

## B.A. CHEMISTRY DEGREE PROGRAM

### Suggested Course Sequence

- The BA Chemistry degree program requires the fewest units of our Department's undergraduate degree programs. Many students take advantage of this to customize their education to prepare for careers in teaching, criminology, forensics, biotech, clinical, and environmental sciences, etc. 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
PHYS 111 <sup>1</sup>	General Physics I	3
PHYS 112 <sup>1</sup>	General Physics I Lab	1

Freshman Year - Spring Semester		Units
CHEM 215	General Chemistry II	3
CHEM 216	General Chemistry II Lab	2
PHYS 121 <sup>1</sup>	General Physics II	3
PHYS 122 <sup>1</sup>	General Physics II Lab	1

Sophomore Year - Fall Semester		Units
CHEM 233	Organic Chemistry I	3
CHEM 234	Organic Chemistry I Lab	2
MATH 226	Calculus I	4

Sophomore Year - Spring Semester		Units
CHEM 335	Organic Chemistry II	3
CHEM 336	Organic Chemistry II Lab	2
MATH 227	Calculus II	4

Junior Year - Fall Semester		Units
CHEM 321	Quantitative Analysis	3
CHEM 322	Quantitative Analysis Lab	2
CHEM 325	Inorganic Chemistry	3

Junior Year - Spring Semester		Units
CHEM 300 <sup>2</sup>	General Physical Chemistry I	3
CHEM 349 <sup>3</sup>	General Biochemistry	3

Senior Year - Fall Semester		Units
CHEM 390GW	Contemporary Chem/Biochem Research	3

Senior Year - Spring Semester		Units
	Upper Division Chemistry Elective	3

#### Upper Division Chemistry Electives (25 units)

- Must complete at least 3 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.
- **Students will have additional upper division free electives** to complete to satisfy university degree requirements (40 units).

Chemistry Electives	Units
CHEM 327 Practical GC and HPLC	4
CHEM 343 <sup>4</sup> Biochemistry I Lab	3
CHEM 370 Computer Applications in Chemistry & Biochemistry	3
CHEM 420 Environmental Analysis	3
CHEM 422 Instrumental Analysis	4
CHEM 426 Inorganic Chemistry Lab	2
CHEM 451 Experimental Physical Chemistry	2
CHEM 470 Research (on biochemistry-related topic)	3
CHEM 640 Special Topics in Biochemistry	2-3
CHEM 699 <sup>5</sup> Independent Study	3

<sup>1</sup> PHYS 220/222 and either 230/232 or 240/242 may be substituted for PHYS 111/112 and 121/122.

<sup>2</sup> CHEM 351 may be substituted for CHEM 300 upon advisement.

<sup>3</sup> CHEM 340 may be substituted for CHEM 349.

<sup>4</sup> CHEM 343 can not be double counted as the lab elective for the BA Chem degree for students double majoring with a BS Biochem degree.

<sup>5</sup> CHEM 699 requires add permit from research advisor, must be 3 units, and requires a written report and a public poster presentation.

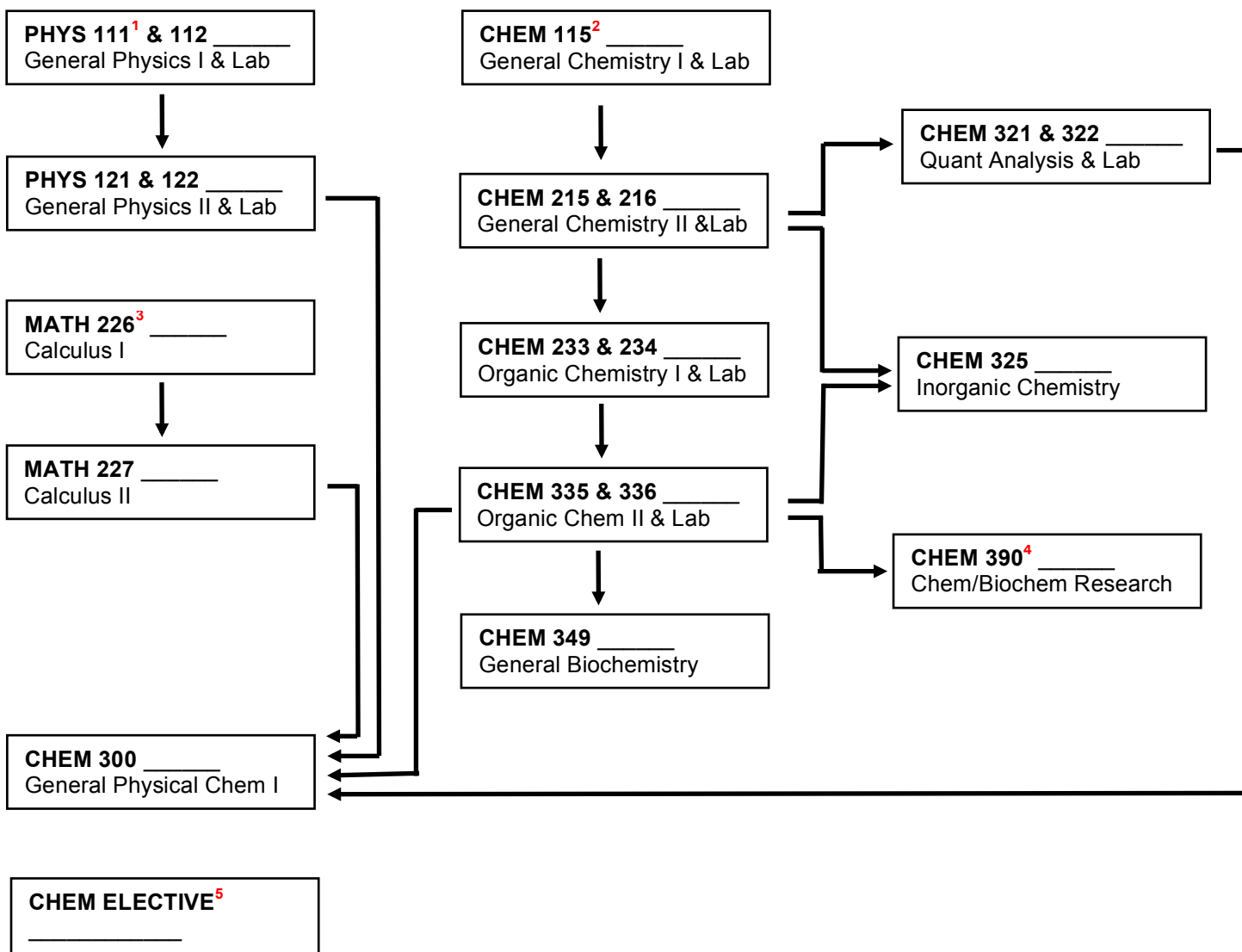
#### Suggestions for elective courses for specific career tracks

K-12 teaching	ASTR 115/116, GEOL 110, GEOL 405 BIO 230/240
Pre-pharmacy:	BIOL 230/240, BIOL 401/402, BIOL 350 or 355, BIOL 612/613, MATH 124
Pre-medicine:	BIOL 230/240, BIOL 350, BIOL 355, BIOL 401, BIOL 612/613
Forensics:	BIOL 230/240, BIOL 355, BIOL 357, BIOL 358, CHEM 327 or CHEM 420, CHEM 422, MATH 124

## B.A. CHEMISTRY DEGREE PROGRAM

### 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.



<sup>1</sup> PHYS 111 requires either a C- or better in MATH 199 or completion of an online mini-course.

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

<sup>3</sup> 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.

<sup>4</sup> CHEM 390 requires *either* CHEM 321 or CHEM 335 as a prerequisite.

<sup>5</sup> Most electives require CHEM 335 and/or CHEM 321/322 as a prerequisite.