

B.S. DEGREE in PHYSICS+

with Data Science Emphasis

Iowa State University

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

Semester 1	Sophomore Year	Semester 2	
WOVE Composition - Engl 250	3	Classical Mechanics - Phys 361	3
Intro to Modern Physics I – Phys 321	3	Introduction to Partial Differential	
Intro Lab in Mod Phys I - Phys 321L	1	Equations - Math 385	3
Elementary Differential Equations and		Introduction to Data Structures - Com S	
Laplace Transforms – Math 267	4	228	3
Intro to Object-oriented Programming -		Social Science Choice	3
Com S 227	4	Humanities Choice	3
	<u>15</u>		<u>15</u>

Semester 1	Junior Year	Semester 2	
Introduction to Data Science - DS 201	3	Thermal Physics – Phys 304	3
Electricity and Magnet. I - Phys 364	3	Software Development Practices - Com S 301	3
English Proficiency Requirement -		Discrete Computational Structures - ComS	3
Engl 302, 305, 309 or 314	3	Foreign Language (or Elective)	4(3)
Matrix/Lin. Algebra – Math 207/317	3(4)	Natural Science Choice	3
Foreign Language (or Elective)	4(3)		<u>16(15)</u>
	<u>15-17</u>		

Semester 1	Senior Year	Semester 2	
Data Acquisition and Exploratory Data		Applied Data Modeling and Predictive	
Analysis - DS202	3	Analysis - DS301	3
Humanities Choice	3	Intermediate Laboratory – Phys 311 ¹	3
Quantum Mechanics – Phys 480	3	Humanities choice	3
Statistics for Comp Science - Stat 330	3	Social Science Choice	3
Design and Analysis of Algorithms - Com S		Computer Science Elective ²	
311 ²	3		3
	<u>15</u>		<u>15</u>

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

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

² Students are suggested a Computer Science elective among ComS 321, ComS 331, ComS 336, ComS 342, Com S 362, Com S 311. 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 course, 8 credits in Natural Science courses 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.