

BACHELOR OF SCIENCE IN PHYSICS: CONCENTRATION IN PHYSICS FOR TEACHING – PHYS ASSOCIATE DEGREE FOR TRANSFER (ADT) ROADMAP

This is a sample pathway for students who transfer to San Francisco State University in the current Bulletin year with an AS-T in Physics. Twenty-four units in the major (MATH 226, MATH 227, MATH 228, PHYS 220, PHYS 222, PHYS 230, PHYS 232, PHYS 240, and PHYS 242) and all lower-division GE requirements have been satisfied. Additional units in the major may have been satisfied. Check with a major advisor about the most appropriate course sequence. **Degree completion guaranteed in 60 units; see the Associate Degree for Transfer (ADT) section for more information (<http://bulletin.sfsu.edu/undergraduate-admissions/transfer-students/>).**

To Do at SF State:

Enough total units to reach 120 minimum for graduation; 30 units minimum at the upper-division level; to include the following:

University-Wide Requirements: 9-15 Units

- American Institutions (0-6 units): US History, US Government, California State and Local Government requirements if not taken before transfer
- Upper-division GE areas B, C, and D (9 units): Courses required for the major may double-count if approved for UD GE.
- Students entering the major with the AS-T in Physics are not required to fulfill SF State Studies or Complementary Studies requirements.

Physics B.S. (Teaching) Major: 37-40 Units

MATH 226, MATH 227, MATH 228, PHYS 220, PHYS 222, PHYS 230, PHYS 232, PHYS 240, and PHYS 242 met in transfer.

- Prerequisites (3 units if MATH 245 equivalent not completed before transfer; see note 1 above)
- Upper-division Requirements (25 units)
- Electives (12 units): May be lower- or upper-division. Selected in consultation with a department advisor; courses should prepare students to teach a second subject in addition to physics, or general science at the 9th-grade level.

University Electives: 6 or More Units

Depends on course choices made at the community college, how transferred units are applied to the requirements above, and course choices at SF State. Some courses may meet more than one requirement, e.g., both in UD GE and the major.

Course	Title	Units	MATH 245	Elementary Differential Equations and Linear Algebra
First Semester				
Select One (UD-C, USH, CSLG):		3		
HIST 470	The U.S. Constitution to 1896 (AERM, SJ)		MATH 376	Ordinary Differential Equations I
HIST 471	The U.S. Constitution Since 1896 (AERM, SJ)		GE Area UD-D: Upper-Division Social Sciences	3
			University Elective - Take Two	5
Select One:		3		Units
University Elective (if selecting MATH 245)				11
MATH 325	Linear Algebra (if selecting MATH 376)		Third Semester	
GE Area UD-B: Upper-Division Physical and/or Life Sciences		3	PHYS 320 & PHYS 321	Modern Physics I and Modern Physics Laboratory (Major Upper-Division Core)
University Elective		3		5
	Units	12	PHYS 330	Analytical Mechanics I (Major Upper-Division Core)
Second Semester				3
Select One (Major Lower-Division Prerequisite):		3		

PHYS 385	Introduction to Theoretical Physics I (Major Upper-Division Core)	3
Units		11
Fourth Semester		
PHYS 360	Electricity and Magnetism I (Major Upper-Division Core)	3
PHYS 370	Thermodynamics and Statistical Mechanics (Major Upper-Division Core)	3
Major Elective (12 Units Total) - Take Two ¹		6
Units		12
Fifth Semester		
PHYS 491GW	Advanced Laboratory Techniques I - GVAR (Major Upper-Division Core)	3
PHYS 695	Culminating Experience in Physics (Major Upper-Division Core)	1
SCI 652	Major Upper-Division Core	
Major Elective (12 Units Total) - Take Two ¹		6
Units		10
Total Units		56

¹ Selected in consultation with a departmental advisor to prepare to teach a second subject in addition to physics, or general science at the 9th grade level. Electives may be lower-division or upper-division courses. If MATH 325 was taken, those units can be applied to this requirement.