

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.
- Chemistry/biochemistry advisors, contact info, and other important advising information are available on the Dept website (http://www.chemistry.sfsu.edu/advising_undergrad/0layout.php).
- General Education (GE) advising is available through the SFSU Advising Center (ADM 211, 415-338-2103; advising@sfsu.edu) or the COSE Student Success Center (SCI 381, 415-338-2816, cssc@sfsu.edu)
- Refer to the SFSU Bulletin for detailed information on University policies and procedures, GE requirements, requirements for the major, and course descriptions and prerequisites (<http://bulletin.sfsu.edu>).

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

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

| 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 | Math & Physics for Physical Chemistry | 3 |
| CHEM 351 | Physical Chemistry I | 3 |
| CHEM 325 | Inorganic Chemistry | 3 |

| Junior Year - Spring Semester | | Units |
|--------------------------------------|------------------------------------|--------------|
| CHEM 390GW ³ | Contemporary Chem/Biochem Research | 3 |
| CHEM 353 | Physical Chemistry I | 3 |
| CHEM 426 ⁴ | Inorganic Chemistry Lab | 2 |

| Senior Year - Fall Semester | | Units |
|------------------------------------|------------------------|--------------|
| CHEM 340 | Biochemistry I | 3 |
| CHEM 451 ⁴ | Physical Chemistry Lab | 2 |
| Upper Division Chemistry Elective | | 3 |

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

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

| 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 645 Research Trends in Chemistry & Biochemistry | 3 |
| CHEM 680 Chemical Oceanography | 3 |
| CHEM 699 ⁵ Independent Study | 3 |

¹ CHEM 338 may be substituted for CHEM 336.

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

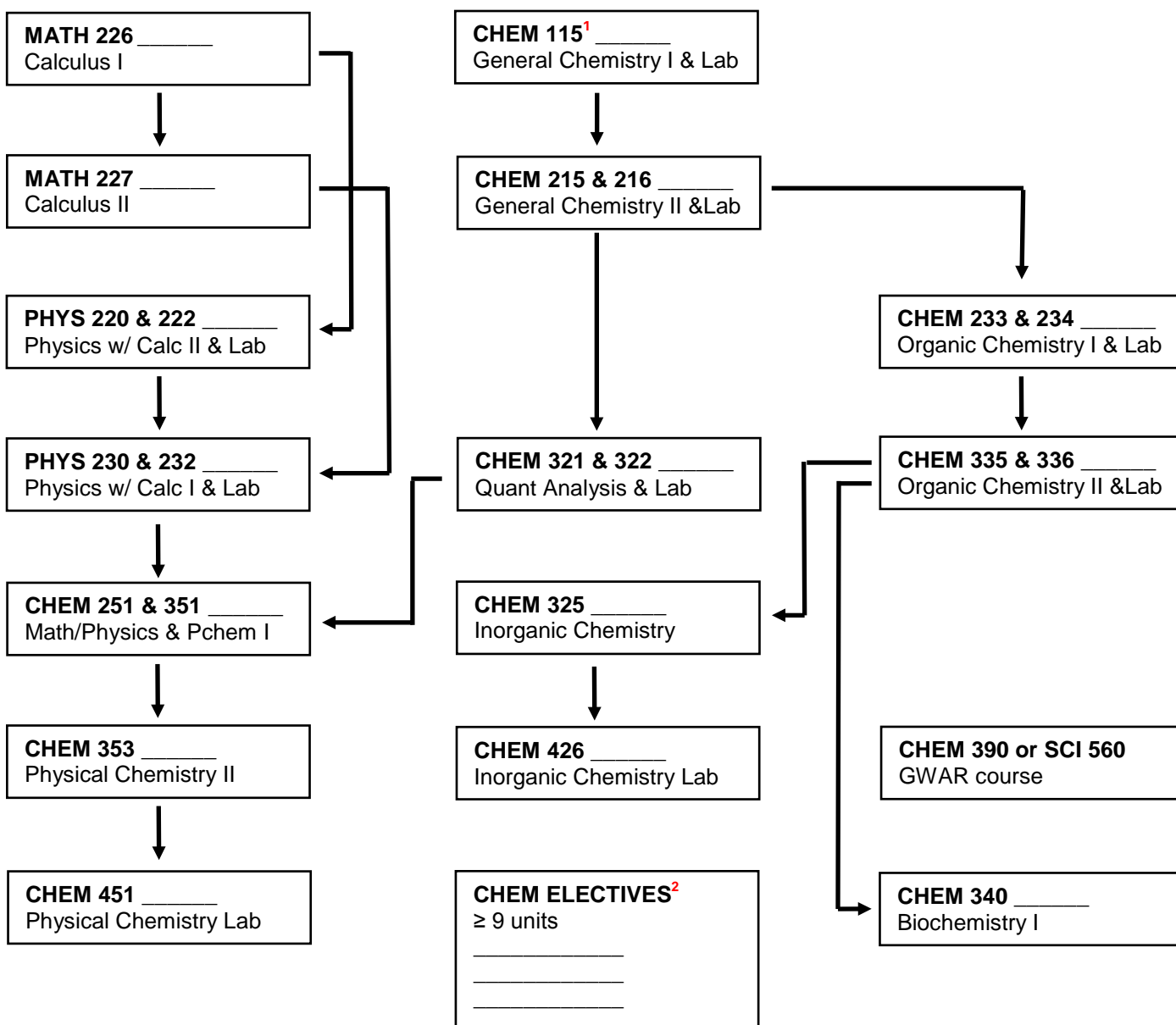
³ SCI 560 may be substituted for CHEM 390.

⁴ CHEM 343 or CHEM 699 (3 units of research in one or more of these three disciplinary areas) may be substituted for either CHEM 426 or 451.

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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 CHEM 115 requires students to complete a self-administered *placement diagnostic* to assess readiness for college-level general chemistry through ALEKS (on-line homework system). Refer to the Dept. website for more details (chemistry.sfsu.edu).

² Most CHEM electives require CHEM 321/322 and/or CHEM 335.