

Freshman Chemistry Major Advisement Summary

General department information <http://www.chem.unr.edu>
Freshman information <http://www.chem.unr.edu/freshmen>
Chemistry Degrees <http://www.chem.unr.edu/undergraduates/degrees.php>
Coll. of Sci. Advising Homepage <http://www.chem.unr.edu/cos-freshmen>
Department Contact 775-784-6041, advising@chem.unr.edu

Identify yourself as a Chemistry Major if you call or write!

Freshman chemistry majors normally take CHEM 201 (General Chemistry for Scientists and Engineers I), however CHEM 121 (General Chemistry I) is acceptable.

Your ACT or SAT mathematics score dictates your placement into either CHEM 121 or 201 and your first semester course selections:

ACT math score	SAT math score	Typical first semester courses
28 and above	630 and above	CHEM 201 – Gen. Chemistry for Sci. and Eng. I MATH 181 – Calculus I English † Foreign Language ‡ Elective
27	610-629	CHEM 121 – General Chemistry I MATH 128 – Precalculus and Trig. or MATH 127 English † Foreign Language ‡ Elective
22-26	520-609	MATH 126 – Precalculus I ◇ English † Foreign Language ‡ Core social science or core fine arts Elective
below 22	below 520	MATH 096 – Intermediate Algebra ◇ English † Foreign Language ‡ Core social science or core fine arts Elective

Notes:

† For example: ENG 101, see page 2 for English placement information.

‡ Two semesters of a modern foreign language is required. **Note:** Two years of passing coursework in high school foreign language may be used to waive the chemistry foreign language requirement.

◇ You should attempt to gain admission to MATH 127, MATH 128 or MATH 181 prior to the start of the Fall semester, see the section “Solving mathematics prerequisite problems” on page 2.

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Solving mathematics prerequisite problems:

The mathematics prerequisite for CHEM 201 is prior completion or co-enrollment in MATH 181 (or an equivalent calculus course). The mathematics prerequisite for CHEM 121 is prior completion or co-enrollment in MATH 127 or MATH 128 (or a higher core curriculum math course).

1. If your mathematics exam scores are less than ACT=27 or SAT=610 then you should attempt to gain admission to MATH 181, MATH 128, or MATH 127 by one of the following routes:
 - gain admission to MATH 181, 128, or 127 by obtaining the requisite scores on the ACCUPLACER placement test. Information about this test is available at <http://www.unr.edu/mathcenter/placement.html>.
 - gain admission to MATH 127 by completing MATH 126 during the summer session and obtaining a passing score on the final exam, or obtaining a B in the course.
2. Chemistry majors who are unable enroll in MATH 181, MATH 128, or MATH 127 should enroll in MATH 126, if possible. If your test scores are less than ACT=22 or SAT=520 then you should attempt to gain admission to MATH 126 by one of the following routes:
 - by obtaining the requisite scores on the ACCUPLACER placement test. Information about this test is available at <http://www.unr.edu/mathcenter/placement.html>.
 - by completing MATH 096 during the summer session and obtaining a passing score on the final exam. For additional information on the “Freshman Start” summer program, see <http://www.freshmanstart.unr.edu/>.
3. Chemistry majors who are unable to enroll in MATH 181, MATH 128, MATH 127, or MATH 126 should enroll in MATH 096.

Freshman English placement:

Your ACT English or SAT critical reading score dictates your placement into the first semester English course:

ACT English score	SAT critical reading score	First semester English course †
30 and above	680 and above	ENG 102 – Composition II (3 credits)
21-29	510-670	ENG 101 – Composition I (3 credits)
18-20	440-500	{ ENG 100I – Composition Intensive (3 credits) or ENG 100I+105+106 (5 credits)
17 and below	430 and below	ENG 098 – Preparatory Composition (3 credits)

†Freshman who do not qualify to start in ENG 101 during the fall semester should consider taking ENG 098 during the summer session. For additional information on the “Freshman Start” summer program, see <http://www.freshmanstart.unr.edu/>. If you believe your test scores do not accurately reflect your writing skills, you may request an alternate placement evaluation; see http://www.unr.edu/cla/engl/cwp/student_resources/course_placement.htm.

Rules for AP Credit in Chemistry

Score on AP Chem exam	AP Credit granted	Passed AP labs held at UNR while in high school	Course to take in year 1 at UNR†
1 or 2	none	none 121L 121L&122L	CHEM 121 or 201, 122 or 202 CHEM 121A, 122 CHEM 121A, 122A
3	CHEM 121A (3 credits)‡	none CHEM 121L CHEM 121L&122L	CHEM 121L, 122 CHEM 122 CHEM 122A
4 or 5	CHEM 121A, 122A (6 credits)◇	none CHEM 121L CHEM 121L&122L	CHEM 121L, 122L, 330, 341 CHEM 122L, 330, 341 CHEM 330, 341

Notes:

† Special lecture and laboratory courses are listed below (these may not appear in the Class Schedule; contact the Chemistry Department Office for call numbers):

121A – CHEM 121 lecture portion (3 credits)

122A – CHEM 122 lecture portion (3 credits)

121L – CHEM 121 lab portion (1 credit)

122L – CHEM 122 lab portion (1 credit)

‡ Core science requirement is satisfied only after successful completion of CHEM 121L.

◇ Core science requirement is satisfied only after successful completion of CHEM 121L and 122L.

UNR offers three undergraduate degrees in Chemistry:

Bachelor of Science in Chemistry – Professional Chemistry Option* BS-CHP

Bachelor of Science in Chemistry – Environmental Chemistry Option* BS-CEC

Bachelor of Science with a Field of Concentration in Chemistry BS-CH

*Professional Chemistry degrees certified by the American Chemical Society

Detailed information about these degree programs is given in the UNR *General Catalog* (see <http://www.chem.unr.edu/ecatalog-degrees>) and the *Chemistry Major's Handbook*, which can be downloaded from the UNR Chemistry Major's Homepage (<http://www.chem.unr.edu/undergraduates/>).

Suggested curriculum plans for each of these degrees are on the following pages.

Example Curriculum Plan for BS-CHP degree (Professional Option)			
Year	Semester	Course	Credits
1	Fall	CHEM 201 – General Chemistry for Scientists and Engineers I	4
		MATH 181 – Calculus I	4
		ENG 101 – Composition I	3
		GER 111 – Elementary German I	4
		General elective	1
Fall semester total			16
	Spring	CHEM 202 – General Chemistry for Scientists and Engineers II	4
		MATH 182 – Calculus II	4
		ENG 102 – Composition II	3
		GER 112 – Elementary German II	4
		General elective	1
Spring semester total			16
Year 1 total			32
2	Fall	CHEM 341 – Organic Chemistry for Scientists and Professionals I	3
		CHEM 347 – Laboratory Techniques of Organic Chemistry I	2
		MATH 283 – Calculus III	4
		PHYS 180 – Physics for Scientists and Engineers I	3
		PHYS 180L – Physics for Scientists and Engineers Laboratory I	1
CH 201 – Ancient and Medieval Cultures	3		
Fall semester total			16
	Spring	CHEM 342 – Organic Chemistry for Scientists and Professionals II	3
		CHEM 348 – Laboratory Techniques of Organic Chemistry II	2
		MATH 285 – Differential Equations	3
		PHYS 181 – Physics for Scientists and Engineers II	3
		PHYS 181L – Physics for Scientists and Engineers Laboratory II	1
CH 202 – The Modern World	3		
General elective	1		
Spring semester total			16
Year 2 total			32
3	Fall	CHEM 421 – Physical Chemistry I	3
		CHEM 330 – Analytical Chemistry	4
		CH 203 – The American Experience and Constitutional Change	3
		Fine Arts core course	3
		General elective(s)	3
Fall semester total			16
	Spring	CHEM 422 – Physical Chemistry II	3
		CHEM 423 – Physical Chemistry Laboratory	3
		Chemical science elective	3
		Social Science core course	3
		General elective(s)	4
Spring semester total			16
Year 3 total			32
4	Fall	CHEM 431 – Advanced Inorganic Chemistry	3
		CHEM 435 – Chemical Synthesis	3
		CHEM 495 – Senior Thesis in Chemistry I (Chemistry capstone)	3
		Chemical science elective	3
		General elective(s)	4
Fall semester total			16
	Spring	CHEM 455 – Instrumental Analysis	3
		Chemical science elective	3
		Non-Chemistry capstone (selected to also satisfy Diversity requirement)	3
		General electives	7
		Spring semester total	
Year 4 total			32
Total credits for graduation			128

Example Curriculum Plan for BS-CEC degree (Environmental Option)				
Year	Semester	Course	Credits	
1	Fall	CHEM 201 – General Chemistry for Scientists and Engineers I	4	
		MATH 181 – Calculus I	4	
		ENG 101 – Composition I	3	
		GER 111 – Elementary German I	4	
		General elective	1	
	Fall semester total		16	
Spring	CHEM 202 – General Chemistry for Scientists and Engineers II	MATH 182 – Calculus II	4	
		ENG 102 – Composition II	3	
		GER 112 – Elementary German II	4	
		General elective	1	
		Spring semester total		16
Year 1 total			32	
2	Fall	CHEM 341 – Organic Chemistry for Scientists and Professionals I	3	
		CHEM 347 – Laboratory Techniques of Organic Chemistry I	2	
		MATH 283 – Calculus III	4	
		PHYS 180 – Physics for Scientists and Engineers I	3	
		PHYS 180L – Physics for Scientists and Engineers Laboratory I	1	
		CH 201 – Ancient and Medieval Cultures	3	
	Fall semester total		16	
	Spring	CHEM 342 – Organic Chemistry for Scientists and Professionals II	CHEM 348 – Laboratory Techniques of Organic Chemistry II	2
			MATH 285 – Differential Equations	3
			PHYS 181 – Physics for Scientists and Engineers II	3
PHYS 181L – Physics for Scientists and Engineers Laboratory II			1	
CH 202 – The Modern World	3			
General elective	1			
Spring semester total		16		
Year 2 total			32	
3	Fall	CHEM 421 – Physical Chemistry I	3	
		CHEM 330 – Analytical Chemistry	4	
		CH 203 – The American Experience and Constitutional Change	3	
		Fine Arts core course	3	
		General elective(s)	3	
	Fall semester total		16	
	Spring	CHEM 422 – Physical Chemistry II	CHEM 423 – Physical Chemistry Laboratory	3
			NRES 430 – Analysis of Environ. Contaminants	3
NRES 431 – Analysis of Environ. Contaminants Lab.			1	
Social Science core course	3			
General elective(s)	3			
Spring semester total		16		
Year 3 total			32	
4	Fall	CHEM 431 – Advanced Inorganic Chemistry	3	
		CHEM 435 – Chemical Synthesis	3	
		CHEM 495 – Senior Thesis in Chemistry I (Chemistry capstone)	3	
		Environmental science elective	3	
		Non-Chemistry capstone (selected to also satisfy Diversity requirement)	3	
		General elective(s)	1	
	Fall semester total		16	
Spring	CHEM 455 – Instrumental Analysis	3		
NRES 433 – Environ. Chem.: Exposure, Transport, Fate	3			
Chemical science elective	3			
General electives	7			
Spring semester total		16		
Year 4 total			32	
Total credits for graduation			128	

Example Curriculum Plan for BS-CH degree (Field of Concentration)			
Year	Semester	Course	Credits
1	Fall	CHEM 201 – General Chemistry for Scientists and Engineers I	4
		MATH 181 – Calculus I	4
		ENG 101 – Composition I	3
		GER 111 – Elementary German I	4
		General elective	1
Fall semester total			16
	Spring	CHEM 202 – General Chemistry for Scientists and Engineers II	4
		MATH 182 – Calculus II	4
		ENG 102 – Composition II	3
		GER 112 – Elementary German II	4
		General elective	1
Spring semester total			16
Year 1 total			32
2	Fall	CHEM 341 – Organic Chemistry for Scientists and Professionals I	3
		CHEM 347 – Laboratory Techniques of Organic Chemistry I	2
		PHYS 151 – General Physics I	4
		PHYS 151L – General Physics Laboratory I	0
		CH 201 – Ancient and Medieval Cultures	3
General elective(s)	4		
Fall semester total			16
	Spring	CHEM 342 – Organic Chemistry for Scientists and Professionals II	3
		CHEM 348 – Laboratory Techniques of Organic Chemistry II	2
		PHYS 152 – General Physics II	4
		PHYS 152L – General Physics Laboratory II	0
		CH 202 – The Modern World	3
General elective(s)	4		
Spring semester total			16
Year 2 total			32
3	Fall	CHEM 421 – Physical Chemistry I	3
		CHEM 330 – Analytical Chemistry	4
		CH 203 – The American Experience and Constitutional Change	3
		Fine Arts core course	3
		General elective(s)	3
Fall semester total			16
	Spring	CHEM 422 – Physical Chemistry II	3
		Chemical science elective	2
		Social Science core course	3
		General electives	8
Spring semester total			16
Year 3 total			32
4	Fall	CHEM 431 – Advanced Inorganic Chemistry	3
		Chemical science elective	3
		Capstone (recommend Chemistry capstone CHEM 495 – Senior Thesis I)	3
		General electives	7
		Fall semester total	
	Spring	Chemical science elective	3
		Non-Chemistry capstone (selected to also satisfy Diversity requirement)	3
		General electives	10
Spring semester total			16
Year 4 total			32
Total credits for graduation			128

Note: Applies to students transferring from a State of Nevada community college.

Example Curr. Plan for Comm. Coll. transfer into BS-CH degree (Field of Concentration)			
Year	Semester	Course	Credits
1	Fall	MATH 128 – College Algebra and Trigonometry	5
		ENG 101 – Composition I	3
		GER 111 – Elementary German I	4
		Social Science core course	3
		General elective	1
Fall semester total			16
		MATH 181 – Calculus I	4
		ENG 102 – Composition II	3
		GER 112 – Elementary German II	4
		Fine Arts core course	3
		General elective	2
Spring semester total			16
Year 1 total			32
2	Fall	CHEM 201 – General Chemistry I (CHEM 121 acceptable)	4
		PHYS 151 – General Physics I	4
		PHYS 151L – General Physics Laboratory I	0
		MATH 182 – Calculus II	4
		CH 201 – Ancient and Medieval Cultures	3
General elective(s)	1		
Fall semester total			16
	Spring	CHEM 202 – General Chemistry II (CHEM 122 acceptable)	4
		PHYS 152 – General Physics II	4
		PHYS 152L – General Physics Laboratory II	0
		CH 202 – The Modern World	3
		CH 203 – The American Experience and Constitutional Change	3
General elective(s)	2		
Spring semester total			16
Year 2 total			32
3	Fall	CHEM 341 – Organic Chemistry for Scientists and Professionals I	3
		CHEM 330 – Analytical Chemistry	4
		CHEM 347 – Laboratory Techniques of Organic Chemistry I	2
		General elective(s)	7
		Fall semester total	
	Spring	CHEM 342 – Organic Chemistry for Scientists and Professionals II	3
		CHEM 348 – Laboratory Techniques of Organic Chemistry II	2
		Non-Chemistry capstone (selected to also satisfy Diversity requirement)	3
		General electives	8
		Spring semester total	
Year 3 total			32
4	Fall	CHEM 421 – Physical Chemistry I	3
		CHEM 431 – Advanced Inorganic Chemistry	3
		Chemical science elective	3
		Capstone (recommend Chemistry capstone CHEM 495 – Senior Thesis I)	3
		General electives	4
Fall semester total			16
	Spring	CHEM 422 – Physical Chemistry II	3
		Chemical science elective	3
		Chemical science elective	2
		General electives	8
		Spring semester total	
Year 4 total			32
Total credits for graduation			128