

**CREDITS REQUIRED IN MAJOR: 66.5**

To graduate as a chemistry major or minor in any of the programs, a student must earn a grade of C or better in all chemistry courses and a minimum grade point average of 2.0 in all other courses required for the major.

**FOUNDATION/REQUIRED MAJOR COURSES: 39-44 CREDITS**

COURSE NUMBER	COURSE NAME	CREDITS	PREREQUISITES	OFFERED	Online
CHY 113	Principles of Chemistry I	3	Pre- or co-requisite: MAT 108 (or concurrent) or MAT 140 (placement or concurrent) or MAT 152 (placement or concurrent) or permission.	Fall, Spring	
CHY 114	Laboratory Techniques I	1.5	CHY 113 (or concurrent)	Fall, Spring	
CHY 115	Principles of Chemistry II	3	Grade of C or better in CHY 113	Spring, Summer	
CHY 116	Laboratory Techniques II	1.5	Grade of C or better in CHY 114; CHY 115 (or concurrent)	Spring, Summer	
CHY 233	Analytical Chemistry w/Lab	5	Grade of C or better in CHY 115 and CHY 116	Fall	
CHY 251	Organic Chemistry I	3	Grade of C or better in CHY 115	Fall, Summer	
CHY 252	Organic Chemistry Laboratory	2	Grade of C or better in CHY 116; CHY 251 (or concurrent)	Fall, Summer	
CHY 253	Organic Chemistry II	3	Grade of C or better in CHY 251	Spring, Summer	
CHY 254	Organic Chemistry Laboratory II	2	Grade of C or better in CHY 252; CHY 253 (or concurrent)	Spring, Summer	
CHY 373	Chemical Thermodynamics	3	Grade of C or better in CHY 115, MAT 152, and PHY 123	Spring	
CHY 461	Biochemistry	3	Grade of C or better in CHY 253 or by instructor permission	Fall	
CHY 462	Biochemistry Laboratory	2	Grade of C or better in CHY 254; CHY 461 (or concurrent)	Fall	
CHY 463	Biochemistry II	3	Grade of C or better in CHY 461	Spring	
CHY 464	Biochemistry Laboratory II (Capstone)	1-4	Grade of C or better in CHY 462; CHY 463 (or concurrent)	Spring	

**Select one from the following (including laboratory if appropriate): 3-5 CREDITS**

COURSE NUMBER	COURSE NAME	CREDITS	PREREQUISITES	OFFERED	Online
CHY 421	Inorganic Chemistry	3	Grade of C or better in CHY 115. CHY 371 (or concurrent) or permission of instructor	Every third semester	
CHY 377	Spectroscopy	3	Grade of C or better in CHY 233 and CHY 253. CHY 371 (or concurrent) or permission of instructor.	Every third semester (Fall 21)	
CHY 378	Instrumental Analysis Laboratory	2	Grades of C or better in CHY 233 and CHY 254; CHY 377 (or concurrent)	Every third semester (fall 21)	

**Choose one of the following sequences of courses: 3 – 8 CREDITS**

COURSE NUMBER	COURSE NAME	CREDITS	PREREQUISITES	OFFERED	Online
<b>Sequence 1</b>					
BIO 107	Biological Principles II: Evolution, Biodiversity, and Ecology	4.5	Grades of C- or higher in BIO 105 and BIO 106	Fall, Spring	
BIO 311	Microbiology	3	Grade of C- or higher in CHY 115 and grade of C- or higher in BIO 107 or BIO 113; or permission of the instructor.	Spring	
BIO 282	Microbiology Laboratory	2	Grade of C- or higher or concurrent enrollment in BIO 281 or BIO 311; or permission of instructor.	Spring	
<b>Sequence 2</b>					
BIO 107	Biological Principles II: Evolution, Biodiversity, and Ecology	4.5	Grades of C- or higher in BIO 105 and BIO 106	Fall, Spring	
BIO 305	Developmental Biology	3	Grade of C- or higher in BIO 107	Fall	
BIO 306	Developmental Biology Laboratory	2	Prior or concurrent registration in BIO 305	Fall	

<b>Sequence 3</b>					
BIO 107	Biological Principles II: Evolution, Biodiversity, and Ecology	4.5	Grades of C- or higher in BIO 105 and BIO 106	Fall, Spring	
BIO 201	Genetics	3	Grade of C- or higher in BIO 107	Fall	
BIO 409	Cell and Molecular Biology	3	CHY 115 and either grade of C- or higher in BIO 201 or concurrent enrollment in BIO 201	Spring	
BIO 410	Cell and Molecular Biology Laboratory	2	BIO 409 or concurrently	Spring	
<b>Sequence 4</b>					
BIO 107	Biological Principles II: Evolution, Biodiversity, and Ecology	4.5	Grades of C- or higher in BIO 105 and BIO 106	Fall, Spring	
BIO 109	Biological Principles III: Functional Biology [ <i>or BIO111 or BIO221</i> ]	3	Grade of C- or higher in BIO 107	Fall, Spring	
BIO 321	Neurobiology	3	Grade of C- or higher in BIO 109 BIO 111, BIO 221, or permission of instructor	Fall	
BIO 322	Neurobiology Laboratory	2	Prior or concurrent registration in BIO 321	Fall	
<b>Sequence 5</b>					
BIO 201	Genetics	3	Grade of C- or higher in BIO 105 or BIO 111; or permission of instructor.	Fall	

**NON-MAJOR REQUIREMENTS: 27 CREDITS**

<b>COURSE NUMBER</b>	<b>COURSE NAME</b>	<b>CREDIT S</b>	<b>PREREQUISITES</b>	<b>OFFERED</b>	<b>Online</b>
BIO 105	Biological Principles I: Cellular Biology	3	Grade of C or higher in any 100-level or higher MAT course, or appropriate placement test score	Fall, Spring, Summer	
BIO 106	Biological Principles I Laboratory	1.5	Grade of C- or higher or concurrent enrollment in BIO 105.	Fall, Spring, Summer	

BIO 107	Biological Principles II: Evolution, Biodiversity, and Ecology [ <i>note: required for all Biology course sequences except Sequence 5</i> ]	4.5	Grades of C- or higher in BIO 105 and BIO 106	Fall, Spring	
PHY 121	General Physics I	4	Prior completion of MAT 152 (highly recommended) or concurrent registration in MAT 152, or equivalent.	Fall, Spring, Summer	
PHY 114	Introductory Physics Laboratory I	1	Co-requisite: PHY 111 or PHY 121	Fall, Spring, Summer	
PHY 123	General Physics II	4	PHY 121 or equivalent and one semester of calculus.	Fall, Spring, Summer	
PHY 116	Introductory Physics Laboratory II	1	Co-requisite: PHY 112 or PHY 123	Fall, Spring, Summer	
MAT 152	Calculus A	4	MAT 140 or appropriate placement test score	Fall, Spring, Summer	Yes

At least 12 credit hours beyond the 100-level must be taken within the Chemistry Department at USM.

**MAJOR COURSES OVERLAPPING IN THE CORE:**

CORE AREA	COURSE NUMBER	COURSE NAME	REQUIRED BY MAJOR?
QR	MAT 152	Calculus A	Yes
SE	BIO 107	Biological Principles II: Evolution, Biodiversity, Ecology	As an option
SE	CHY 113 CHY 114	Principles of Chemistry I Laboratory Techniques I	Yes
SE	PHY 121 PHY 114	General Physics I Introductory Physics Laboratory I	Yes
CAP	CHY 464	Biochemistry Laboratory II	Yes
EL	CHY 113	Principles of Chemistry I	Yes
EL	CHY 233	Analytical Chemistry with Lab	Yes
EL	CHY 252	Organic Chemistry Lab I	Yes
EL	CHY 378	Instrumental Analysis Laboratory	As an option
EL	CHY 464	Biochemistry Laboratory II	Yes

**CORE CURRICULUM CODES**

**WRI 1** – Writing, Reading, & Inquiry 1 (ENG 100)

**WRI 2** – Writing, Reading, & Inquiry 2 (ENG 102)

**WRI 3** – Writing, Reading, & Inquiry 3 (SOC 210)

**QR** – Quantitative Reasoning

**CE** – Creative Expression

**SCA** – Socio-cultural Analysis

**CI** – Cultural Interpretation

**SE** – Science Exploration

**EISRC** – Ethical Inquiry, Social Responsibility, & Citizenship

**DIV** – Diversity

**INT** – International

**EL** – Engaged Learning

**CAP** – Capstone