

# B.S. DEGREE in PHYSICS+

## with Computer Science 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	Natural Science, e.g. General Chemistry	
Arts&Humanities + IP prespective*	3	I - Chem 177+177L	<u>5</u>
Library Instruction – Lib 160	<u>1</u>		17
	16		

Semester 1	Sophomore Year	Semester 2	
WOVE Composition - Engl 250	3	<b>Classical Mechanics - Phys 361</b>	3
<b>Intro to Modern Physics I – Phys 321</b>	3	<b>Introduction to Partial Differential</b>	
<b>Intro Lab in Mod Phys I - Phys 321L</b>	1	<b>Equations - Math 385</b>	3
<b>Elementary Differential Equations and</b>		<b>Introduction to Data Structures - Com S 2</b>	<u>3</u>
<b>Laplace Transforms – Math 267</b>	4	Social Science Choice	3
<b>Intro to Object-oriented Programming -</b>		Humanities Choice	<u>3</u>
<b>Com S 227</b>	<u>4</u>		15
	15		

Semester 1	Junior Year	Semester 2	
<b>Discrete Computational Structures -</b>		<b>Thermal Physics – Phys 304</b>	3
<b>Com S 230</b>	3	<b>Software Development Practices -</b>	
<b>Electricity and Magnet. I - Phys 364</b>	3	<b>Com S 309</b>	3
English Proficiency Requirement -		Intermediate Laboratory – Phys 311 <sup>1</sup>	2
Engl 302, 305, 309 or 314	3	Social Science Choice	3
<b>Matrix/Lin. Algebra – Math 207/317</b>	3(4)	Foreign Language (or Elective)	<u>4(3)</u>
Foreign Language (or Elective)	<u>4(3)</u>		15(14)
	15-17		

Semester 1	Senior Year	Semester 2	
<b>Advanced Programming Techniques -</b>		Computer Science Elective <sup>2</sup>	3
<b>Com S 327</b>	3	<b>Probability and Statistics for Computer</b>	
Humanities Choice	3	<b>Science - Stat 330</b>	3
<b>Quantum Mechanics – Phys 480</b>	3	Humanities choice	3
Natural Science Choice	3	Electives	<u>6</u>
<b>Design and Analysis of Algorithms -</b>			15
<b>Com S 311</b>	<u>3</u>		
	15		

\* Students should choose a course that satisfy both Arts& Humanities and International Prospective requirements

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

<sup>2</sup> Students are suggested a Computer Science elective among ComS 321, ComS 331, ComS 336, ComS 342, Com S 362, Com S 363, Com S 409, Com S 410, Com S 417, Com S 424

Students in all ISU majors must complete a three-credit course in U.S. diversity, a three-credit course in international perspectives, 9 credits in Social Science, 8 credits in Natural Science and 12 credits in Arts and Humanities courses. 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.