

**B.S. DEGREE in PHYSICS+**  
with Aerospace Engineering Emphasis  
**Iowa State University**

Semester 1	Freshman Year	Semester 2	
Critical Thinking and Comm. - Engl 150	3	<b>Intro to Class. Physics II – Phys 242</b>	5
Introductory Seminar - Phys 199	R	<b>Calculus III - Math 265</b>	4
<b>Intro to Classical Physics I – Phys 241</b>	5	Social Science Choice	3
<b>Calculus II – Math 166</b>	4	General Chemistry I Chem 177+177L <sup>2</sup>	5
Humanities Choice	3		17
Library Instruction – Lib 160	1		
	<u>16</u>		

Semester 1	Sophomore Year	Semester 2	
WOVE Composition - Engl 250	3	<b>Aerospace Engineering Problems with Computer Applications Lab - AER E 160</b>	3
<b>Intro to Modern Physics I - Phys 321</b>	3	<b>Classical Mechanics - Phys 361</b>	3
<b>Intro Lab in Mod Phys I - Phys 321L</b>	1	<b>Introduction to Partial Differential Equations - Math 385</b>	3
<b>Elementary Differential Equations and Laplace Transforms – Math 267</b>	4	<b>Engineering Statics - E M 274</b>	3
Humanities Choice	3	Social Science Choice	3
Foreign Language (or Elective)	4(3)	Foreign Language (or Elective)	4(3)
	<u>18(17)</u>		<u>19(18)</u>

Semester 1	Junior Year	Semester 2	
<b>Numerical, Graphical and Lab Techniques for Aerospace Engineering - AER E 161</b>	3	<b>Engineering Thermodynamics I - M E 231</b>	3
<b>Classical Mechanics II - Phys 362</b>	3	<b>Introduction to Performance and Design - AER E 261</b>	3
<b>Electricity and Magnet. I - Phys 364</b>	3	Seminar – Phys 389	R
<b>Engineering Dynamics - E M 345</b>	3	Natural Science Elective	3
<b>Matrix/Lin. Algebra – Math 207/317</b>	3(4)	Social Science Choice	3
English Proficiency Requirement - Engl 302, 305, 309 or 314	3	Humanities Choice	3
	<u>18(19)</u>		<u>15</u>

Semester 1	Senior Year	Semester 2	
<b>Aerodynamics I: Incompressible Flow - AER E 310</b>	3	<b>Astrodynamics I -AER E 351</b>	3
Elective	3	<b>Aerodynamics II: Compressible Flow - AER E 311</b>	3
<b>Quantum Mechanics – Phys 480</b>	3	<b>Introduction to Astrophysics - ASTRO 346</b>	3
<b>Introduction to Solar System Astronomy- ASTRO 342</b>	3	Humanities Choice	3
<b>Astronomy Laboratory - ASTRO 344L</b>	3	Elective	3
	<u>15</u>		<u>15</u>

<sup>1</sup> Students must earn a minimum of two laboratory credits from Phys 310, 311, 311T, 450L, 470L, Astro 344L or 450L.

<sup>2</sup> Chem 177 + Chem 177L can be used as Natural Science Electives

Students in all ISU majors must complete a three-credit course in U.S. diversity and a three-credit course in international perspectives. Check (<http://www.iastate.edu/~registrar/courses/div-list.html>) for a list of approved courses. Discuss with your adviser how the two courses that you select can be applied to your graduation plan.

LAS majors require a minimum of 120 credits, including a minimum of 45 credits at the 300/400 level. You must also complete the LAS foreign language requirement.