

CREDITS REQUIRED IN MAJOR: 60

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: 33-36 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 371 | Quantum Chemistry | 3 | Grade of C or better in CHY 115, MAT 152, and PHY 123 | Fall | |
| CHY 373 | Chemical Thermodynamics | 3 | Grade of C or better in CHY 115, MAT 152, and PHY 123 | Spring | |

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|---------|-------------------------------------|-----|--|--------|--|
| CHY 374 | Chemical Thermodynamics Laboratory | 2 | Grade of C or better in CHY 116; CHY 373 (or concurrent) | Spring | |
| CHY 470 | Chemistry in Perspective (Capstone) | 1-4 | Grades of C or better in CHY 233, 253/254, and 373/374. Prerequisite: CHY 371 (or concurrent) and CHY 377/378 (or concurrent). | Spring | |

Choose two of the following six offerings (including laboratory if appropriate): 6-8 CREDITS

| COURSE NUMBER | COURSE NAME | CREDITS | PREREQUISITES | OFFERED | Online |
|---------------|--|---------|---|--------------------------------|--------|
| CHY 345 | Polymer Chemistry | 3 | Grade of C or better in CHY 253 and 373 | Fall (odd years) | |
| CHY 351 | Advanced Organic Chemistry | 3 | Grade of C or better in CHY 253 | Varies | |
| 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) | |
| CHY 385 | Pickles to Pints: Fermentation Science | 3 | CHY 233, CHY 251, BIO 281 or BIO 311, or instructor permission. | Fall | |
| 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 461 | Biochemistry | 3 | Grade of C or better in CHY 253 or by instructor permission | Fall | |

NON-MAJOR REQUIREMENTS: 21 CREDITS

| COURSE NUMBER | COURSE NAME | CREDITS | PREREQUISITES | OFFERED | Online |
|---------------|-------------------|---------|--|----------------------|--------|
| PHY 121 | General Physics I | 4 | Prior completion of MAT 152 (highly recommended) or concurrent registration in MAT 152, or equivalent. | Fall, Spring, Summer | |

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|---------|---|-----|--|----------------------|-----|
| PHY 114 | Introductory Physics Laboratory I | 1 | Co-requisite: 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 score on the College Level Math exam | Fall, Spring, Summer | Yes |
| MAT 153 | Calculus B | 4 | MAT 152 | Fall, Spring, Summer | Yes |
| PHY 261 | Computational Physics | 3 | PHY 121 and prior or concurrent registration in MAT 153, or permission of instructor | Spring | |
| | OR | | | | |
| | Math/Computer Science Course approved by Chemistry Department | 3-4 | Approval from Chemistry department and individual course prerequisites apply | Fall, Spring | |

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? |
|-----------|--------------------|--|--------------------|
| SE | CHY 113 CHY 114 | Principles of Chemistry I Laboratory Techniques I | Yes |
| CAP | CHY 470 | Chemistry in Perspective | Yes |
| QR | MAT 152 | Calculus A | Yes |
| SE | PHY 121 PHY 114 | General Physics I Introductory Physics Laboratory I | Yes |
| EISRC | CHY 385 | Pickles to Pints: Fermentation Science | As an option |
| EL | CHY 113 | Principles of Chemistry I | Yes |
| EL | CHY 252 | Organic Chemistry Lab I | Yes |

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|----|---------|----------------------------------|--------------|
| EL | CHY 233 | Analytical Chemistry with Lab | Yes |
| EL | CHY 378 | Instrumental Analysis Laboratory | As an option |
| EL | CHY 470 | Chemistry in Perspective | 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