

B.S. CHEMISTRY DEGREE PROGRAM

Suggested Course Sequence

- The B.S. Chemistry degree program is certified by the American Chemical Society (ACS) and provides outstanding preparation for a career in the chemical industry and preparation for post-graduate programs. Students are urged to consult with an advisor regarding their educational and career plans.
- Courses used in the major program must be completed with a minimum grade point average of 2.0. All courses used in the major program must be completed with letter grades (CR/NC not allowed) and courses used for CHEM prerequisites must be completed with a C or better.
- Students will be notified by email the semesters they are required to meet with a *Chem/Biochem advisor* before registration.
- Students are urged to check their Degree Progress Report (DPR) to ensure they are meeting General Education requirements. For difficult GE situations students are encouraged to meet with a *General Education (GE) advisor* (Advising Center, ADM 211, 415–338–2103; advising@sfsu.edu).
- Students should refer to the *SFSU Bulletin* (<http://bulletin.sfsu.edu>) for detailed information on *University policies and procedures, GE requirements, requirements for the major, and course descriptions and prerequisites.*

Freshman Year - Fall Semester		Units
CHEM 115	General Chemistry I	5
MATH 226	Calculus I	4

Freshman Year - Spring Semester		Units
CHEM 215	General Chemistry II	3
CHEM 216	General Chemistry II Lab	2
PHYS 220	Physics with Calculus I	3
PHYS 222	Physics with Calculus I Lab	1
MATH 227	Calculus II	4

Sophomore Year - Fall Semester		Units
CHEM 233	Organic Chemistry I	3
CHEM 234	Organic Chemistry I Lab	2
PHYS 230	Physics with Calculus II	3
PHYS 232	Physics with Calculus I Lab	1

Sophomore Year - Spring Semester		Units
CHEM 335	Organic Chemistry II	3
CHEM 336 ¹	Organic Chemistry II Lab	2
CHEM 321	Quantitative Analysis	3
CHEM 322	Quantitative Analysis Lab	2

Junior Year - Fall Semester		Units
CHEM 251 ^{2,a}	Math & Physics for Physical Chemistry	3
CHEM 351 ^a	Physical Chemistry I	3
CHEM 325	Inorganic Chemistry	3

Junior Year - Spring Semester		Units
CHEM 390GW	Contemporary Chem/Biochem Research	3
CHEM 353 ^b	Physical Chemistry I	3
CHEM 426 ^{3,b}	Inorganic Chemistry Lab	2

Senior Year - Fall Semester		Units
CHEM 340	Biochemistry I	3
CHEM 451 ^{3,a}	Physical Chemistry Lab	2
Upper Division Chemistry Elective		3

Senior Year - Spring Semester		Units
Upper Division Chemistry Elective		3
Upper Division Chemistry Elective		3

Upper Division Chemistry Electives

- Must complete at least 9 units of upper division chemistry electives selected from the list below. Courses taken at community colleges cannot be used to meet electives in the major.
- Note that some elective courses are offered only once per year and others less frequently.
- Check course co- and pre-requisites *before* choosing/enrolling in these elective classes.
- May substitute graduate courses in chemistry or appropriate courses in biology, physics, geosciences, and computer science; **prior approval of an advisor is required.**

Chemistry Electives	Units
CHEM 327 Practical GC and HPLC	4
CHEM 341 Biochemistry II	3
CHEM 343 Biochemistry Lab	3
CHEM 370 Computer Applications in Chemistry & Biochemistry	3
CHEM 420 Environmental Analysis	3
CHEM 422 Instrumental Analysis	4
CHEM 433 Advanced Organic Chemistry	3
CHEM 443 Biophysical Chemistry Lab	2
CHEM 470 Research	3
CHEM 645 Research Trends in Chemistry & Biochemistry	3
CHEM 680 Chemical Oceanography	3
CHEM 699 ⁴ Independent Study	3

¹ CHEM 338 may be substituted for CHEM 336.

² PHYS 240 and MATH 228 may be substituted for CHEM 251.

³ CHEM 343 may be substituted for either CHEM 426 or 451 with **prior approval of an advisor**; CHEM 699 (3 units of research in one or more of these three disciplinary areas) may also be substituted with advisor approval.

⁴ CHEM 699 requires add permit from research advisor, must be 3 units, and requires a written report and a public poster presentation.

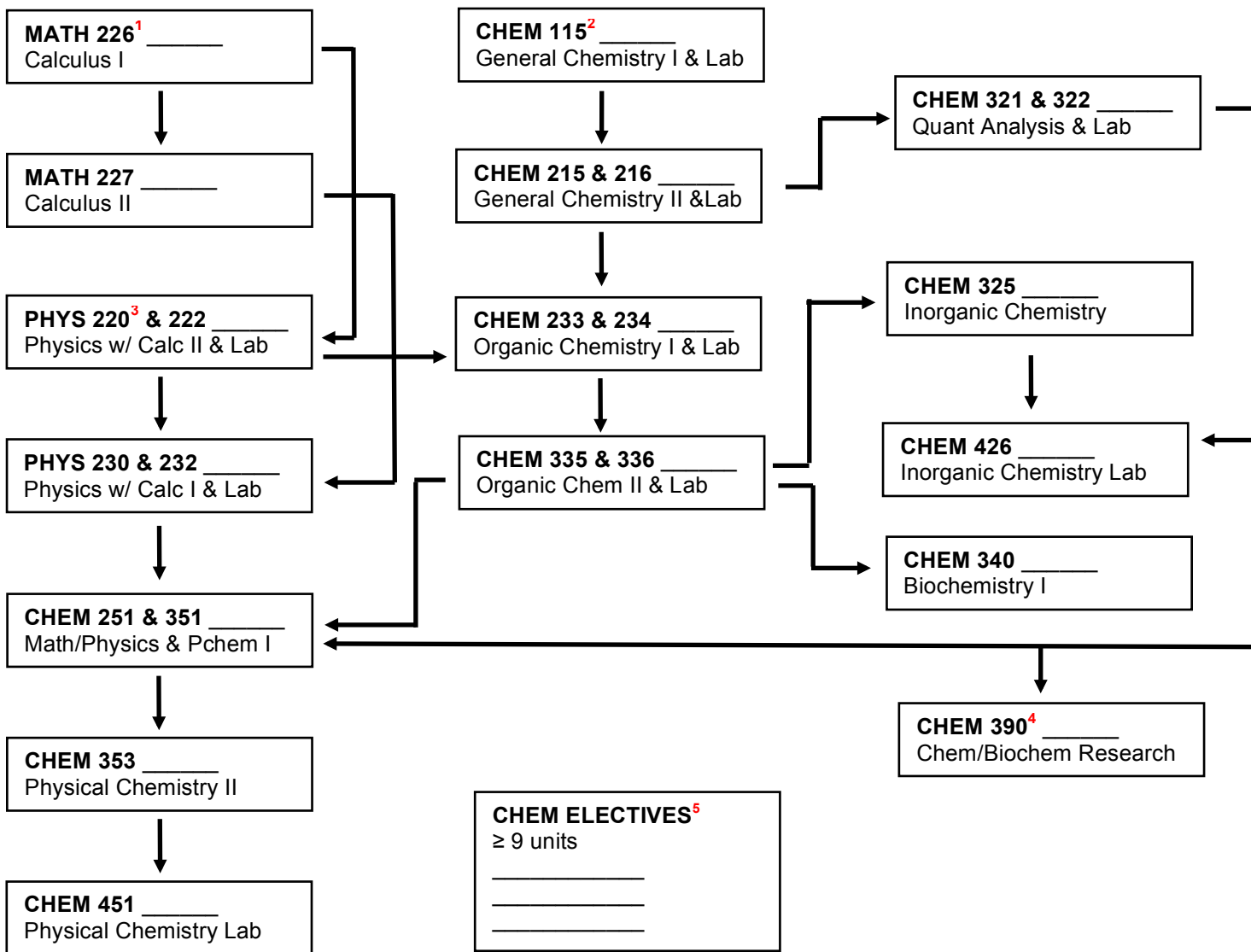
^a Class is offered only in the Fall.

^b Class is offered only in the Spring. CHEM 353 can be taken before CHEM 351 if CHEM 251 and CHEM 321 are completed with a C or better.

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Flowchart for Degree Program

- Students should consult course descriptions in the current SFSU Bulletin to confirm prerequisite course(s) and minimum grade requirements prior to registering for the course.
- Solid arrows indicate prerequisite courses (courses that must be completed before enrolling).
- Dashed arrows indicate co-requisite courses (courses that must be completed before enrolling or at same time).
- Use this sheet to track progress towards graduation.



¹ MATH 226 requires acceptable score on calculus readiness test and either C or better in MATH 199 or B or better in pre-calculus class.

² CHEM 115 requires C or better grade in CHEM 100 or satisfactory score on chemistry placement exam (see Department website for details: chemistry.sfsu.edu), and 50 or above on ELM or C or better in MATH/ESM 70.

³ PHYS 220 requires high school physics or equivalent and a C in MATH 226.

⁴ CHEM 390 requires *either* CHEM 321 or CHEM 335 as a prerequisite.

⁵ Most CHEM electives require CHEM 321/322 and/or CHEM 335.