

## UW-La Crosse Chemistry Major with ACS Certification

In addition to the UW-L B.S. degree requirements, students must complete **>400 LAB (L) hours** *beyond CHM 103/104*. These laboratory experiences must include: synthesis of molecules; measurement of chemical properties, structures, and phenomena; hands-on experience with modern instrumentation; and computational data analysis and modeling. L hours also may be attained through CHM 499 experiences that must include a final paper.

The chemistry program at UW-La Crosse is approved by the American Chemical Society (ACS). Students completing a baccalaureate degree that meets the following ACS guidelines will receive an 'ACS-certified degree.' This degree track includes the course work and experiences necessary to satisfy the requirements for ACS certification.

degree requirements	uwl credits	running total cr
<b>I. Introductory or General Chemistry</b>		
Note: L hours do not count for CHM 103 or CHM 104.		
CHM 103 (5) L = 0 gen chem I (can waive for "well-prepared" students)	5	5
CHM 104 (5) L = 0 general chem II	5	10
<b>L = 0</b>	<b>(10)</b>	
<b>II. Foundation Course Work</b>		
Required <i>minimum</i> of 3 cr course in each of 5 areas (a, b, i, o p), each with its own unique text = 15 cr. At UWL each of the courses below are <b>required</b> .		
x CHM 271 (1) L = 0 the chemical community (Fa)	1	16
a CHM 301 (5) <b>L = 84</b> analytical chem (Fa/Sp/Su)	5	21
o CHM 303 (3) organic chem I (Fa/Sp)	3	24
o CHM 305 (2) <b>L = 84</b> o-chem lab (Fa/Sp/Su)	2	26
i CHM 331 (4) <b>L = 42</b> fundamentals of inorganic chem (Fa)	4	30
p CHM 309 L = 0 physical chem I (Fa)	3	33
b CHM 325 (4) <b>OR</b> CHM 417 (4) <b>L = 42</b> fund biochem, <i>or</i> biochem I (Fa)	4	37
<b>L = 252</b>	<b>(22)</b>	
<b>III. In-Depth Course Work – Required Courses</b>		
Required <i>minimum</i> is the equivalent of four 1-semester, 3cr courses = 12 cr total. At UWL the three courses below are <b>required</b> .		
o CHM 304 (3) organic chem II (Fa/Sp/Su)	3	40
p CHM 310 (3) phys chem II (Sp)	3	43
p CHM 313 (3) <b>L = 84</b> phys chem lab (Fa/Sp)	3	46
<b>L = 84</b>	<b>(9)</b>	
<b>IV. In-Depth Course Work - Electives</b>		
<b>Option 1:</b> Two or more credits of CHM 499 with a graded final paper, or CHM 419, and any two additional in-depth electives.		
<b>Option 2:</b> One credit of CHM 499 with a final graded paper and two of the following courses, one of which must have a lab (L) component.		
<b>Option 3:</b> Two of the following courses with lab (L) components.		
p CHM 314 (2) <b>L = 42</b> adv p-chem lab (as needed upon request)		
x CHM 330 (3) L = 0 industrial chem (alt Sp 2014)		
o CHM 403 (3) L = 0 adv organic chem (alt Fa 2012)		
o CHM 405 (2) <b>L = 42</b> adv synthesis lab (alt Sp 2015)		
p/b CHM 407 (3) L = 0 biophysical chem (Sp)		
x CHM 412 (3) L = 0 environmental chem (Sp)	5-8	51-54
b CHM 418 (3) L = 0 biochem II (Sp)		
b CHM 419 (2) <b>L = 84</b> adv biochem lab (Sp)		
o/a CHM 424 (3) <b>L = 42</b> spectroscopy (alt Sp 2014)		
i CHM 431 (3) L = 0 adv inorganic chem (alt Sp 2015)		
a CHM 441 (4) <b>L = 42</b> instrumental analysis (Fa)		
x CHM 461 (4) <b>L = 42</b> nuclear chem (Sp)		
Students also must complete the LES and content exam as milestones		
<b>L = 84</b>	<b>(5-8)</b>	
<b>TOTALS</b>	<b>L = 420</b>	<b>51-54</b>

Additional **21 credits** required to meet prerequisites and required courses include:

MTH 207 (5), 208 (4), 310 (4) (calculus series) **and** PHY 203 (4), 204 (4) (calculus-based physics series)

## EXAMPLE ACS-CERTIFIED CHEMISTRY MAJOR SCHEDULE

(with Mathematics minor of 22 cr)

(also meets General Education requirements of 48 cr)

### FRESHMAN

Fall courses	cr
MTH 151 Precalculus	4
CHM 103 General Chemistry I (GE05)	5
ENG 110 College Writing I (GE01)	3
General Ed Elective ~ART102 (GE08)	2
	14/10

Spring courses	cr
MTH 207 Calculus I (GE02)	5
CHM 104 General Chemistry II	5
CST 110 Speech (GE01)	3
General Ed Elective ~EFN205 (GE03)	3
	16/11

### SOPHOMORE

Fall courses	cr
MTH 208 Calculus II (GE02)	4
CHM 303 Organic Chemistry I	3
CHM 331 Fundamental Inorganic Chem	4
PHY 203 General Physics I (GE05)	4
CHM 271 The Chemical Community	1
	16/8

Spring courses	cr
MTH 310 Calculus III	4
CHM 304 Organic Chemistry II	3
CHM 305 Organic Chemistry Lab	2
PHY 204 General Physics II	4
General Ed Elective ~HIS 101 (GE04)	3
	16/3

### JUNIOR

Fall courses	cr
MTH 309 Linear Algebra w/Diff Eq	4
CHM 309 Physical Chemistry I	3
CHM 301 Analytical Chemistry	5
General Ed Elective ~PSY100 (GE06)	3
	15/3

Spring courses	cr
MTH 225 or 265 or >310 = Req Math	4
CHM 310 Physical Chemistry II	3
CHM 313 Physical Chemistry Lab	3
General Ed Elective ~ENG 201 (GE07)	3
General Ed Elective ~HPR105 (GE09)	3
	16/6

### SENIOR

Fall courses	cr
CHM 313, 314, 325, 403, (405?), 417, 441	2-4
CHM 313, 314, 325, 403, (405?), 417, 441	2-4
General Ed Elective ~ECO 120 (GE04)	3
General Ed Elective ~MUS 105 (GE08)	2
	~12/5

Spring courses	Cr
CHM 325, 330, 407, 412, 418, 424, 431, 461	3-4
CHM 325, 330, 407, 412, 418, 424, 431, 461	3-4
CHM 325, 330, 407, 412, 418, 424, 431, 461	3-4
	1
General Ed Elective –Pick Any	3
	~15/3

#### General Education Category Requirements Summary

GE01 Literacy Skills = 6 (3+3) – ENG, CST	6
GE02 Math/Logic Skills = 7 (5+4) – MTH x2	9
GE03 Minority Cultures/Multiracial Women = 3 – EFN	3
GE04 International/Multicultural = 6 (3+3) – HIS, ECO	6
GE05 Science/Natural World = 4 (5+4) – CHM, PHY	9
GE06 Self/Society = 3 – PSY, SOC, ANT	3
GE07 Humanistic/Values/Meaning = 3 – ENG/LIT, PHL	3
GE08 Arts/Aesthetics = 4 (2+2) – Appreciation Courses, ART, ESS, MUS, THA	4
GE09 Health/Well-Being = 3 – HPR, SAH	3
GE Pick one 3cr course from any category	3
<b>TOTAL GE CREDITS THESE MAJORS WOULD EARN:</b>	<b>49</b>