

The University of South Dakota
Major Credit Hour count: 66
Major: Physics- Applied Physics B.S.

[2021-2022 Academic Catalog]

First Year - 1st Semester

ENGL 101 Composition I
PHYS 211/211L University Physics & Lab
MATH 123 Calculus*
CMST 101 Fundamentals of Speech

SGR/Major Requirement	Cr Hrs
SGR 1	3
SGR 6+M	5
SGR 5+BS+M	5
SGR 2	3
Semester Credit Hours:	16

Second Year - 1st Semester

PHYS 431 Intro to Modern Physics
MATH 225 Calculus III
Fine Arts
Advanced Composition
CHEM 112/L General Chemistry I/Lab

SGR/Major Requirement	Cr Hrs
Major	3
Major	4
SGR 4	3
SGR 1	3
BS + M	4
Semester Credit Hours:	17

Third Year - 1st Semester

PHYS 451 Classical Mechanics
CSC 155/155L Computer Science I
Humanities
Electives

SGR/Major Requirement	Cr Hrs
Major	4
Major	4
SGR 4	3
	3
Semester Credit Hours:	14

Fourth Year - 1st Semester

PHYS 441 Thermodynamics
PHYS 454/454L Semiconductor Materials:
Fundamentals and Fabrication/Lab or PHYS
456/456L Radiation Detection/Lab
Electives

SGR/Major Requirement	Cr Hrs
Major	2
Specialization	4
	7
Semester Credit Hours:	13

First Year - 2nd Semester

ENGL 210 Introduction to Literature
PHYS 213/213L Univ. Physics II & Lab
MATH 125 Calculus II
Social Science

SGR/Major Requirement	Cr Hrs
BS	3
SGR 6+M	5
Major	5
SGR 3	3
Semester Credit Hours:	16

Second Year - 2nd Semester

PHYS 332 Experimental Modern Phys
MATH 321 Differential Equations
CHEM 114/114L General Chemistry II/Lab
Social Science
Additional Social Science/Humanities

SGR/Major Requirement	Cr Hrs
Major	2
Major	3
BS + M	4
SGR 3	3
BS	3
Semester Credit Hours:	15

Third Year - 2nd Semester

PHYS 471 Quantum Mechanics
PHYS 439 Solid State Physics
Additional Social Science/Humanities
Electives

SGR/Major Requirement	Cr Hrs
Major	4
Specialization	3
BS	3
	6
Semester Credit Hours:	16

Fourth Year - 2nd Semester

PHYS 421 Electromagnetism

MATH elective for minor OR credit by
examination
Electives

SGR/Major Requirement	Cr Hrs
Major	4
Major	1
	8
Semester Credit Hours:	13

Total Major Requirements 120

Notes: *Students who have not taken a calculus class prior to enrollment in college may wish to delay University Physics until the sophomore year. Students pursuing this option should enroll in chemistry during the first year, and move PHYS 431 & 332 to the junior year. Students who complete the Physics major will have fulfilled the requirements for the Mathematics Minor and are not required to complete an additional minor, although they are welcome to add another minor.