## University Graduation Requirements:
- Complete the All-University Core Curriculum (AUCC)\(^1\) – See back side.
- Earn grades of “C” or higher in the major course requirements (listed below).
- Complete a minimum of 120 credits; a minimum of 42 upper-division credits (300-level +).
- Must have 30 upper-division credits at CSU.
- Fifteen of last 30 credits must be at CSU.
- Keep cumulative and AUCC courses GPA of 2.0+.

### Chemistry Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 111</td>
<td>General Chemistry I (F, S, SS, AUCC3A)</td>
<td>4</td>
<td>MATH 118</td>
</tr>
<tr>
<td>CHEM 112</td>
<td>General Chemistry I Laboratory (F, S, SS)</td>
<td>1</td>
<td>CHEM 111 or concurrent registration</td>
</tr>
<tr>
<td>CHEM 113</td>
<td>General Chemistry II (F, S, SS, AUCC3A)</td>
<td>3</td>
<td>CHEM 107 or CHEM 111; MATH 124</td>
</tr>
<tr>
<td>CHEM 114</td>
<td>General Chemistry II Laboratory (F, S, SS)</td>
<td>1</td>
<td>CHEM 108 or CHEM 112; CHEM 113 or concurrent registration</td>
</tr>
<tr>
<td>CHEM 345</td>
<td>Organic Chemistry I (F) (Recommended)</td>
<td>4</td>
<td>CHEM 113</td>
</tr>
<tr>
<td>CHEM 346</td>
<td>Organic Chemistry II (S) (Recommended)</td>
<td>4</td>
<td>CHEM 345</td>
</tr>
<tr>
<td>CHEM 347</td>
<td>Modern Organic Chemistry I (F, S, SS)</td>
<td>3</td>
<td>CHEM 113</td>
</tr>
<tr>
<td>CHEM 348</td>
<td>Modern Organic Chemistry II (F, S, SS)</td>
<td>3</td>
<td>CHEM 341</td>
</tr>
<tr>
<td>CHEM 349</td>
<td>Modern Organic Chemistry Lab (F, S, SS)</td>
<td>2</td>
<td>CHEM 114; CHEM 343 or concurrent registration</td>
</tr>
<tr>
<td>CHEM 350</td>
<td>Fundamentals of Inorganic Chemistry (S)</td>
<td>3</td>
<td>CHEM 113</td>
</tr>
<tr>
<td>CHEM 355</td>
<td>Introduction to Analytical Chemistry (F, S)</td>
<td>3</td>
<td>CHEM 113; concurrent registration in CHEM 334</td>
</tr>
<tr>
<td>CHEM 356</td>
<td>Quantitative Analysis Laboratory (F, S)</td>
<td>1</td>
<td>CHEM 114; concurrent registration in CHEM 335</td>
</tr>
<tr>
<td>CHEM 440</td>
<td>Advanced Organic Chemistry Laboratory (F, AUCC4A)</td>
<td>2</td>
<td>CHEM 344 or CHEM 356</td>
</tr>
<tr>
<td>CHEM 461</td>
<td>Inorganic Chemistry Laboratory (S)</td>
<td>2</td>
<td>CHEM 461 or concurrent registration</td>
</tr>
<tr>
<td>CHEM 474</td>
<td>Physical Chemistry I (F)</td>
<td>3</td>
<td>CHEM 113; MATH 261; PH 142; concurrent registration in CHEM 475</td>
</tr>
<tr>
<td>CHEM 475</td>
<td>Physical Chemistry Laboratory I (F)</td>
<td>1</td>
<td>CBE 333 or CHEM 334; CHEM 474 or concurrent registration or CBE 310 or concurrent registration</td>
</tr>
<tr>
<td>CHEM 476</td>
<td>Physical Chemistry II (S, AUCC4B)</td>
<td>3</td>
<td>CHEM 474</td>
</tr>
<tr>
<td>CHEM 493</td>
<td>Senior Seminar (varies, AUCC4C)</td>
<td>2</td>
<td>CHEM 474</td>
</tr>
</tbody>
</table>

### Other Requirements:

- Biological Science\(^2\) – choose 4 credits (including lab) from: BZ104/105, BZ110/111, BZ 120, LIFE 102 (AUCC3A)
  - 4
  - no
- MATH 160 Calculus for Physical Scientists (F, S, SS)
  - 4
  - MATH 124 and MATH 126 with minimum grade of B
- MATH 280A1 Applied Mathematics for Chemists I (F) (Recommended)
  - 4
  - MATH 160
- MATH 280A2 Applied Mathematics for Chemists II (S) (Recommended)
  - 4
  - MATH 280 or Math 161
- MATH 280A3 Applied Mathematics for Chemists III (F, S, SS)
  - 4
  - MATH 124; MATH 160
- MATH 261 Calculus for Physical Scientists II (F, S, SS)
  - 4
  - MATH 161
- PH 141 Physics for Scientists and Engineers I (F, S, SS, AUCC3A)
  - 5
  - MATH 126; MATH 160 or concurrent registration
- PH 142 Physics for Scientists and Engineers II (F, S, SS)
  - 5
  - PH 141; MATH 161 or concurrent registration
- Additional mathematics at 300+ level (Codes MATH, STAT or CS)
  - 3
  - Varies
- Advanced science electives\(^3\)
  - 10
  - Varies

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\(^1\) If you plan to attend Pharmacy School, you must take ECON101 or 202 or 204 from AUCC Category 3C. If you plan to attend Medical School, you should take at least 12 credits from AUCC Category 3C.

\(^2\) If you plan to attend Pharmacy School, you must take both BZ104/105 and BZ110/111.

\(^3\) Advanced science electives must be 300-level or higher. All 3++, 4++ and 5+++ courses offered by departments in the College of Natural Sciences apply. Courses in other departments may apply as well, please check with a chemistry advisor. If you plan to attend Veterinary School you must take MIP450. If you plan to attend Medical School, you must take BMS300, BMS301. If you plan to attend Pharmacy School, you must take MIP300/302, BMS300 (LIFE102 is the prerequisite). BMS301. Please, check with a Key Health Professions Advisor for additional professional schools admission requirements.

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**Important Note**

Remember that ONLY your Degree Progress Audit (DPA) will be used as the basis for awarding your degree. Always check your DPA on RAMWeb to keep on track for your degree.

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Modified December 10, 2015/CJO
All-University Core Curriculum (AUCC) Courses

Category 1. Basic Competencies.

A. Intermediate Writing (3 credits)

CO 150 College Composition
HONR 193 Honors Seminar (Must be enrolled in the University Honors Program)

B. Mathematics (3 credits)

MATH 117 College Algebra in Context I
MATH 118 College Algebra in Context II
MATH 124 Logarithmic and Exponential Functions
MATH 125 Numerical Trigonometry
MATH 126 Analytic Trigonometry
MATH 130 Math in the Social Sciences
MATH 133 Financial Mathematics
MATH 135 Patterns of Phenomena I
MATH 141 Calculus in Management Sciences
MATH 155 Calculus for Biological Scientists I
MATH 160 Calculus for Physical Scientists I
MATH 161 Calculus for Physical Scientists II
MATH 255 Calculus for Biological Scientists II

Category 2. Additional Communication.

A. Oral Communication (Before Fall 2008 only)

SPCM 200

B. Advanced Writing (3 credits)

BUS 300 Business Writing and Communication
CHEM 301 Advanced Scientific Writing: Chemistry
CO 300 Writing Arguments
CO 301A Writing in the Disciplines – Arts and Humanities
CO 301B Writing in the Disciplines – Sciences
CO 301A Writing in the Disciplines – Social Sciences
CO 301A Writing in the Disciplines – Education
CO 302 Writing Online
JTC 300 Professional and Technical Communication

Category 3. Foundations and Perspectives.

A. Biological/Physical Sciences (7 credits)

AA 100 Introduction to Astronomy
AA 101 Astronomy Laboratory
ANTH 120 Human Origins and Variation
ANTH 121 Human Origins and Variation Laboratory
BSPM 102 Insects, Science and Society
BZ 101 Humans and Other Animals
BZ 104 Basic Concepts of Plant Life
BZ 105 Basic Concepts of Plant Life Laboratory
BZ 110 Principles of Animal Biology
BZ 111 Animal Biology Laboratory
BZ 120 Principles of Plant Biology
CHEM 103 Chemistry in Context
CHEM 104 Chemistry in Context Laboratory
CHEM 107 Fundamentals of Chemistry
CHEM 108 Fundamentals of Chemistry Laboratory
CHEM 111 General Chemistry I
CHEM 112 General Chemistry I Laboratory I
FW 104 Wildlife Ecology and Conservation
GEOL 120 Exploring Earth: Physical Geology
GEOL 121 Introduction to Geology Laboratory
GEOL 122 The Blue Planet: Geology of Our Environment
GEOL 124 Geology of Natural Resources
HORT 100 Horticultural Sciences
LAND 220 Fundamentals of Ecology
LIFE 102 Attributes of Living Systems
LIFE 201A Introductory Genetics-Applied Genetics
LIFE 201B Introductory Genetics-Molecular
LIFE 220 Fundamentals of Ecology
MIP 101 Introduction to Human Disease
NR 120A Environmental Conservation
NR 130 Global Environmental Systems
NR 150 Oceanography
PH 110 Descriptive Physics
PH 111 Descriptive Physics Laboratory
PH 121 General Physics I
PH 122 General Physics II
PH 141 Physics for Scientists and Engineers I
PH 142 Physics for Scientists and Engineers II
WR 304 Principles of Watershed Management

B. Arts/Humanities (6 credits)

ART 100 Introduction to Visual Arts
D 110 Understanding Dance
E 140 The Study of Literature
E 232 Introduction to Humanities
E 242 Reading Shakespeare
E 270 Introduction to American Literature
E 276 Survey of British Literature I
E 277 Survey of British Literature II
ETST 240 Native American Cultural Expressions
HONR 392 Seminar (Must be enrolled in the University Honors Program)
LARA 201 Second Year Arabic I
LARA 201 Second Year Arabic II
LARA 250 Arabic Language, Literature and Culture in Translation
LCHI 200 Second Year Chinese I
LCHI 201 Second Year Chinese II
LCHI 250 Chinese Language, Literature and Culture in Translation
LFRE 200 Second Year French I
LFRE 201 Second Year French II
LFRE 250 French Language, Literature and Culture in Translation
LGFR 200 Second Year German I
LGFR 201 Second Year German II
LGFR 250 German Language, Literature and Culture in Translation
LJPN 200 Second Year Japanese I
LJPN 201 Second Year Japanese II
LJPN 250 Japanese Language, Literature and Culture in Translation
LRUS 200 Second Year Russian I
LRUS 201 Second Year Russian II
LRUS 250 Russian Language, Literature and Culture in Translation
LSPA 200 Second Year Spanish I
LSPA 201 Second Year Spanish II
LSPA 250 Spanish Language, Literature and Culture in Translation
MU 100 Music Appreciation
MU 111 Music Theory Fundamentals
MU 131 Introduction to Music History and Literature
PHIL 100 Appreciation of Philosophy
PHIL 103 Moral and Social Problems
PHIL 110 Logic and Critical Thinking
PHIL 120 History and Philosophy of Scientific Thought
SCPM 100 Communication and Popular Culture
SCPM 201 Rhetoric in Western Thought
TH 111 Introduction to Theatre

C. Social/behavioral Sciences (3 credits)

ANTH 100 Introductory Cultural Anthropology
AREC 202 Agricultural and Resource Economics
AREC 240 Issues in Environmental Economics
ECON 101 Economics of Social Issues
ECON 202 Principles of Microeconomics
ECON 204 Principles of Macroeconomics
ECON 212 Racial Inequality and Discrimination
ECON 240 Issues in Environmental Economics
EDUC 275 Schooling in the US
GR 100 Introduction to Geography
HDFS 101 Individual and Family Development
HONR 492 Senior Seminar (Must be enrolled in the University Honors Program)
JTC 100 Media in Society
POLS 101 American Government and Politics
POLS 103 Administrative Science
PSY 100 General Psychology
SOC 100 General Sociology
SOC 105 Social Problems
SOWK 110 Contemporary Social Welfare

D. Historical Perspectives (3 credits)

AMST 100 Self/Community in American Culture, Pre 1800
AMST 101 Self/Community in American Culture Since 1877
ANTH 140 Introduction to Prehistory
ETST 250 African American History
ETST 252 Asian American History
ETST 255 Native American History
HIST 100 Western Civilization, Pre Modern
HIST 101 Western Civilization, Modern
HIST 115 Islamic World to 1500
HIST 120 Asian Civilizations I
HIST 121 Asian Civilizations II
HIST 150 US History to 1876
HIST 151 US History since 1876
HIST 170 World History, Ancient-1500
HIST 171 World History, 1500-Present
HIST 250 African American History
HIST 252 Asian American History
HIST 255 Native American History
NR 320 Natural Resources History and Policy

E. Global and Cultural Awareness (3 credits)

AGRI 116 Plants and Civilizations
AGRI 270 World Interdependence-Population and Food
AM 250 Clothing, Adornment and Human Behavior
ANTH 200 Cultures in the Global System
E 238 20th Century Fiction
E 245 World Drama
ECON 211 Gender in the Economy
ETST 100 Introduction to Ethnic Studies
ETST 205 Ethnicity and the Media
ETST 253 Chicana/o History and Culture
ETST 256 Border Crossings: People/Politics/Culture
HORT 171 Environmental Issues in Agriculture
IE 116 Plants and Civilizations
IE 270 World Interdependence-Population and Food
IE 370 Model United Nations
LB 170 World Literatures to 1500
LB 171 World Literatures-The Modern Period
PHIL 170 World Philosophies
POLS 131 Current World Problems
POLS 232 International Relations
POLS 241 Comparative Government and Politics
SA 482 Approved Study Abroad Courses (Contact the Office of International Programs)
SOC 205 Contemporary Race-Ethnic Relations
SOC 171 Environmental Issues in Agriculture

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1 This requirement must be completed within the first 60 credits (CSU and Transfer) taken.
2 First-time students entering a college or university on or after July 1, 2008 must take an advanced writing course.
3 At least one course must have a laboratory component.
4 No more than three credits of intermediate foreign language (L** 200, L** 201) may be used toward this category.