

**BACHELOR OF SCIENCE IN CHEMISTRY**  
*Biochemistry Emphasis--ACS Certified*

## YEAR 1

CHEM 111 Prin of Chem I <sup>LAC, Area 6</sup>	5	CHEM 112 Prin of Chem II	5
MATH 131 <sup>1</sup> Calculus I <sup>LAC, Area 2</sup>	4	MATH 132 Calculus II	4
BIO 110 Principles of Biology <sup>LAC, Area 6</sup>	4	LAC	<u>6</u>
LAC	<u>3</u>		15
	16		

## YEAR 2

CHEM 331 (F) Organic Chemistry I	5	CHEM 332 (S) Organic Chemistry II	5
PHYS 240 General Physics I <sup>LAC, Elective</sup>	5	PHYS 241 General Physics II	5
MATH 233 Calculus III	<u>4</u>	SCI 291 <sup>2</sup> Scientific Writing <sup>LAC, Area 1b</sup>	3
	14	BIO 210 Cell Biology	<u>3</u>
			16

## YEAR 3

CHEM 321 (F) Chemical Analysis	4	CHEM 421 (S) Instrumental Analysis	4
CHEM 481 (F) General Biochemistry I	3	CHEM 441/442 (S) Inorganic Chemistry	4
Elective <sup>3</sup>	3	CHEM 443 (S) Inorganic Chemistry Lab	1
LAC	<u>6</u>	CHEM 482 (S) General Biochemistry II	3
	16	CHEM 483 (S) Exp Biochemistry I	1
		CHEM 484 (S) Exp Biochemistry II	<u>1</u>
			14

## YEAR 4

CHEM 451 (F) Physical Chemistry I	4	CHEM 452 (S) Physical Chemistry	4
CHEM 453 (F) Physical Chemistry I Lab	1	CHEM 454 (S) Physical Chemistry II	1
CHEM 499 Seminar & Research in Chemistry	1	Lab	1
Elective <sup>3</sup>	5	CHEM 499 Seminar & Research in Chem.	6
LAC	<u>3</u>	Elective <sup>3</sup>	<u>3</u>
	14	LAC	15

<sup>1</sup> Students who lack sufficient preparation in mathematics may need to start in MATH 124 (4)-- College Algebra, MATH 125 (3)--Plane Trigonometry, or MATH 127 (4)--Elementary Functions. Consult your advisor.

<sup>2</sup> With advisor approval, students can substitute for SCI 291 (3)--Scientific Writing for their Intermediate Composition requirement.

<sup>3</sup> Recommended Electives:  
 BIO 220 Genetics (4)  
 BIO 351 Microbiology (4)  
 BIO 450 Cell Physiology (4)

A minor in Biology may be earned with BIO 110, BIO 111, and nine additional hours of appropriate BIO courses; however, you must declare a minor in Biological Sciences before you will receive credit for it.

## CHEMISTRY AND BIOCHEMISTRY

### Contact Information:

**Main Office Room Number: Ross 3480**

**Main Office Telephone Number: (970) 351-2559**

**Department Web Page: [http://www.unco.edu.chemist/chem\\_hp.htm](http://www.unco.edu.chemist/chem_hp.htm)**

- A. The four-year plan described on the other side of this sheet is only a suggested track in which to complete this major. The student must meet with his/her advisor to determine an appropriate plan.
- B. Upper-level courses are generally taught only one semester per year and are marked on the sheet as F (Fall) or S (Spring) if they are taught once per year with the first semester of two being taught in the Fall. In this plan courses are listed in order of required prerequisites first.
- C. Each major requires 120 total credits prior to graduation.
- D. Some upper-level courses are separate from laboratory; e.g., CHEM 481/CHEM 483–General Biochemistry I and Experimental Biochemistry I and CHEM 482/CHEM 484–General Biochemistry II and Experimental Biochemistry II. In these cases, CHEM 481 is taught by itself in the Fall and CHEM 482 and the two laboratories are taught in the Spring, CHEM 483 meeting in two three-hour blocks/week the first half of the semester and CHEM 484 the same schedule the second half of the semester. CHEM 451/CHEM 453–Physical Chemistry I and Physical Chemistry I Lab and CHEM 452/CHEM 454–Physical Chemistry II and Physical Chemistry II Lab. In these cases, the two are typically taken concurrently—in any case, the lecture must be taken either concurrently or would be considered a prerequisite to the laboratory.