PHYSICS - BACHELOR OF ARTS

The curriculum for the Bachelor of Arts degree is designed for students who would like to have a firm foundation in physics combined with study in another area and greater flexibility in choosing elective courses. The program requires a minor in a second field of study chosen by the student in consultation with an advisor. A second major may be used to satisfy the program requirement for a minor.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

General Education 10 Area I: Communications 10 English Composition - Level 1 1 English Composition - Level 2 0ral Communication Area II: Mathematics 1 MATH 1511 G Calculus and Analytic Geometry 1 ² 4 Area III: Laboratory Sciences and Social/Behavioral Sciences 10-11 Area III: Laboratory Sciences Course (4 credits) ^{1,3} 1 Either an Area III/IV: Laboratory Sciences Course (3 credits) ¹ 1 Either an Area III/IV: Laboratory Sciences Course (3 credits) ^{1,3} 3 Area V: Social/Behavioral Sciences Course (4 or 3 credits) ^{1,3} 3 Area V: Humanities ¹ 3 Area V: Humanities ¹ 3 Area V: Humanities ¹ 3 Area V: Creative and Fine Arts ¹ 3 General Education Elective 6 Departmental Requirements ⁵ 6 Departmental Requirements ⁵ 6 PHYS 2110 Mechanics PHYS 2140 Electricity and Magnetism 4 2120L and Experimental Mechanics PHYS 2140 Electricity & Magnetism Laboratory PHYS 315 Modern Physics </th <th>Prefix</th> <th>Title</th> <th>Credits</th>	Prefix	Title	Credits
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	MATH 3160	Introduction to Ordinary Differential Equations	3

Select 18 credits from a Minor in a second field from another department	18
Second Language Requirement: (required - see below)	0-8
Electives, to bring the total credits to 120 ^{5,6}	5-14
Total Credits	120

- See the General Education (https://catalogs.nmsu.edu/nmsu/generaleducation-viewing-wider-world/) section of the catalog for a full list of courses.
- ² MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.
- ³ See alternatives for meeting General Education requirements.
- ⁴ See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/ general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses
- ⁵ May not be taken S/U and must earn a grade of C- or better.
- ⁶ Elective credit may vary based on General Education course selection, second language requirements, prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their Physics Advisor.

Second Language Requirement

For the Bachelor of Arts in Physics there is a one year second language requirement, the options to complete this requirement are listed below. The number of credits that a student needs to take may vary depending on what level they come in with. Please speak with an advisor for more information as to which courses you will need to take to fulfill the second language requirement for this degree.

Option 1:		
Prefix	Title	Credits
Complete one of the fo	bllowing sequences:	
FREN 1110 & FREN 1120	French I and French II	8
GRMN 1110 & GRMN 1120	German I and German II	8
JAPN 1110 & JAPN 1120	Japanese I and Japanese II	8
SPAN 1110 & SPAN 1120	Spanish I and Spanish II	8
For Heritage Speakers:		
SPAN 1220 or SPAN 2210	Spanish for Heritage Learners II Spanish for Heritage Learners III	3
PORT 1110 or PORT 1120	Portuguese I Portuguese II	3
Option 2:		

Prefix	Title	Credits
Complete the follow	ing sequence for American Sign Language (with a	
C- or better):		
SIGN 1110	American Sign Language I	3
SIGN 1120	American Sign Language II	3

Option 3:

option o.		
Prefix	Title	Credits
Challenge the 1120 le	vel for the following courses:	
FREN 1120	French II	4
or GRMN 1120	German II	
or JAPN 1120	Japanese II	
or SPAN 1120	Spanish II	
OR		
Challenge the 1110/1	120/1220/2210 level for the following courses:	
PORT 1110	Portuguese I	3
or PORT 1120	Portuguese II	
or SPAN 1220	Spanish for Heritage Learners II	
or SPAN 2210	Spanish for Heritage Learners III	

Option 4:

Pass a three-credit, upper-division course (numbered 300 or above) taught in a second language by the department of Languages and Linguistics.

Option 5:

Obtain college certification of completion of two years of a second language at the high school level with a grade of C- or higher in the second-year level.

Option 6:

By obtaining certification of a working knowledge of a Native American language from the American Indian program director.

Option 7:

By obtaining, from the head of the Department of Languages and Linguistics, certification of a working knowledge of a second language if such language is not taught at NMSU.

Option 8:

In the case of a foreign student who is required to take the TOEFL exam admission, the dean will automatically waive the second language requirement.

Suggested Minors for the Bachelor of Arts Physics Major

Astronomy Minor— A Bachelor of Arts in Physics with a minor in Astronomy provides an excellent preparation for students who wish to pursue graduate studies in Astrophysics or Astronomy.

Pre-Medicine Studies Minor— Students wishing to attend a medical or dental post-graduate school are strongly encouraged to obtain a minor in a life science field such as biochemistry, biology, human biology or microbiology.

Prelaw Minor— Students wishing to attend a post-graduate law school should obtain a minor in a law-related field, such as government, accounting, finance, or international business.

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change. Full-time students are usually required to take at least 15 credits per semester.

First Year		
Semester 1		Credits
ENGL 1110G	Composition I ¹	4
MATH 1511G	Calculus and Analytic Geometry I ¹	4
PHYS 1111	Introductory Computational Physics ¹	3
PHYS 2110	Mechanics	4
& 2110L	and Experimental Mechanics ¹	
PHYS 2111	Supplemental Instruction to PHYS 2110	1
	Credits	16
Semester 2		
ENGL 2210G	Professional and Technical Communication Honors ¹	3
MATH 1521G or MATH 1521H	Calculus and Analytic Geometry II ¹ or Calculus and Analytic Geometry II Honors	4
PHYS 2140 & 2140L	Electricity and Magnetism and Electricity & Magnetism Laboratory ¹	4
PHYS 2141	Supplemental Instruction to PHYS 2140 ¹	1
Area V: Humanities Co		3
	Credits	15
Second Year		
Semester 1		
MATH 2530G	Calculus III ¹	3
PHYS 2120 & 2120L	Heat, Light, and Sound and Heat, Light, and Sound Laboratory ¹	4
PHYS 2121	Supplemental Instruction to PHYS 2120	1
Area VI: Creative and F		3
Minor (or Elective) Cou		3
		5
	Credits	14
Semester 2	Credits	14
Semester 2 MATH 3160	Credits Introduction to Ordinary Differential Equations	14 3
	Introduction to Ordinary Differential Equations	3
MATH 3160		
MATH 3160 PHYS 315	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315	3
MATH 3160 PHYS 315 PHYS 316	Introduction to Ordinary Differential Equations ¹ Modern Physics ¹	3 3 1
MATH 3160 PHYS 315 PHYS 316 PHYS 325	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication	3 3 1 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication	3 3 1 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse	3 3 1 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse	3 3 1 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse	3 3 1 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1	Introduction to Ordinary Differential Equations Modern Physics Supplemental Instructions to PHYS 315 Intermediate Experimental Physics Introduction to Communication Urse Credits Intermediate Mathematical Methods of	3 3 1 3 3 3 3 16
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395	Introduction to Ordinary Differential Equations Modern Physics Supplemental Instructions to PHYS 315 Intermediate Experimental Physics Introduction to Communication Urse Credits Intermediate Mathematical Methods of Physics 1	3 3 1 3 3 3 16 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451	Introduction to Ordinary Differential Equations 1 Modern Physics 1 Supplemental Instructions to PHYS 315 Intermediate Experimental Physics 1 Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics 1 Intermediate Mechanics 1 Intermediate Electricity and Magnetism 1	3 3 1 3 3 3 3 16 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 461	Introduction to Ordinary Differential Equations Modern Physics Supplemental Instructions to PHYS 315 Intermediate Experimental Physics Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics Intermediate Mechanics I Intermediate Electricity and Magnetism I Troduction Course	3 3 1 3 3 3 3 16 3 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 461 VWW: Viewing a Wider	Introduction to Ordinary Differential Equations Modern Physics Supplemental Instructions to PHYS 315 Intermediate Experimental Physics Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics Intermediate Mechanics I Intermediate Electricity and Magnetism I Troduction Course	3 3 1 3 3 3 3 16 3 3 3 3 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 461 VWW: Viewing a Wider	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication Urse Credits Intermediate Mathematical Methods of Physics ¹ Intermediate Mechanics I ¹ Intermediate Electricity and Magnetism I ¹ rWorld Course ³ Language Series	3 3 1 3 3 3 16 3 3 3 3 3 3 4
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 451 PHYS 461 VWW: Viewing a Wider First Course in Second	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication Urse Credits Intermediate Mathematical Methods of Physics ¹ Intermediate Mechanics I ¹ Intermediate Electricity and Magnetism I ¹ World Course ³ Language Series Credits Intermediate Electricity and Magnetism II ¹	3 3 1 3 3 3 3 3 3 3 3 3 3 4
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 451 PHYS 461 VWW: Viewing a Wider First Course in Second Semester 2 PHYS 462 PHYS 480	Introduction to Ordinary Differential Equations 1 Modern Physics 1 Supplemental Instructions to PHYS 315 Intermediate Experimental Physics 1 Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics 1 Intermediate Electricity and Magnetism I 1 r World Course 3 d Language Series Credits Intermediate Electricity and Magnetism II 1 Thermodynamics 1	3 3 1 3 3 3 3 16 3 3 3 3 3 3 3 3 4 15-16
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 461 VWW: Viewing a Wider First Course in Second Semester 2 PHYS 462 PHYS 480 VWW: Viewing a Wider	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics ¹ Intermediate Electricity and Magnetism I ¹ r World Course ³ Language Series Credits Intermediate Electricity and Magnetism II ¹ Thermodynamics ¹ World Course ³ World Course ³	3 3 1 3 3 3 16 3 3 3 3 3 3 3 4 15-16 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 451 VWW: Viewing a Wider First Course in Second Semester 2 PHYS 462 PHYS 480 VWW: Viewing a Wider Area IV: Social and Bet	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics ¹ Intermediate Mechanics I ¹ Intermediate Electricity and Magnetism I ¹ r World Course ³ Language Series Credits Intermediate Electricity and Magnetism II ¹ Thermodynamics ¹ r World Course ³ havioral Science Course ²	3 3 1 3 3 3 3 16 3 3 3 3 3 3 3 3 3 4 15-16 3 3 3 3 3
MATH 3160 PHYS 315 PHYS 316 PHYS 325 COMM 1115G Minor (or Elective) Cou Third Year Semester 1 PHYS 395 PHYS 451 PHYS 461 VWW: Viewing a Wider First Course in Second Semester 2 PHYS 462 PHYS 480 VWW: Viewing a Wider	Introduction to Ordinary Differential Equations Modern Physics ¹ Supplemental Instructions to PHYS 315 Intermediate Experimental Physics ¹ Introduction to Communication urse Credits Intermediate Mathematical Methods of Physics ¹ Intermediate Mechanics I ¹ Intermediate Electricity and Magnetism I ¹ r World Course ³ Language Series Credits Intermediate Electricity and Magnetism II ¹ Thermodynamics ¹ r World Course ³ havioral Science Course ²	3 3 1 3 3 3 3 16 3 3 3 3 3 3 4 15-16 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3

Fourth Year

Semester 1

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PHYS 454	Intermediate Modern Physics I ¹	3
Minor (or Elective) Course		3
Minor (or Electiv	Minor (or Elective) Course	
Minor (or Electiv	e) Course	3
Elective Course		3
	Credits	15
Semester 2		
PHYS 455	Intermediate Modern Physics II ¹	3
Minor (or Electiv	e) Course	3
Minor (or Electiv	e) Course	3
Elective Course		3
Elective Course		2-0
	Credits	14-12
	Total Credits	120

¹ These courses may have prerequisites and/or co-requisites, and it is the students responsibility for checking and fulfilling all those requirements.

 ² See the General Education (https://catalogs.nmsu.edu/nmsu/generaleducation-viewing-wider-world/) section of the catalog for a full list of courses.

³ See the Viewing a Wider World (https://catalogs.nmsu.edu/ nmsu/general-education-viewing-wider-world/ #viewingawiderworldtext) section of the catalog for a full list of courses.