

CHEMISTRY CURRICULUM REVISION PROPOSAL

Rationale for Curriculum Revision

- The revised Chemistry BS curriculum meets the new university policy to reduce the total credit hours from **127 → 120**.
- The revised Chemistry BS curriculum also meets all ACS BS Chemistry requirements (The revised Chemistry BS curriculum distributes the ACS' required/recommended **M**acromolecular, **S**upramolecular, and **N**anoscale (**MSN**) and Green Chemistry topics into the existing courses).

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Summary

Course Name	Course #	Credit hours (current)	Credit hours (Proposed)	Credit hour Change (+/-)
Organic Chemistry Laboratory	CHEM 240	2 (1,4,2)	1 (0,4,1)	-1
Analytical Chemistry	CHEM 247	3 (3,3,3)	4 (3,4,4)	+1
Multivariate and Vector Calculus And Introduction to Differential Equations	MATH 251 and MATH 252	8 (4,1,4) and (4,0,4)	4 (4,1,4) or (4,0,4)	-4
Spectroscopic Methods in Identification and Analysis	CHEM 434	4 (3,4,4)	0	-4
Undergraduate Seminar	CHEM 451	3 (3,0,3)	2 (2,0,2)	-1
Chemistry Colloquium	CHEM 485	2 (0,1,1) and (0,1,1)	1 (1,0,1)	-1
Introductory Statistics, Introduction to Data Science, or Cheminformatics	MATH 225, DS 151, CHEM 452	0	3 (3,0,3) or 3 (3,0,3) or 3 (3,0,3)	+3
NET CHANGE				-7

Key: (Lecture weekly hours, Lab weekly hours, credits)

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Reformatting Courses to be just a Lecture or just a Lab:

Key: (Lecture weekly hours, Lab weekly hours, credits)

CHEM 124 Principles of Chemistry I with Laboratory (3,3,4) ⇒ CHEM 122 Principles of Chemistry I (3,0,3) and CHEM 123 Principles of Chemistry I Laboratory (0,4,1)

CHEM 125 Principles of Chemistry II with Laboratory (3,3,4) ⇒ CHEM 126 Principles of Chemistry II (3,0,3) and CHEM 140 Principles of Chemistry II Laboratory (0,4,1)

CHEM 237 Organic Chemistry I (3,4,4) ⇒ CHEM 235 Organic Chemistry I (3,0,3) and CHEM 236 Organic Chemistry I Laboratory (0,4,1)

CHEM 247 Analytical Chemistry (3,3,3) ⇒ CHEM 247 Analytical Chemistry (3,0,3) and CHEM 248 Analytical Chemistry Laboratory (0,4,1)

CHEM 321 Instrumental Analysis (3,4,4) ⇒ CHEM 321 Instrumental Analysis (3,0,3) and CHEM 322 Instrumental Analysis Laboratory (0,4,1)

CHEM 344 Physical Chemistry II (3,4,4) ⇒ CHEM 344 Physical Chemistry II (3,0,3) and CHEM 345 Physical Chemistry II Laboratory (0,4,1)

CHEM 434 Spectroscopic Methods in Identification and Analysis (3,4,4) ⇒ CHEM 434 Spectroscopic Methods in Identification and Analysis (3,0,3) and CHEM 435 Spectroscopic Methods in Identification and Analysis Laboratory (0,4,1)

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Summary

Bachelor Science in Chemistry Program Requirements:

Current		Proposed	
Course Number	Credits	Course Number	Credits
Chemistry Requirements	54	Chemistry Requirements	51
CHEM 100	2	CHEM 100	2
CHEM 124	4	CHEM 124	4
CHEM 125	4	CHEM 125	4
CHEM 237	4	CHEM 237	4
CHEM 239	3	CHEM 239	3
CHEM 240	2	CHEM 240	1
CHEM 247	3	CHEM 247	4
CHEM 321	4	CHEM 321	4
CHEM 343	3	CHEM 343	3
CHEM 344	4	CHEM 344	4
CHEM 415	3	CHEM 415	3
CHEM 416	3	CHEM 416	3
CHEM 434	4		
CHEM 451	3	CHEM 451	2
		CHEM 452 (or MATH 225 or DS 151)	3
CHEM 485	1	CHEM 485	1
CHEM 485	1		
Select two CHEM electives ¹	6	Select two CHEM electives ¹	6
Biology Requirements	(6-7)	Biology Requirements	(6-7)
BIOL 107	3	BIOL 107	3
or BIOL 115		or BIOL 115	
BIOL 401	(3-4)	BIOL 401	(3-4)
or BIOL 403		or BIOL 403	
Mathematics Requirements	18	Mathematics Requirements	14

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Summary

Bachelor Science in Chemistry Sample Curriculum

YEAR 1			
SEMESTER 1	CREDIT HOURS	SEMESTER 2	CREDIT HOURS
CHEM 100	2	CHEM 125	4
CHEM 124	4		
		MATH 152	5
CS 105 or 110	2	PHYS 123	4
MATH 151	5	Social Sciences Elective	3
Humanities 200-level Course	3		
	16		16
YEAR 2			
SEMESTER 1	CREDIT HOURS	SEMESTER 2	CREDIT HOURS
CHEM 237	4	CHEM 239	3
		CHEM 240	1
CHEM 247	4	BIOL 107 or 115	3
MATH 251 or 252	4	Humanities or Social Sciences Elective	3
PHYS 221	4	Humanities Elective (300+)	3
		Free Elective	3
	16		16
YEAR 3			
SEMESTER 1	CREDIT HOURS	SEMESTER 2	CREDIT HOURS
CHEM 415	3	CHEM 321	4
CHEM 343	3		
		CHEM 344	4
I PRO Elective I	3	Chemistry Elective1	3
Social Sciences Elective (300+)	3	Humanities Elective (300+)	3
CHEM 452 or MATH 225 or DS 151	3		
	15		14
YEAR 4			
SEMESTER 1	CREDIT HOURS	SEMESTER 2	CREDIT HOURS

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Future Proposal

HOME / UNDERGRADUATE / COLLEGES / LEWIS COLLEGE OF SCIENCE AND LETTERS / BIOLOGY / BACHELOR OF SCIENCE IN BIOLOGY

Bachelor of Science in Biology

OVERVIEW

PROGRAM REQUIREMENTS

SAMPLE CURRICULUM

Required Courses

Biology Requirements		(34)
BIOL 100	Introduction to the Profession	2
BIOL 107	General Biology Lectures	3
BIOL 109	General Biology Laboratory	1
BIOL 115	Human Biology	3
BIOL 117	Human Biology Laboratory	1
BIOL 210	Microbiology	3
BIOL 214	Genetics	3
BIOL 225	Microbiology Laboratory	2
BIOL 401	Introductory Biochemistry	3
BIOL 402	Metabolic Biochemistry	3
BIOL 430	Human Physiology	3
BIOL 445	Cell Biology	3
BIOL 451	Biological Literature	2
BIOL 495	Biology Colloquium	1
BIOL 495	Biology Colloquium	1
Senior Biology Laboratory Requirements		(6)
Select two courses from the following:		6
BIOL 404	Biochemistry Laboratory	3
BIOL 431	Animal Physiology Laboratory	3
BIOL 446	Cell Biology Laboratory	3
BIOL 455	Macromolecular Techniques	3