

BACHELOR OF ARTS IN CHEMISTRY – CHEM 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 Chemistry. Thirty-four units in the major (CHEM 115/CHEM 215/CHEM 216, CHEM 233/CHEM 234, CHEM 335/CHEM 336, MATH 226/MATH 227, required PHYS sequence) and 33 units of lower-division GE have been satisfied. Check with a major advisor about the most appropriate course sequence for you. **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: 15-21 Units

- American Institutions (0-6 units): US History, US Government, California State and Local Government requirements if not taken before transfer.
- Lower-division GE (6 units) – Area C (3 units in any subarea) and Area D (3 units). D2 courses satisfy US History; D3 courses satisfy US/CA Government requirements.
- 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 this major with the AS-T in Chemistry are not required to fulfill SF State Studies requirements.
- Complementary Studies is met in major with required PHYS and MATH courses.

Chemistry B.A.: 20-23 Units

Completed: CHEM 115/CHEM 215/CHEM 216, CHEM 233/CHEM 234, CHEM 335/CHEM 336, MATH 226/MATH 227, required PHYS sequence.

- Major Upper-Division Requirements/GWAR (17-20 units)
- Major Upper-Division Electives (3 units) - Consult with an advisor regarding the selection of elective courses and check course co- and prerequisites before enrolling.

University Electives: 19 or More Units

Depending 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., UD GE and the major. Upper-division electives are recommended to meet the minimum 40-unit requirement.

Course	Title	Units
First Semester		
CHEM 321 & CHEM 322	Quantitative Chemical Analysis and Quantitative Chemical Analysis Laboratory (Major Upper-Division)	5
CHEM 390GW	Contemporary Chemistry and Biochemistry Research - GWAR (Major Upper-Division)	3
US History (http://bulletin.sfsu.edu/undergraduate-education/american-institutions/#USHaGR) or University Elective if US History complete		3
University Elective		4
		Units
		15
Second Semester		
CHEM 300	Physical Chemistry for Life Sciences I (Major Upper-Division)	3
Select One (Major Upper-Division):		3
CHEM 340	Biochemistry I	
CHEM 349	General Biochemistry	
GE Area C		3

GE Area D		3
GE Area UD-B: Upper-Division Physical and/or Life Sciences		3
	Units	15
Third Semester		
CHEM 325	Inorganic Chemistry (Major Upper-Division)	3
GE Area UD-C: Upper-Division Arts and/or Humanities		3
University Elective - Take Three		9
	Units	15
Fourth Semester		
Upper Division Electives ¹		3
GE Area UD-D: Upper-Division Social Sciences		3
U.S. and California Government (http://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg) or University Elective if US/CA Government met before transfer		3
University Elective – Take Two		6
	Units	15
	Total Units	60

1

Upper-Division ElectivesCHEM 343 Biochemistry I Laboratory (3 units)²

CHEM 370 Computer Applications in Chemistry and Biochemistry (3 units)

CHEM 420 Environmental Analysis (3 units)

CHEM 422 Instrumental Analysis (4 units)

CHEM 426 Advanced Inorganic Chemistry Laboratory (2 units)

CHEM 451 Experimental Physical Chemistry Laboratory (2 units)

CHEM 685 Projects in the Teaching of Chemistry and Biochemistry (1 unit)³CHEM 686 Experiences in Teaching Chemistry and Biochemistry (1 unit)³CHEM 699 Independent Study (1-6 units)⁴

Select One:

CSC 306 An Interdisciplinary Approach to Computer Programming (3 units)

CSC 508 Machine Learning and Data Science for Personalized Medicine (3 units)

CSC 509 Data Science and Machine Learning for Medical Image Analysis (3 units)

2

For students who pursue a double major in the BA Chemistry and BS Biochemistry programs, CHEM 343 cannot be used to meet the elective requirement for the BA Chemistry. Students must take a different approved elective list to meet this requirement.

3

May be counted only once as an elective.

4

By petition only.