CHEMISTRY, A.C.S., BIOCHEMISTRY EMPHASIS, COMPREHENSIVE MAJOR

(Code 100-009)

University Requirements

GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE

Credit Requirements

Minimum total for graduation: 120
Upper division credits (courses numbered 300 and higher): 39
Liberal Education Core: 36

Academic Concentrations: 2

Grade Point Requirements

Total: 2.00 average
Resident: 2.00 average
Major: 2.00 average
Minor: 2.00 average
Certificate: 2.00 average

University Residency Requirements

Minimum total: 30
Senior year: 23
Major, Standard, upper division in residence: 12
Major, Comprehensive, upper division in residence: 21
Certificate: 25 percent of credits

Procedures Required for Graduation

Obtain admission to the degree program and/or the College offering it.
Apply for graduation on CampS.

1. Certain programs exceed this minimum.
2. See special requirements in each College.

Applicability of Credits Toward Graduation

Junior College or Two-Year College Credits. A maximum of 72 semester credits earned in a junior college or two-year college will be accepted as degree credits at UW-Eau Claire.

Extension Credits. Credits earned in credit outreach courses offered by UW-Eau Claire are treated as resident credits. Credits earned in extension courses offered by other units of the University of Wisconsin System are treated as transfer credits. All other (non-UW) extension and correspondence credits are normally limited to one-fourth of the total required for graduation from any curriculum.

WTCS Credits. A maximum of 72 semester credits earned in college parallel programs at Madison Area Technical College, Milwaukee Area Technical College, Nicolet Area Technical College, or Chippewa Valley Technical College may be accepted as degree credits at UW-Eau Claire. A set number of general education courses will be accepted from other technical schools. Occupational and technical courses may also be considered for transfer if the quality and content of the course work from the technical college is judged to be comparable to course work at UW-Eau Claire. Refer to the Transfer Credit Wizard (https://my.uwec.edu/psp/PUBLIC/EMPLOYEE/HRMS/c/EAU_SS_CUSTOM.EAU_TRNCRDWZ.GBL) or contact the UW-Eau Claire Admissions Office for information about the current transfer policy.

USAFI Credit. UW-Eau Claire will accept up to 32 semester credits for work done through the United States Armed Forces Institute, under the provision for non-UW correspondence credit (see Extension Credits above).

Activity Credit (band, chorus, drama, KINS 100-184 courses) Students may count toward graduation no more than one credit of KINS 110-184 courses. Students may count toward graduation no more than four credits earned in any single activity course and no more than 12 credits resulting from any combination of activity courses (excluding KINS 110-184 courses).

Other Restricted Credits. For other University restrictions, see the following: Cooperative Education; Credit by Examination; Satisfactory/Unsatisfactory Registration; Transfer of Credits. College or departmental restrictions may also be placed on Independent Study (399-499 courses), Directed Study (395-495), and other types of credits.

APPLICABILITY OF CREDITS TOWARD GRADUATION

Satisfactory/Unsatisfactory

Total degree credit: maximum 12
Major, Standard: maximum 1 course
Major, Comprehensive: maximum 2 courses

Credit by Examination

Total degree credit: maximum ¼ of total
Major or minor: maximum ½ of total

Two-Year College Credits

Total degree credit: maximum 72 credits

Activity credit (band, chorus, drama, KINS 100-184)

Total KINS 100-184: maximum 1 credit
Total Band, chorus, drama: maximum 12 credits
Single course band, chorus, drama: maximum 4 credits

Extension credits

UW-System: no maximum
Other extension/ correspondence: maximum ¼ of total

USAFI

USAFI: maximum 32 credits

Liberal Education Core

The University of Wisconsin-Eau Claire measures learning outcomes to ensure that its graduates have achieved a liberal education and prepared themselves to contribute to a complex society. Upon graduation, each undergraduate will have met the four learning goals of our liberal education core and the 11 learning outcomes they comprise.
LIBERAL EDUCATION CORE REQUIREMENTS

Knowledge Goal

Knowledge Outcome 1 (K1): Natural Sciences
Two (2) learning experiences

One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 2 (K2): Social Sciences
Two (2) learning experiences

One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 3 (K3): Humanities
Two (2) learning experiences

Knowledge Outcome 4 (K4): Fine Arts
One (1) learning experience

Skills Goal

Skills Outcome 1 (S1): Written and Oral Communication
Two (2) learning experiences

One S1 must meet the University Writing Requirement

Skills Outcome 2 (S2): Mathematics
One (1) learning experience

One S2 to meet the University Mathematics Requirement

Skills Outcome 3 (S3): Creativity
One (1) learning experience

Responsibility Goal

Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity
Two (2) learning experiences

One R1 must satisfy Design for Diversity

Responsibility Outcome 2 (R2): Global Perspectives
One (1) learning experience

Responsibility Outcome 3 (R3): Civic and Environmental Issues
One (1) learning experience

Integration Goal

Integration Outcome 1 (I1): Integration
Two (2) learning experiences

Service-Learning Goal

Service-Learning
30 hours

College Degree Requirements
Bachelor of Arts or Bachelor of Science Degree (B.A./B.S.)

University Graduation Requirements. All candidates for degrees must fulfill the requirements for credits, curriculum, GPA, and University residency as specified in the section of this catalog titled University Graduation Requirements.

College Graduation Requirements: Grade Point Averages. All candidates for degrees in the College of Arts and Sciences must earn minimum resident and total GPAs of 2.00 in the major, the minor, and the certificate. The resident and total GPAs for the major are computed using all attempted credits applicable to the major including those offered by departments other than the major department. The resident and total GPAs for the minor and the certificate are computed similarly.

Major-Minor and Major-Certificate Requirements. A standard major (a minimum of 36 credits) must be supplemented by a minor (a minimum of 24 credits) or by a certificate (12 to 18 credits) to meet graduation requirements for completing a first and second degree program. No minor or certificate is required with a Comprehensive Major (60 or more credits) or with two majors of 36 or more credits each.

Certain degree programs, which include Comprehensive Majors, may require more than the minimum of 120 credits for graduation. Acceptable academic program combinations are determined at the college level. A major and a minor or a major and certificate or two majors (if available) may not be elected in the same department or program, except in the approved combinations listed here.

College Credits. Earn at least 90 credits in courses offered by the College of Arts and Sciences.

Bachelor of Arts Degree in the College of Arts and Sciences (B.A.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); foreign language competency at the 102 level. Foreign language competency may be met in one of two ways: (1) Achieve a score on the foreign language placement test that qualifies the student to enter the 201-level course in a foreign language. (2) Earn a grade of at least C (not C-) or a mark of S in a 102-level foreign language course (or AIS 112 or AIS 122 / LANG 122 or CSD 103).

Bachelor of Science Degree in the College of Arts and Sciences (B.S.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); mathematics competency at the MATH 111, MATH 112 or MATH 113 level. Mathematics competency can be met in one of three ways: (1) Achieve a score on the mathematics placement test that qualifies the student to enter MATH 114. (2) Earn a grade of at least C (not C-) or a mark of S in MATH 111, MATH 112, or MATH 113. (3) Achieve a satisfactory score on the MATH 112 competency test. This test may be attempted no more than two times.

Major Requirements
(Code 100-009)

The chemistry A.C.S. with biochemistry emphasis major is good preparation for students planning graduate study in biochemistry, biophysics or medicinal chemistry. In addition, this emphasis provides an exceptionally rigorous pre-medical or pre-pharmacy program with suitable biology electives.
Core Requirements for A.C.S., Liberal Arts and Teaching Chemistry Majors

A minimum of 61-semester credits, including:

**Chemistry Core**
Select one of the following: ¹

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 115</td>
<td>Chemical Principles</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 104</td>
<td>and General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 105</td>
<td>General Chemistry I Lecture</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 106</td>
<td>and General Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 109</td>
<td>and General Chemistry II with Lab</td>
<td></td>
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Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 213</td>
<td>Quantitative Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 218</td>
<td>Introduction to Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 325</td>
<td>Organic Chemistry I with Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 326</td>
<td>Organic Chemistry II with Laboratory</td>
<td>4</td>
</tr>
</tbody>
</table>

**Additional Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 231 &amp; 232</td>
<td>University Physics I and University Physics II</td>
<td>10</td>
</tr>
<tr>
<td>MATH 114 &amp; 215</td>
<td>Calculus I and Calculus II</td>
<td>8</td>
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</tbody>
</table>

Total Credits: 39

¹ Only six credits of the CHEM 103/CHEM 104 or CHEM 105/CHEM 106/CHEM 109 sequence are credited to the major.

Capstone Experience for Chemistry Majors

The capstone experience is met by completing CHEM 411 for chemistry with business emphasis majors, and by CHEM 420, CHEM 438, CHEM 453 or CHEM 497 for other chemistry majors.

Comprehensive Major: Chemistry, A.C.S., Biochemistry Emphasis

Requirements

In addition to the chemistry core and required mathematics/physics courses, students must complete the following course work:

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 433</td>
<td>Physical Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 452</td>
<td>Biochemistry I</td>
<td>8</td>
</tr>
<tr>
<td>&amp; CHEM 453</td>
<td>and Biochemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 454</td>
<td>and Biochemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 420</td>
<td>Advanced Synthesis Laboratory</td>
<td>4</td>
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<tr>
<td>&amp; CHEM 438</td>
<td>and Physical Analysis Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Bioinorganic Chemistry</td>
<td>3</td>
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<tr>
<td>or CHEM 361</td>
<td>Molecules and Medicine</td>
<td></td>
</tr>
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Elective(s)

Select a minimum of 3 credits:

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 304</td>
<td>Environmental Chemistry</td>
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</tr>
<tr>
<td>CHEM 318</td>
<td>Bioinorganic Chemistry</td>
<td></td>
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<tr>
<td>CHEM 361</td>
<td>Molecules and Medicine</td>
<td></td>
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<tr>
<td>CHEM 397</td>
<td>Chemical Literature and Communication</td>
<td></td>
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<tr>
<td>CHEM 399</td>
<td>Independent Study - Juniors</td>
<td></td>
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<tr>
<td>CHEM 401</td>
<td>Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 411</td>
<td>Survey of Industrial Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 426</td>
<td>Modern Organic Chemistry</td>
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</table>

Total Credits: 22