

Physics BS Course Requirements Fall 2024 Catalog

Ideal for a student planning to pursue graduate work in physics or a closely related field. With a strong emphasis on technical physics, the BS degree requires ten foundational physics courses, two methods courses, two additional physics or allied elective courses, five math courses, and one course in computer programming. For more information please see www.stthomas.edu/physics

Major Courses:

PHYS 211	Introduction to Classical Physics I	(4 credits)
PHYS 212	Introduction to Classical Physics II	(4 credits)
PHYS 215	Foundations of Modern Physics	(4 credits)
PHYS 225	Applications of Modern Physics	(4 credits)
PHYS 331	Theoretical Mechanics	(4 credits)
PHYS 341	Electricity and Magnetism	(4 credits)
PHYS 347	Optics	(4 credits)
PHYS 354	Astrophysics	(4 credits)
PHYS 410	Statistical Mech. & Thermodynamics	(4 credits)
PHYS 431	Quantum Mechanics	(4 credits)

Plus

8 credits from the following: (8 credits)

PHYS 323	Methods of Experimental Physics
PHYS 325	Methods of Computational Physics
ENGR 481	Engineering Design Clinic II

Plus

4 additional Physics or Allied elective credits (4 credits)

Required Allied Courses:

MATH 113	Calculus I	(4 credits)
MATH 114	Calculus II	(4 credits)
MATH 200	Multi-Variable Calculus	(4 credits)
MATH 210	Intro to Differential Equations	(4 credits)
MATH 240	Linear Algebra	(4 credits)
CISC 130	Intro to Programming in Sciences	(4 credits)
or		
CISC 131	Intro to Programming	

Physics Elective Courses:

PHYS 104	Astronomy	(4 credits)
Any PHYS course numbered 150 and above including:		
PHYS 323	Methods of Experimental Physics	(4 credits)
PHYS 325	Methods of Computational Physics	(4 credits)
PHYS 491	Individual Research	(2 or 4 credits)

Allied Elective Courses: *

CHEM 320	Instrumental Analysis	(4 credits)
CHEM 331	Chemical Thermodynamics	(4 credits)
CHEM 332	Quantum Chemistry	(4 credits)
Engineering courses at or above ENGR 200.		
Mathematics courses at or above MATH 300.		
Computer and Information Sciences courses at or above CISC 230.		

* Not all possible Allied Elective courses are listed. Check with the Physics Department Chair about specific courses.

Major and
Physics/Allied Elective
Courses:

52 credits

Required Allied Courses:

24 credits

Core Curriculum and
Free Elective Courses:

53 credits

129 credits

Physics
BS



Degree Planning Guide

These suggested schedules are great planning resources, but it is critical that you discuss your specific academic plans with a physics advisor. If you do not have a physics advisor, please contact the Physics Departmental Chair to discuss your options.

Physics BS (recommended courses starting with MATH 114)

Freshman (<28 credits)	Sophomore (28-59 credits)	Junior (60-91 credits)	Senior (92+ credits)
Semester 1 PHYS 211 MATH 114	Semester 1 PHYS 215 MATH 210	Semester 1 PHYS 331 (even fall) PHYS 341 PHYS 347** PHYS 354 (odd fall) PHYS or Allied elective **if not taking PHYS 354	Semester 1 PHYS 331 (even fall) PHYS 341 PHYS 347** PHYS 354 (odd fall) PHYS or Allied elective
Semester 2 PHYS 212 CISC 131 MATH 200	Semester 2 PHYS 225 MATH 240	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring)	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring)

Physics BS (recommended courses starting with MATH 113)

Freshman (<28 credits)	Sophomore (28-59 credits)	Junior (60-91 credits)	Senior (92+ credits)
Semester 1 MATH 113 CISC 131	Semester 1 PHYS 212 MATH 200 MATH 210	Semester 1 PHYS 215 PHYS 331 (even fall) PHYS 341 PHYS 347 or PHYS 354	Semester 1 PHYS 331 (even fall) PHYS 341 PHYS 347 or PHYS 354 PHYS or Allied elective
Semester 2 PHYS 211 MATH 114 CISC 131* *if NOT taken semester 1	Semester 2 PHYS 225 MATH 240	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring)	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring) PHYS or Allied elective

Physics BS (recommended courses starting with MATH 108)

Freshman (<28 credits)	Sophomore (28-59 credits)	Junior (60-91 credits)	Senior (92+ credits)
Semester 1 MATH 108 CISC 131	Semester 1 PHYS 212 MATH 200 MATH 210	Semester 1 PHYS 215 PHYS 331 (even fall) PHYS 341 PHYS 347 or PHYS 354	Semester 1 PHYS 331 (even fall) PHYS 341 PHYS or Allied elective PHYS 347 or PHYS 354
Semester 2 MATH 109 CISC 131* *if NOT taken semester 1	Semester 2 PHYS 225 MATH 240	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring)	Semester 2 PHYS 323* (even spring) PHYS 410 (even spring) PHYS 325* (odd spring) PHYS 431 (odd spring) PHYS or Allied elective
Summer I PHYS 211	Summer II MATH 114		

* 8 credits are required from: PHYS 323, PHYS 325 and ENGR 481. Students may take PHYS 323/325 in the Spring of their Sophomore year after consultation with their advisor.

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