

## American Chemical Society Certified Concentration

This program is designed for the student who wishes to pursue an advanced degree or a career as a professional chemist.

Below is a suggested schedule of courses. This information is provided as a guide and does not supersede information provided by advisors or the Bulletin. Each student will develop a specific course schedule in consultation with their departmental advisor. For details of all the University, College and Departmental requirements for graduation, students should consult the Bulletin.

**69 semester hours** is required (not including General Education requirements). (F, S and Sum indicates that this course is usually offered in Fall, Spring and Summer semesters.)

### Freshman Year:

Chem 105 (General Chem I; 3 ch; F, S and Sum)  
Chem 105L (General Chem I Lab; 1 ch; F, S and Sum)  
Chem 106 (General Chem II; 3 ch; F, S and Sum)  
Chem 106L (General Chem II Lab; 1 ch; F, S and Sum)  
Math 131 (Calculus I; 4 ch; F, S and Sum)

### Sophomore Year:

Chem 321 (Analytical Chem; 4 ch; S)  
Chem 321L (Analytical Chem Lab; 0 ch; S)  
Chem 351 (Organic Chem I; 3 ch; F and Sum)  
Chem 351L (Organic Chem I Lab; 1 ch; F and Sum)  
Chem 352 (Organic Chem II; 3 ch; S and Sum)  
Chem 352L (Organic Chem II Lab; 1 ch; S and Sum)  
Physics 205 (University Phys I; 4 ch; F)  
Physics 205L (University Phys I Lab; 1 ch; F)  
Physics 206 (University Phys II; 4 ch; S)  
Physics 206L (University Phys II Lab; 1 ch; S)  
Math 132 (Calculus II; 4 ch; F, S and Sum)

### Junior Year:

Chem 355 (Organic Chem Lab Techniques; 2 ch; F)  
Chem 340 – or Senior year - (Techniques in Inorganic Chem; 2 ch; S, *offered alternate years*)  
Chem 341 (Inorganic Chem; 3 ch; S)  
Chem 461 (Physical Chem I; 4 ch; F)  
Chem 461L (Physical Chem I Lab; 1 ch; F)  
Chem 462 (Physical Chem II, 4 ch; S)  
Chem 462L (Physical Chem II Lab; 1 ch; S)

### Senior Year:

Chem 400 (Senior Seminar; 1 ch; S)  
Chem 431 (Biochemistry I; 3 ch; F)  
Chem 421 and 421L (Instrumental Methods of Analysis; 4 ch; F)

### Advanced Electives (6 ch required):

Choose approved advanced courses with at least three in chemistry and three in chemistry or related areas (e.g., mathematics, physics, or biology); consult the Catalog or DARS for specific approved courses. A maximum of 4 ch of Chem 499 (Introduction to Research) may be counted. Chem 330 and 399 cannot be used as advanced electives.

**ACS-Certified curriculum - 2009-2010**

The degree courses are in boldface. The plan below is only a suggested sequence, but courses must be taken with observance of prerequisites. Prerequisites are indicated in brackets.

	Fall	Spring
Freshman	<b>Chem 105</b> [see catalog for 3 <b>Chem 105L</b> [math recommend.] 1 English course* 3 (Basic skills course if needed*, Univ 101, or move one LS here ) 3 Liberal Stud. course 3 PE 101 2 15	<b>Chem 106</b> [Chem 105/105L] 3 <b>Chem 106L</b> 1 <b>Math 131*</b> [appropriate math 4 skills] Comm 101 3 Lib. Stud. course 3 14
Sophomore	<b>Chem 351</b> [Chem 105/L] 3 <b>Chem 351L</b> 1 <b>Phys 205</b> [Math 131] 4 <b>Phys 205L</b> 1 <b>Math 132*</b> [Math 131] 4 Lib. Stud. course 3 16	<b>Chem 352</b> [Chem 351] 3 <b>Chem 352L</b> [Chem 351L] 1 <b>Phys 206</b> [Phys 205, Math 132] 4 <b>Phys 206L</b> 1 <b>Chem 321/321L</b> [Chem 106/L] 4 Lib. Stud. course 3 16
Junior	<b>Chem 461</b> [Chem 321, Math 132] 4 <b>Chem 461L</b> [Chem 321] 1 <b>Chem 355</b> [Chem 352] 2 Eng 305T or 405 3 Lib. Stud. course 3 Option 3 16	<b>Chem 462</b> [Chem 461] 4 <b>Chem 462L</b> 1 <b>Chem 341</b> [Chem 352] 3 <b>Chem 340</b> [Chem 352L] 2 (offered alternate years) Lib. Stud. course (2) 6 16
Senior	<b>Chem 431</b> [Chem 352] 3 <b>Chem 421/421L</b> [Chem 321] 4 <b>Advanced elect**</b> 3 Option 5 15	<b>Chem 400</b> 1 <b>Advanced elect.**</b> 3 Capstone 3 Option 9 16

[Prerequisite]      [Pre- or Co-requisite]

\* Specific requirements are determined by proficiencies met upon entering. One basic skills course is built into this schedule, but you may need more. You may need one semester of English (107) or two (101 & 105). You may need to add language courses. You may need to start with a lower-level math course before Math 131 (Calculus). Alternatively, calculus may be started in your first semester if you place into it. Additional courses reduce the number of "Option" courses later in the curriculum.

\*\* A total of 6 hours approved advanced electives required; additional courses are your choice, as needed to complete University graduation requirement of 124 credits. Chem 499 can be taken for variable credit.