

## Physics, B.S.

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### Requirements

A Bachelor in Physics provides the student with an understanding of the laws of nature and with the experimental and analytical techniques necessary to describe and solve problems in physical systems.

The degree prepares students for further graduate study in physics, astronomy, geophysics, medicine, engineering or many other diverse fields. Bachelor's recipients also find employment in a variety of industries and careers, including engineering, education, computer science, programming, electronics, energy and the environment, geology, medical physics, optics, finance, law and more.

### Total Program Credits: 120

Matriculation Requirements:		
1. Advisor approval.		
2. Completion of PHYS 2210 and MATH 1210 with a C or higher.		
General Education Requirements:		37 Credits
	<a href="#">ENGL 1010</a> Introduction to Academic Writing CC	3
or	<a href="#">ENGL 1005</a> Literacies and Composition Across Contexts CC	
	<a href="#">ENGL 2010</a> Intermediate Academic Writing CC	3
	<a href="#">MATH 1210</a> Calculus I QL	4
Complete one of the following:		3
	<a href="#">HIST 2700</a> US History to 1877 AS (3)	
and	<a href="#">HIST 2710</a> US History since 1877 AS (3)	
	<a href="#">HIST 1700</a> American Civilization AS (3)	
	<a href="#">HIST 1740</a> US Economic History AS (3)	
	<a href="#">POLS 1000</a> American Heritage SS(3)	
	<a href="#">POLS 1100</a> American National Government AS (3)	
Complete the following:		
	<a href="#">PHIL 2050</a> Ethics and Values IH	3
	<a href="#">HLTH 1100</a> Personal Health and Wellness TE (2)	
or	<a href="#">EXSC 1097</a> Fitness for Life TE	2
Distribution Courses:		
	Biology	3
	Physical Science	3
	Additional Biology or Physical Science	3
	Humanities Distribution	3
	Fine Arts Distribution	3
	Social/Behavioral Science	3
Discipline Core Requirements:		63 Credits
	<a href="#">PHYS 2210</a> Physics for Scientists and Engineers I PP	4
	<a href="#">PHYS 2215</a> Physics for Scientists and Engineers I Lab	1
	<a href="#">PHYS 2220</a> Physics for Scientists and Engineers II PP	4
	<a href="#">PHYS 2225</a> Physics for Scientists and Engineers II Lab	1

<a href="#">PHYS 3110</a>	Modern Physics I	3
<a href="#">PHYS 3115</a>	Introduction to Experimental Physics I WE	2
<a href="#">PHYS 3120</a>	Modern Physics II	3
<a href="#">PHYS 3125</a>	Introduction to Experimental Physics II WE	2
<a href="#">PHYS 3230</a>	Principles of Electronics for the Physical Sciences	3
<a href="#">PHYS 3300</a>	Mathematical Physics	3
<a href="#">PHYS 3330</a>	Computational Physics	3
<a href="#">PHYS 3400</a>	Classical Mechanics	3
<a href="#">PHYS 3500</a>	Thermodynamics	3
<a href="#">PHYS 3600</a>	Optics	3
<a href="#">PHYS 4210</a>	Advanced Experimental Techniques	3
<a href="#">PHYS 4410</a>	Electrostatics and Magnetism	3
<a href="#">PHYS 4420</a>	Electrodynamics	3
<a href="#">PHYS 4510</a>	Quantum Mechanics I	3
<a href="#">PHYS 490R</a>	Seminar (0.5 credits, taken 4 times)	2
<a href="#">MATH 1220</a>	Calculus II	4
<a href="#">MATH 2210</a>	Calculus III	4
<a href="#">MATH 2280</a>	Ordinary Differential Equations	3
Elective Requirements:		21 Credits
Complete 21 credits from the following courses. The selection of elective coursework should present a coherent theme such as engineering physics, medical physics, nuclear physics, geophysics, computational physics, etc. (Consult Advisor or Department Chair for assistance or to consider possible course substitutions.)		21
<a href="#">ASTR 2040</a>	Intermediate Astronomy (3)	
<a href="#">ASTR 3050</a>	Astrophysics I (3)	
<a href="#">ASTR 3060</a>	Astrophysics II (3)	
<a href="#">ASTR 4100</a>	Brown Dwarfs and Exoplanets (3)	
<a href="#">ASTR 4350</a>	Research Methods in Astronomy (3)	
<a href="#">PHYS 1100</a>	Introductory Math Techniques for Physics and Engineering (3)	
<a href="#">PHYS 2500</a>	Elementary Fluids and Thermal Physics (3)	
<a href="#">PHYS 2700</a>	Biophysics (undefined)	
<a href="#">PHYS 2800</a>	Introduction to Materials Physics (3)	
<a href="#">PHYS 3310</a>	Advanced Mathematical Physics (3)	
<a href="#">PHYS 3350</a>	Applications of LabVIEW in Physics (3)	
<a href="#">PHYS 3700</a>	Particle Physics (3)	
<a href="#">PHYS 3800</a>	Energy use on Earth (3)	
<a href="#">PHYS 4150</a>	Medical Physics (3)	
<a href="#">PHYS 4250</a>	Nuclear Physics (3)	
<a href="#">PHYS 4350</a>	Research Methods in Physics (3)	
<a href="#">PHYS 4520</a>	Quantum Mechanics II (3)	
<a href="#">PHYS 4700</a>	Acoustics (3) <sup>1</sup>	
<a href="#">PHYS 4800</a>	Solid State Physics (3) <sup>1</sup>	

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	PHYS 481R	Physics Internship (1-4) (no more than 4 hours counted toward degree)	
	PHYS 489R	Undergraduate Research in Physics (1-3) (no more than 9 hours counted toward degree)	
	PHYS 492R	Topics in Physics (3) (may only be taken once toward degree credit)	
	PHYS 495R	Independent Readings (1-3) (no more than 3 hours counted toward degree)	
	PHYS 499A	Senior Project (2) <sup>1</sup>	
	PHYS 499B	Senior Thesis (1) <sup>1</sup>	
See Physics Department academic advisor for possibly more complete and up to date list.			
	CHEM 1210	Principles of Chemistry I PP (4) <sup>2</sup>	
	CHEM 1215	Principles of Chemistry I Laboratory (1)	
	CHEM 1220	Principles of Chemistry II PP (4) <sup>2</sup>	
	CHEM 1225	Principles of Chemistry II Laboratory (1)	
Any CHEM course 2310 or higher except internship and independent study type courses.			
Any EENG course 2700 or higher except internship and independent study type courses.			
Any ENGR course 2010 or higher except internship and independent study type courses.			
	MATH 2270	Linear Algebra (3)	
Any MATH course 3200 or higher except internship and independent study type courses.			
Any GEO course 3080 or higher, except internship and independent study-type courses.			
	METO 3100	Climate and the Earth System (3)	
<b>Notes:</b>			
<ol style="list-style-type: none"> <li>1. Suggested elective option for the student intent on continuing physics studies in graduate school.</li> <li>2. Strongly recommended for inclusion in any elective option.</li> </ol>			

### **Graduation Requirements:**

1. Completion of a minimum of 120 semester credits.
2. Overall grade point average of 2.0 (C) or above with no grade lower than a "C" in core and elective requirement courses.
3. Residency hours--minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
4. Completion of GE and specified departmental requirements.
5. Successful completion of at least one Global/Intercultural course.

## Physics, B.S. Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in [Wolverine Track](#).

Semester 1	Course Title	Credit Hours
MATH 1210 or PHYS 1100	Calculus I QL or Introductory Math Techniques for Physics and Engineering	4
ENGL 1010 or ENGH 1005	Introduction to Academic Writing CC or Literacies and Composition Across Contexts CC	3
EXSC 1097 or HLTH 1100	Fitness for Life TE or Personal Health and Wellness TE	2
PHYS 2210	Physics for Scientists and Engineers I PP	4
PHYS 2215	Physics for Scientists and Engineers I Lab	1
	Semester total:	14
Semester 2	Course Title	Credit Hours
MATH 1220	Calculus II	4
PHYS 2220	Physics for Scientists and Engineers II PP	4
PHYS 2225	Physics for Scientists and Engineers II Lab	1
ENGL 2010	Intermediate Academic Writing CC	3
Fine Arts		3
	Semester total:	16
Semester 3	Course Title	Credit Hours
PHYS 3110	Modern Physics I	3
PHYS 3115	Introduction to Experimental Physics I WE	2
MATH 2210	Calculus III	4
PHYS 3300	Mathematical Physics	3
PHYS 490R	Seminar	.5
Humanities		3
PHIL 205G	Ethics and Values IH GI	3
	Semester total:	18.5
Semester 4	Course Title	Credit Hours
MATH 2280	Ordinary Differential Equations	3
PHYS 3230	Principles of Electronics for the Physical Sciences	3
PHYS 3120	Modern Physics II	3
PHYS 3125	Introduction to Experimental Physics II WE	2
PHYS 490R	Seminar	3
Soc/Behavioral Elective		3
	Semester total:	14.5
Semester 5	Course Title	Credit Hours
PHYS 3400	Classic Mechanics	3
PHYS 3500	Thermodynamics	3
Physics Electives		9

	Semester total:	15
Semester 6	Course Title	Credit Hours
PHYS 3300	Computational Physics	3
PHYS 3600	Optics	3
Physics Electives		9
PHYS 490R	Seminar	0.5
	Semester total:	15.5
Semester 7	Course Title	Credit Hours
PHYS 4210	Advanced Experimental Techniques	3
PHYS 4410	Electrostatics and Magnetism	3
PHYS 4510	Quantum Mechanics I	3
PHYS 499A	Senior Project	2
Physics Elective		3
PHYS 490R	Seminar	.5
	Semester total:	14.5
Semester 8	Course Title	Credit Hours
PHYS 3600	Optics	3
PHYS 4420	Electrodynamics	3
PHYS 499B	Senior Thesis	1
Physics Electives		6
	Semester total:	13
	Degree total:	120