

# PHYSICS

## Plan of Study

Below is a sample plan of study that illustrates one way to achieve the program requirements. Any given student's plan of study may differ based on a variety of factors (e.g., advanced credit, placement exams, adding a minor). Enrolled students will work with their academic advisor; utilize the degree audit/planner to create a specific plan of study.

Course	Title	Hours
<b>Freshman</b>		
<b>Fall</b>		
EM 104	Graphical Communications	2
MA 111	Calculus I	5
PH 111	Physics I	4
PH 111L	Physics I Lab	0
HUM H190	First-Year Writing Seminar	4
RHIT 100	Foundations for Rose-Hulman Success	1
<b>Hours</b>		<b>16</b>
<b>Winter</b>		
MA 112	Calculus II	5
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Lab	1
PH 112	Physics II	4
PH 112L	Physics II Lab	0
Computing Elective <sup>1</sup>		4
<b>Hours</b>		<b>17</b>
<b>Spring</b>		
MA 113	Calculus III	5
CHEM 113	General Chemistry II	3
CHEM 113L	General Chemistry II Laboratory	1
PH 113	Physics III	4
PH 113L	Physics III Lab	0
HSSA Elective		4
<b>Hours</b>		<b>17</b>
<b>Sophomore</b>		
<b>Fall</b>		
MA 221	Matrix Algebra & Differential Equations I	4
PH 235	Many-Particle Physics	4
PH 292	Physical Optics	4
Free Elective <sup>2</sup>		4
<b>Hours</b>		<b>16</b>
<b>Winter</b>		
MA 222	Matrix Algebra & Differential Equations II	4
PH 200	Career Preparation	1
PH 255	Foundations of Modern Physics	4
HSSA Elective		4
Select one of the following:		4
MA 373	Applied Linear Algebra for Engineers	
MA 371	Linear Algebra I <sup>3</sup>	
<b>Hours</b>		<b>17</b>
<b>Spring</b>		
MA 330	Vector Calculus	4
Tech Elective		4
PH 314	Theoretical Mechanics I	4
HSSA Elective		4
<b>Hours</b>		<b>16</b>
<b>Junior</b>		
<b>Fall</b>		
MA 336	Boundary Value Problems	4

PH 316	Electric & Magnetic Fields	4
Physics Elective		2
HSSA Elective		4
PH 290 or PH 490	Directed Research or Directed Research	1
<b>Hours</b>		<b>15</b>
<b>Winter</b>		
PH 317	Electromagnetism	4
PH 401	Introduction to Quantum Mechanics	4
ENGL H290	Technical & Professional Communication	4
Technical Elective <sup>2</sup>		4
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
OE 450	Laser Systems & Applications	4
PH 325	Adv Physics Laboratory I	4
PH 327	Thermodynamics & Statistical Mechanics	4
HSSA Elective		4
<b>Hours</b>		<b>16</b>
<b>Senior</b>		
<b>Fall</b>		
HSSA Elective		4
PH 405	Semiconductor Materials & Applications	4
Technical Elective <sup>2</sup>		4
Free Elective		4
*For Thesis Track - additionally take PH 496 (see Requirements page for more details on selecting the Thesis Option)		
<b>Hours</b>		<b>16</b>
<b>Winter</b>		
PH 425 or PH 497	Advanced Physics Lab II (for Non-Thesis Track only) or Senior Thesis	4
HSSA Elective		4
Technical Elective <sup>2</sup>		4
Free Elective <sup>2</sup>		4
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
Select one of the following:		4
Physics Elective (for Non-Thesis Track only) or PH 498 (Thesis Track)		
Technical Elective <sup>2</sup>		4
PH 499	Physics Ethics & Communication	1
Physics Elective		4
PH 490	Directed Research	1
<b>Hours</b>		<b>14</b>
<b>Total Hours</b>		<b>192</b>

<sup>1</sup> Computing elective: ME 123 Computer Programming or CSSE 120 Introduction to Software Development

<sup>2</sup> Free, Math and technical electives are only suggestions and can change subject to offering. Electives must be approved by PHON advisor.

<sup>3</sup> MA 371 Linear Algebra I (F or S) can be substituted for MA 373 Applied Linear Algebra for Engineers (W)