

Chemistry, B.S. (120 Units)
Valid for Catalog Years: 2018/2019 to 2020/2021
*Official planning guide approved by the College of Science & Math

For assistance or to schedule an advising appointment, please contact the
CSM Advising and Resources Center
at 559-278-4150, Science I 136
Department of Chemistry:
559-278-2103, Science I 380

	Freshman		Sophomore		Junior		Senior	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Units	15	16	13	16-17	15-21	14-15	16-17	15-18
Milestones	CHEM 1A and 1AL	CHEM 1B and 1BL Major Advising	CHEM 128A MATH 75	CHEM 128B PHYS 4B and 4BL	UDWS Major Advising	CHEM 102	CHEM 106 CHEM 110A CHEM 123 CHEM 155A	
General Education	A1 (3 Units) Oral Communication *Must pass with a C or better	A3 (3 Units) Critical Thinking *Must pass with a C or better		B2 (3-4 Units) Life Sciences	C1 (3-4 Units) Arts	C1/C2 (3-4 Units) Arts or Humanities	D2 (3 Units) American Government	IB (3 Units) Physical Universe & Its Life Forms
	A2 (3 Units) Written Communication *Must pass with a C or better				C2 (3-4 Units) Humanities	D1 (3 Units) American History	D3 (3 Units) Social Science	IC (3-4 Units) Arts & Humanities
							E1 (3 Units) Lifelong Understanding & Self Development	ID (3-4 Units) Social, Political, & Economic Institutions
Major	GE Area B4 MATH 75 (4 Units) Quantitative Reasoning *See course catalog for prerequisite requirements	GE Area B1 PHYS 4A (3 Units) Physical Sciences [GE B4; MATH 76 (may be taken concurrently)]	CHEM 128A (3 Units) [Pre-Req: CHEM 1B or 8 (C or better) or instructor permission]	CHEM 102 (5 Units) [Pre-Req: CHEM 1B (C or better); CHEM 128A]	CHEM 110A (3 Units) [Pre-Req: MATH 76; CHEM 1B, 8 or 128A; PHYS 2B or 4B; MATH 77 & PHYS 4C recommended]	CHEM 110B (3 Units) [Pre-Req: MATH 77; CHEM 110A; PHYS 4C or instructor permission]	CHEM 106 (4 Units) or CHEM 106S (4 Units) [Pre-Req: CHEM 102 (C or better), 108 or 110A, or instructor permission; UDWS]	

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Major	CHEM 1A (3 Units) [Pre-Req: High school chemistry. May be taken concurrently: GE B4; CHEM 1AL] *Not open to students with credit in CHEM 1B	GE Area B3 PHYS 4AL (1 Unit) Lab [Co-Req: PHYS 4A]	CHEM 129A (2 Units) [Pre-Req: CHEM 8 or 128A (C or better; may be taken concurrently)]	CHEM 128B (3 Units) [Pre-Req: CHEM 128A (C or better)]	CHEM 123 (3 Units) [Pre-Req: CHEM 1B, 102; CHEM 110A (may be taken concurrently)]	CHEM 111 (3 Units) [Pre-Req: CHEM 102; CHEM 110B or 112 (may be taken concurrently); UDWS]		
	CHEM 1AL (2 Units) [Pre-Req: CHEM 1A (may be taken concurrently)]	CHEM 1B (3 Units) [Pre-Req: CHEM 1A & 1AL (both passed with a C or better); CHEM 1BL (may be taken concurrently)]	MATH 77 (4 Units) [Pre-Req: MATH 76]	CHEM 129B (2 Units) [Pre-Req: CHEM 129A; CHEM 128B (may be taken concurrently)]	CHEM 155A (3 Units) [Pre-Req: CHEM 128B]	CHEM 124 (2 Units) [Pre-Req: CHEM 123 (may be taken concurrently); UDWS]		
		CHEM 1BL (2 Units) [Pre-Req: CHEM 1B (may be taken concurrently)]	PHYS 4B (3 Units) [Pre-Req: PHYS 4A; MATH 77 (may be taken concurrently)]	PHYS 4C (3 Units) [Pre-Req: PHYS 4B; MATH 77]				
		MATH 76 (4 Units) [Pre-Req: MATH 75 or MATH 75A & B]	PHYS 4BL (1 Unit) [Co-Req: PHYS 4B]					
Additional Graduation Requirements					UDWS (0-4 Units) *Upper Division Writing Exam OR "W" Course (must pass with a C or better)		Elective *Recommended: CHEM 140T, 153, 156, 160, or 190	Elective *Recommended: CHEM 140T, 153, 156, 160, or 190

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Additional Graduation Requirements								MI (3 Units) Multicultural/ International

FOOTNOTES:

Prerequisites/Corequisites: Other restrictions may apply. Please see your course catalog for detailed prerequisite/corequisite requirements.

Grade Requirements: Chemistry majors may not take the following courses for CR/NC grading: CHEM 1A, 1AL, 1B, 1BL, 102, 106, 106S, 110A, 110B, 111, 123, 124, 128A, 128B, 129A, 129B, 155; MATH 75, 76, 77; PHYS 4A, 4AL, 4B, 4BL, 4C.

Electives (6 units): Students must earn a minimum of 120 units total to graduate. The number of required elective units may vary, depending on the amount of units earned from major and GE courses.

Upper Division Writing Skills requirement (UDWS): All undergraduate students must demonstrate competency in writing skills by passing the Upper Division Writing Exam (UDWE) or by obtaining a C or better in an approved upper division writing course, identified by the letter "W."

Substitutions: If substitutions/exceptions/waivers are made for any major courses that also meet GE and/or the Multicultural/International graduation requirement, the student is responsible for completing additional courses to satisfy the respective areas (GE and/or MI). This also includes the upperdivision writing requirement.

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	A2 (3 Units) Written Communication *Must pass with a C or better				C2 (3-4 Units) Humanities	D1 (3 Units) American History	D3 (3 Units) Social Science	IC (3-4 Units) Arts & Humanities
							E1 (3 Units) Lifelong Understanding & Self Development	ID (3-4 Units) Social, Political, & Economic Institutions
								MI (3 Units) Multicultural/ International
	GE Area B4 MATH 75 (4 Units) Quantitative Reasoning *See course catalog for prerequisite requirements	GE Area B1 PHYS 4A (3 Units) Physical Sciences [GE B4; MATH 76 (may be taken concurrently)]	CHEM 128A (3 Units) [Pre-Req: CHEM 1B or 8 (C or better) or instructor permission]	CHEM 102 (5 Units) [Pre-Req: CHEM 1B (C or better); CHEM 128A]	CHEM 110A (3 Units) [Pre-Req: MATH 76; CHEM 1B, 8 or 128A; PHYS 2B or 4B; MATH 77 & PHYS 4C recommended]	CHEM 110B (3 Units) [Pre-Req: MATH 77; CHEM 110A; PHYS 4C or instructor permission]	CHEM 106 (4 Units) or CHEM 106S (4 Units) [Pre-Req: CHEM 102 (C or better), 108 or 110A, or instructor permission; UDWS]	

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Major	CHEM 1A1 (2 Units) [Pre-Req: CHEM 1A (may be taken concurrently)]	CHEM 1B (3 Units) [Pre-Req: CHEM 1A & 1AL (both passed with a C or better); CHEM 1BL (may be taken concurrently)]	MATH 77 (4 Units) [Pre-Req: MATH 76]	CHEM 129B (2 Units) [Pre-Req: CHEM 129A; CHEM 128B (may be taken concurrently)]	CHEM 155A (3 Units) [Pre-Req: CHEM 128B]	CHEM 124 (2 Units) [Pre-Req: CHEM 123 (may be taken concurrently); UDWS]		
		CHEM 1BL (2 Units) [Pre-Req: CHEM 1B (may be taken concurrently)]	PHYS 4B (3 Units) [Pre-Req: PHYS 4A; MATH 77 (may be taken concurrently)]	PHYS 4C (3 Units) [Pre-Req: PHYS 4B; MATH 77]				
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