16 to 17</b>			<b>Semester Total</b>	<b>6</b>		

**Third Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 330 Intro to Modern Physics	4	X		PHY 335 Modern Physics Laboratory**	4	X		BIO 380 Biology Content	5	X	
PHY 470 Environmental Physics	4	X		CHM 320 Survey of Physical Chemistry**	4	X		EDL 305 Content Area Lit	3	X	
PHY 474 Thermal Physics	4	X	CAP	CHM 404 Environmental Chemistry	3	X					
EUT 302 Knowing & Learning	3	X		EUT 305 Classroom Interactions	3	X					
				African American Experience Elective	3 to 4		DIV				
<b>Semester Total</b>	<b>15</b>			<b>Semester Total</b>	<b>17 to 18</b>			<b>Semester Total</b>	<b>8</b>		

**Fourth Year**

Fall Semester				Spring Semester				Summer Semester			
Credits	Major	Gen Ed		Credits	Major	Gen Ed		Credits	Major	Gen Ed	
PHY 340 Mechanics and Vibrations**	4	X		EST 499 STEM Student Teaching	6	X					
CHM 310/315 Analytical Chemistry/Lab	4	X		EUT 210 Perspectives in Math & Science	3	X	A&H				
PHY 301 Research Methods	3	X	WAC	PHY 350 Electricity and Magnetism**	4	X					
EUT 317 Project-Based Instruction	3	X		PHY 440 Quantum Physics I	4	X					
CHM 471 Faculty Colloquium	1	X									
<b>Apply for Spring graduation prior to Sep 9th</b>											
<b>Semester Total</b>	<b>15</b>			<b>Semester Total</b>	<b>17</b>			<b>Semester Total</b>	<b>0</b>		
<b>Degree Total: 140-143</b>											

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