

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

First Year

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

Second Year

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		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 Calc [^] OR MTH 283/284 [^]	4	X		Arts and Humanities Elective**	3		A&H
African American Experience Elective	3		DIV	General Elective*	3		
General Elective*	3			General Elective*	3		
<i>Semester Total</i>	15			<i>Semester Total</i>	14		

Third Year

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		Credits	Major	Gen Ed
PHY 474 Thermal Physics	3	X		Physics Elective (300/400)	3	X	
PHY 320 Computational Physics ^{^^}	3	X		Upper Division Elective*	3		
Writing Across the Curriculum Elective	3		WAC	Upper Division Elective*	3		
PHY 330 Modern Physics	3	X		General Elective*	3		
General Elective*	3			General Elective*	3		
<i>Semester Total</i>	15			<i>Semester Total</i>	15		

Fourth Year

Fall Semester				Spring Semester			
	Credits	Major	Gen Ed		Credits	Major	Gen Ed
Physics Elective (300/400)	3	X		Physics Elective (300/400)	3	X	
Physics Elective (300/400)	3	X		Physics Elective (300/400)	3	X	
Upper Division Elective*	3			Upper Division Elective*	3		
Upper Division Elective*	3			Upper Division Elective*	3		
General Elective*	3			General Elective*	3		
				PHY 498 Capstone Senior Project	1	X	CAP
Apply for Spring graduation by the middle of this term							
<i>Semester Total</i>	15			<i>Semester Total</i>	16		
Degree Total (as listed in above sample): 120 (120 hours minimum required to earn degree)							

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.

*General Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 total credit hours**, of which a **minimum of 42 credit hours** must be upper division (300 or 400-level courses). Depending upon elective choices made, students may not need as many general electives as indicated above, or may need additional electives.

[^]Any course or a combination of courses (minimum 4 credit hours) from the following list: MTH 220, MTH 281, MTH 283, MTH 284, MTH 288, or ESC 250

^{^^}CIS 260, ESC 151, ESC 152, or MTH 311 may be used as substitutes. Students should be aware that using a 100 or 200-level course here will require additional upper division elective hours.

University Notes:

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

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Cleveland State University
College of Arts and Sciences
 Bachelor of Arts in Physics
 CSUteach (license in Education)

First Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
ASC 101: Intro to University Life	1			Intro										
ENG 101: College Writing I	3			W/C	ENG 102: College Writing II	3			W/C					
BIO 200/201: Introductory Biology I + Lab	4	x		NS	BIO 202/203: Introductory Biology II + Lab	4	x		NS					
PSY 221: Adolescent Psychology	3		x	SS	PHY 241/243/H: University Physics I*	5	x		NS					
MTH 181: Calculus I	4	x		M/QL	MTH 182: Calculus II	4	x		M/QL					
<i>Semester Total</i>	15				<i>Semester Total</i>	16				<i>Semester Total</i>	0			

Second Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EUT 201: Step 1: Inquiry Approaches to Teaching	1		x		EDB 242: Introduction to Education	3		x	DIV	African American Experience Elective	3			DIV
PHY 242/244/H: University Physics II*	5	x		NS	GEO 100/101: Introduction to Geology + lab	4	x			CIS 151: Invitation to Computing	3	x		
CHM 261/266: General Chemistry I + Lab	4	x		NS	CHM 262/267: General Chemistry II + Lab	4	x		NS					
MTH 281: Multivariable Calculus	4	x			PHY Elective: 3xx/4xx	3	x							
Arts & Humanities Elective (**ALAAME)	3			A&H	BIO 304/305: Population Biology & Ecology + Lab	4	x							
<i>Semester Total</i>	17				<i>Semester Total</i>	18				<i>Semester Total</i>	6			

Third Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EDB 302: Psychological Foundations of Education	3		x	WAC	EUT 305: Classroom Interactions	3		x		EDL 305: Content Area Literacy	3		x	
PHY Elective 3xx/4xx	3	x			PHY Elective: 3xx/4xx	3	x			STA 147: Statistical Concepts with App	3		x	M/QL
PHY 470: Environmental Physics	3	x			PHY Elective: 3xx/4xx	3	x			EDC 200: Div in Edu Setting	3		x	DIV
PHY 330: Modern Physics	3	x			EVS 206: Intro to Environmental Science	3	x		NS					
CIS 260: Introduction to Programming	4	x			PHY 201: Astronomy: Stars and Galaxies	3			WAC					
<i>Semester Total</i>	16				<i>Semester Total</i>	15				<i>Semester Total</i>	9			

Fourth Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EUT 417: Project Based Instruction in Science	3		x		EST 499: CSUteach STEM Apprentice Teaching II	6		x						
EST 399: CSUteach STEM Apprentice Teaching I	1		x		EUT 210: Perspectives on Science & Math	3		x	A&H/WAC					
EUT 311: Research Methods	3		x	WAC	CHM 255: Environmental Chemistry	3	x	x						
PHY Elective: 3xx/4xx	3	x			Social Science Elective (**ALAAME)	3			SS					
PHY 474: Thermal Physics	4	x		CAP										
ESE 400: Introduction to Special Education	3		x	WAC										
Apply for Spring graduation by the middle of this term														
<i>Semester Total</i>	17				<i>Semester Total</i>	15				<i>Semester Total</i>	0			
Degree Total: 144														

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.

*Students must choose either PHY 243/H or PHY 244/H to meet WAC requirements. If one is not chosen, an additional WAC course will need to be added

Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 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.

University Notes:

<p>Gen Ed Key: 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) ** of the SS and A&H courses, one must be focused on Africa, Latin America, Asia or the Middle East (ALAAME)</p>	<p>SS = Social Sciences (two courses from different departments) A&H = Arts & Humanities (two courses from different departments) 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</p>
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Cleveland State University
College of Arts and Sciences
 Bachelor of Arts in Physics
 CSUteach (minor in Mathematics and license in Education)

First Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
ASC 101: Intro to University Life	1			Intro										
ENG 101: College Writing I	3			W/C	ENG 102: College Writing II	3			W/C					
BIO 200/201: Intro to Biology I + Lab -OR- CHM 261/262: Gen Chem I + Lab	4	x		NS	BIO 202/203: Intro to Biology II + Lab -OR- CHM 262/267: Gen Chem II + Lab	4	x		NS					
PSY 221: Adolescent Psychology	3		x	SS	PHY 241/243/H: University Physics I	5	x		NS					
MTH 181: Calculus I	4	x		M/QL	MTH 182: Calculus II	4	x		M/QL					
Semester Total	15				Semester Total	16				Semester Total	0			

Second Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EUT 201: Step 1: Inquiry Approaches to Teaching	1		x		EDB 242: Introduction to Education	3		x	DIV	CIS 151: Invitation to Computing	3	x		
PHY 242/244/H: University Physics II	5	x		NS	CIS 260: Introduction to Programming	4	x			STA 323: Statistical Methods	3	x		
EVS 206: Intro to Environmental Science	3	x		NS	MTH 288: Linear Algebra	3	x			EDC 200: Div in Edu Setting	3		x	DIV
MTH 281: Multivariable Calculus	4	x			PHY Elective: 3xx/4xx	3	x			African American Experience	3			DIV
PHY 470: Environmental Physics	3	x			MTH 220: Discrete Mathematics	3	x		SS					
Semester Total	16				Semester Total	16				Semester Total	12			

Third Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EDB 302: Psychological Found of Ed	3		x	WAC	EUT 305: Classroom Interactions	3		x		ESE 400: Intro to Special Edu	3		x	
PHY Elective: 3xx/4xx	3	x			PHY Elective: 3xx/4xx	3	x			EDL 305: Content Area Literacy	3		x	
MTH 301: Introduction to Number Theory	3	x			MTH 358: Abstract Algebra	3	x	x	WAC					
MTH 333: Geometry	3	x			MTH 201: Functions & Modeling	3		x						
PHY 330: Modern Physics	3	x			PHY Elective: 3xx/4xx	3	x							
PHY Elective: 3xx/4xx	3	x			BIO 380/381: Bio Content Mid Sch Teach -OR- CHM 380 Prin of Chem Mid Sch Teach	3 or 4		x						
Semester Total	18				Semester Total	18				Semester Total	6			

Fourth Year														
Fall Semester	Credits	Major	License	Gen Ed	Spring Semester	Credits	Major	License	Gen Ed	Summer Semester	Credits	Major	License	Gen Ed
EUT 415: Project Based Instruction in Math	3		x		EST 499: CSUteach STEM Apprentice Teaching II	6		x						
EUT 417: Project Based Instruction in Science	3		x		EUT 210: Perspectives on Science & Math	3	x	x	A&H/WAC					
EST 399: CSUteach STEM Apprentice Teaching I	1		x		Social Science Elective (**ALAAME)	3			SS					
EUT 311: Research Methods	3		x	WAC	Arts & Humanities Elective (**ALAAME)	3			A&H					
PHY 474: Thermal Physics	3	x	x	CAP										
STA 424: Probability Theory & Application	3	x	x											
Apply for Spring graduation by the middle of this term														
Semester Total	16				Semester Total	15				Semester Total	0			

Degree Total: 148-149

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

College/ Program Notes:

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If a student chooses BIO 200/201 and BIO 202/203, he/she must choose CHM 380. If a student chooses CHM 262/266 and CHM 262.267, he/she must choose BIO 380/381.

Electives ensure that a student accumulates the minimum credit hour totals needed for graduation. Students must have a **minimum of 120 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.

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INTRO = Introduction to University Life (one course)	
W/C = Writing/Composition (two courses; C or better required)	
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