CHEMISTRY, A.C.S. CERTIFIED, COMPREHENSIVE MAJOR: 100-007

In Workflow
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9. Reg Cat (none)

Approval Path
1. Tue, 14 Sep 2021 03:07:07 GMT
   James Phillips (phillija): Rollback to Initiator
2. Tue, 14 Sep 2021 03:08:02 GMT
   James Phillips (phillija): Approved for CHEMISTRY Chair
3. Fri, 24 Sep 2021 15:12:19 GMT
   Margaret Cassidy (cassidml): Approved for AS Dean PreCurrComm (PIM)
   Margaret Cassidy (cassidml): Approved for AS Dean (PIM)

History
1. Jan 8, 2021 by barniejm
2. Feb 10, 2021 by barniejm
3. Mar 8, 2021 by Karen Cauble (caubleks)

Date Submitted: Tue, 14 Sep 2021 03:07:32 GMT

Viewing: 100-007 : Chemistry, A.C.S. Certified, Comprehensive Major
Last approved: Mon, 08 Mar 2021 22:45:14 GMT
Last edit: Fri, 17 Sep 2021 22:57:02 GMT
Changes proposed by. James Phillips (phillija)

Preparer(s)
Preparer Name:
Jim Phillips

Program Level
Undergraduate

Program Type
Emphasis, Major

Degree Type
BA/BS

Type of Change
Modification

Name of Program
Chemistry, A.C.S. Certified, Comprehensive Major

Major Type
Comprehensive

College
Arts and Sciences
Effective Catalog Year
2022-2023

Is this content intended to be shared across multiple programs/catalog pages?
No

Program Requirements (Includes Course Lists):

Program Requirements (Includes Course Lists):

Core Requirements for A.C.S. and Liberal Arts Chemistry Majors
A minimum of 63-semester credits, including:

<table>
<thead>
<tr>
<th>Code</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 105 &amp; CHEM 106 &amp; CHEM 109</td>
<td>General Chemistry I Lecture and General Chemistry I Laboratory and General Chemistry II with Lab</td>
<td></td>
</tr>
</tbody>
</table>

Required:

- CHEM 213 | Quantitative Analysis | 4
- CHEM 218 | Introduction to Inorganic Chemistry | 3
- CHEM 325 | Organic Chemistry I with Laboratory | 4
- CHEM 326 | Organic Chemistry II with Laboratory | 4

Additional Required Courses

- PHYS 231 | University Physics I | 10
  & PHYS 232 | University Physics II |
- MATH 114 | Calculus I | 8
  & MATH 215 | Calculus II |

Total Credits: 39

Only six credits of the 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., General Emphasis

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 344</td>
<td>Modern Applied Separations and Spectrometry</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 352</td>
<td>Fundamentals of Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 433</td>
<td>Physical Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 434</td>
<td>Physical Chemistry II</td>
<td>4</td>
</tr>
</tbody>
</table>

Two of the following: 4-5

- CHEM 420 | Advanced Synthesis Laboratory |
- CHEM 438 | Physical Analysis Laboratory |
- CHEM 453 | Biochemistry Laboratory |

Electives
Take 2 courses from the following. At least one of the courses must be CHEM 318, CHEM 401, CHEM 426, or CHEM 491

- CHEM 304 | Environmental Chemistry |
- CHEM 318 | Bioinorganic Chemistry |
- CHEM 361 | Molecules and Medicine |
- CHEM 401 | Inorganic Chemistry |
- CHEM 411 | Survey of Industrial Chemistry |
- CHEM 426 | Modern Organic Chemistry |
- CHEM 460 | Polymer Chemistry |
### Additional Program Requirements (If Applicable)

### Additional Admission Requirements Unique to Program (If Applicable)

### Other Catalog Notes/Restrictions (If Applicable)

### Rationale

#### Brief Change Rationale

We are adding “certified” to send a clear message to students that the degree is certified by our professional society so as to make the major more attractive to students concerned with employability (surprisingly, many students and parents fail to see the applicability and employability of the chemistry/biochemistry degree).

We are removing the “general emphasis” language because we no longer need as much distinction from other options; we deleted two “tracks” a few years ago during the program array contraction, leaving only the “pure” ACS chemistry degree and its “Biochemistry Emphasis” counterpart for comprehensive chemistry majors. The tag “general emphasis” is somewhat contradictory, and seems to lack appeal for recruiting students to the major program.

CHEM 103 and CHEM 104 have been deleted from the curriculum.

#### Reviewer Comments

**James Phillips (phillija) (Tue, 14 Sep 2021 03:07:07 GMT):** Rollback: typos

Key: 366