

# PHYSICS, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN COMPUTATIONAL PHYSICS

## Recommended Four-Year Plan

Course	Title	Hours
<b>First Year</b>		
<b>Fall</b>		
ENGL 102	Critical Writing	3
ESAP 101	FIRST Seminar *	1
MATH 225	Calculus I	4
PHYS 211	General Physics I with Lab	4
SUBJ 139	Foundations of Academic Discovery <sup>1</sup>	3
<b>Hours</b>		<b>15</b>
<b>Spring</b>		
ENGL 104	Critical Reading	3
PHYS 213	General Physics III/ Lab	4
MATH 230	Calculus II	4
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>14</b>
<b>Second Year</b>		
<b>Fall</b>		
CHEM 107 & CHEM 111	General Chemistry I and General Chemistry I Lab	4
CPSC 146	Programming Principles	3
MATH 231	Calculus III	4
PHYS 212	General Physics II with Lab	3
Declare a Thematic Thread <sup>2</sup>		3
<b>Hours</b>		<b>14</b>
<b>Spring</b>		
CPSC 246	Advanced Programming Principles	3
MATH 240	Linear Algebra and Differential Equations	3
MATH 301	Differential Equations I	3
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>15</b>
<b>Third Year</b>		
<b>Fall</b>		
Free Elective		3
PHYS 312	Modern Physics 1	3
PHYS 385	Computational Physics	3
Select one of the following:		3
COMM 200	Civil Discourse: Theory & Practice	
PHIL 110	Ethics and Civil Discourse	
POLS 235	Civil Discourse and Democracy	

Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
<b>Hours</b>		<b>15</b>
<b>Spring</b>		
PHYS 315	Dynamics	3
PHYS 375	Thermal Physics	3
PHYS 381	Advanced Physics Laboratory	2
MATH 315	Numerical Mathematics	3
CPSC 374	Algorithms and Data Structures	3
PHYS 412	Modern Physics 2	1
<b>Hours</b>		<b>15</b>
<b>Fourth Year</b>		
<b>Fall</b>		
PHYS 490	Independent Study (Computational Physics Research)	1
PHYS 331	Mathematical Methods of Physics	3
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Physics Elective		3
Free Elective		3
<b>Hours</b>		<b>16</b>
<b>Spring</b>		
PHYS 410	Electricity and Magnetism	3
PHYS 480	Quantum	3
PHYS 490	Independent Study (Computational Physics Research)	1
Rock Studies 2 Requirement ( <a href="https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/">https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/</a> )		3
Technical Elective		3
Free Elective		3
<b>Hours</b>		<b>16</b>
<b>Total Hours**</b>		<b>120</b>

<sup>1</sup> Course offered in multiple subjects; cannot take course in first major subject.

<sup>2</sup> Work with your Academic Adviser to declare a Thematic Thread by the end of your fall semester in your second year.

\* Students are encouraged to take ESAP 101 as a Free Elective.

\*\* This document is meant to serve as a guide. Some planners may show more than 120 credits because faculty have created flexibility in choosing courses. However, only 120 credits are required to obtain a degree. Please consult with your academic adviser and refer to your curriculum guide prior to registering for courses. This plan should be reviewed, and verified, by you and your academic adviser at least once each academic year.

Major Code: 6164

Concentration: COPH

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