PHYSICS MAJOR WITH A CONCENTRATION IN ENGINEERING PHYSICS

Acceptance to Major Requirements

Course Requirements:

Code	Title	Hours
PHYS 191	Foundations of Physics I	4
PHYS 200	Foundations of Physics II	4
PHYS 211	Foundations of Physics III	4
PHYS 332	Intermediate Physics Laboratory	1
MATH 120	Calculus II	4
MATH 220	Calculus III	4

Minimum Grade and/or GPA for required courses: 2.00 GPA

Minimum Cumulative GPA: 2.00

Code	Title	Hours
PHYS 155	Introduction to Engineering	2
PHYS 191	Foundations of Physics I	4
PHYS 200	Foundations of Physics II	4
PHYS 211	Foundations of Physics III	4
PHYS 255	CAD Prototyping & Testing	2
PHYS 320	Modern Physics	4
PHYS 217	Digital Electronics	2
PHYS 338	Analog Electronics for Scientists	2
PHYS 339	Physical Mechanics	4
PHYS 343	Thermodynamics	2
PHYS 355	MATLAB for Physical Applications	2
PHYS 374	Senior Engineering Design Project	1
or PHYS 372	Senior Research	
PHYS 373	Senior Thesis	1
PHYS 332	Intermediate Physics Laboratory (two semesters) [1]	2
PHYS 370	Advanced Physics Laboratory (two semesters) [2]	2
PHYS (300-Level) additional electives		4
MATH 119	Calculus I	4
MATH 120	Calculus II	4
MATH 220	Calculus III	4
MATH 306	Differential Equations and Linear Algebra	4
CHEM 125	Introduction to Chemical Structure and Properties [3]	4
CHEM 201	Purification and Separation Lab I	1
PHYS XXX Comprehensive Exam [4]		
Total Hours		**63**

[1] Take both semesters Sophomore year

[2] Take both semesters Junior year

[3] CHEM 123 General Chemistry 1, which is no longer offered at CSB/SJU, but some students transfer in, is an acceptable substitution for CHEM 125/201.

[4] The Major Field Test in Physics is to be taken in the spring semester of the senior year

Additional Requirements:

General Education Requirements:

All undergraduate students must complete the requirements of the Integrations Curriculum (IC) which is designed to ensure all of our students receive a liberal arts education. Please review details of the Integrations Curriculum (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/) requirements here (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/).

Graduation Requirements:

In addition to the Integrations Curriculum, all undergraduate students must meet the following minimum degree requirements to earn their degree from CSB and SJU.

Credits: 124 total credits, 40 of which must be from upper division coursework

GPA: 2.0 or higher*

Residency: At least 24 of your last 32 credits must be completed at CSB and SJU

Please visit Graduation (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/graduation/) under the Academic Policies and Regulations (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/) portion of the catalog for additional details regarding degree requirements.

** Cumulative GPA as well as major(s)/minor(s) GPA. Please note some majors/minors may require a higher GPA to earn their degree.*

Suggested Plan of Study

Course	Title	Hours
First Year		
Fall		
MATH 119	Calculus I	4
PHYS 191	Foundations of Physics I	4
INTG 105	The Lookout	1
INTG 100	Learning Foundations	4
Language 111		4
	Hours	**17**
Spring		
MATH 120	Calculus II	4
PHYS 155	Introduction to Engineering	2
PHYS 200	Foundations of Physics II	4
Language 112		4
Integrations Requirement (CI)		4
	Hours	**18**
Second Year		
Fall		
THEO 100	Theological Explorations	4
MATH 220	Calculus III	4
PHYS 211	Foundations of Physics III	4
PHYS 255	CAD Prototyping & Testing	2
PHYS 332	Intermediate Physics Laboratory	1
	Hours	**15**
Spring		
MATH 306	Differential Equations and Linear Algebra	4

PHYS 320	Modern Physics	4
PHYS 332	Intermediate Physics Laboratory	1
Language 211		4
Integrations Requirment (CS)		4
	Hours	**17**
Third Year		
Fall		
CHEM 125	Introduction to Chemical Structure and Properties	4
CHEM 201	Purification and Separation Lab I	1
PHYS 339	Physical Mechanics	4
PHYS 370	Advanced Physics Laboratory	1
PHYS elective		2
Integrations Requirement		4
	Hours	**16**
Spring		
PHYS 355	MATLAB for Physical Applications	2
PHYS 370	Advanced Physics Laboratory	1
PHYS 217	Digital Electronics (odd years)	2
PHYS 338	Analog Electronics for Scientists (odd years)	2
Integrations Requirement		4
Integrations Requirement or Elective		4
	Hours	**15**
Fourth Year		
Fall		
PHYS 374	Senior Engineering Design Project	1
Theological Integrations		4
PHYS elective		2
Integrations Requirement		4
Integrations Requirement or Elective		4
	Hours	**15**
Spring		
INTG 300	Learning Integrations	4
PHYS 343	Thermodynamics	2
PHYS 355	MATLAB for Physical Applications	2
PHYS 373	Senior Thesis	1
Free electives		8
	Hours	**17**
	Total Hours	**130**

Integrations Curriculum Requirements

The standard requirements for the Physics major will fulfill the following integrations requirements: AS, NW, QR, WR, EX. Depending on elective course selection, it can also fulfill 1 or 2 Themes and other requirements. Please see below for a list of integrations requirements you will need to satisfy via elective courses.

Integrations Designations

See Integrations Curriculum (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/) under Academic Policies and Regulations for further description of the general education requirements.

Foundational Courses

Code	Integrations Requirement
CI	Cultural/Social Difference - Identity
LF	Learning Foundations (INTG 100)
	College Success (INTG 105)
TE	Theological Exploration (THEO 100)

Ways of Thinking

Code	Integrations Requirement
AE	Artistic Expression
AS	Abstract Structures
HE	Human Experience
NW	Natural World
SW	Social World

Upper-level Courses

Column1	Column2
CS	Cultural/Social Differences - Systems
LI	Learning Integrations
TI	Theological Integrations

Thematic Coursework

To complete the themes course requirement: students will successfully complete 3 courses in the same theme (Truth, Justice, or Movement), in at least 2 different departments, at least 1 of which is a thematic focus course (TF/JF/MF). The other two can be Focus or Encounter courses. Encounter courses can be identified by: T1/T3, J1/J3, M1/M3.

Code	Integrations Requirement
J1, J3, JF, or M1, M3, MF, or T1, T3, TF	Thematic Encounter or Focus Course
J1, J3, JF, or M1, M3, MF, or T1, T3, TF	Thematic Encounter or Focus Course
JF, MF, or TF	Thematic Focus Course

Global Language

Code	Integrations Requirement
111	Beginning I Course
112	Beginning II Course
211	Intermediate Course

For more details on meeting this requirement, please see the Integrations Curriculum tab on Global Language Requirements (https://catalog.csbsju.edu/catalog/academic-programs-policies-regulations/integrations-curriculum/#globallanguageproficiencydetailstext).

Engagement and Designation Requirements

Code	Integrations Requirement
AR	Artistic Engagement
BN	Benedictine Raven*
EX	Experiential Engagement
GL	Global Engagement**
QR	Quantitative Reasoning
WR	Writing Designation

* BN and WR waived for students entering during Academic Year 2020 and 2021.

** GL waived for students entering during Academic Years 2020-2025