B.S. in Chemistry  
Concentration IV: American Chemical Society Certified – Chemical Education Program*

Core Requirements for All Concentrations:  
1, **

1. CHEM 131  General Chemistry I  (F,Sp) 3
2. CHEM 132  General Chemistry II  (Sp,Su,F) 3
3. CHEM 135L  Special General Chemistry Lab I  (F) 1
4. CHEM 136L  Special General Chemistry Lab II  (Sp) 2
5. CHEM 241  Organic Chemistry I  (F) 3
6. CHEM 242  Organic Chemistry II  (Sp) 3
7. CHEM 270  Inorganic Chemistry I  (Sp) 3
8. CHEM 287L  Integrated Inorganic/Organic Lab I  (F) 2
9. CHEM 288L  Integrated Inorganic/Organic Lab II  (Sp) 2
10. CHEM 331  Physical Chemistry I  (Sp) 3
11. CHEM 351  Analytical Chemistry  (F) 4
12. CHEM 361  Biochemistry I  (F) 3
13. CHEM 365  Physical Chemistry II  (F) 3
14. MATH 235  Calculus I  (F,Sp) 4
15. MATH 236  Calculus II  (F,Sp) 4
16. PHYS 240  University Physics I  (F,Sp) 3
17. PHYS 250  University Physics II  (Sp,F) 3
18. PHYS 240L  General Physic Lab I  (F) 1
19. PHYS 250L  General Physic Lab II  (Sp) 1

Additional ACS Chemical Education Program Requirements:  

- 400 lab hours required for all ACS concentrations.
- 345 hrs met by Core and Program courses in this concentration.
- At least 55 additional lab hours from list of Electives.

**These courses may NOT be taken credit / no credit

- CHEM 131L and 132L (2 credits) may substitute for 135L and 136L
- MATH 231 and 232 (6 credits) may substitute for MATH 235
- PHYS 140L-150L prior to Fall 2018

*It is the student’s responsibility to meet any required co- or pre- requisites.
**for ACS Chem Ed Program, Core Requirements must be completed with a C- or better, PSYC 160 with a C or better, other COE courses with B- or better.

Updated Jan 2018

---

It is necessary to be admitted to the teacher education program prior to enrolling in professional education courses. This is typically done during the sophomore year. Students should consult regularly with the Secondary Education Science Advisor (Dr. xxxxxxxxx) and the Chemical Education Advisor (Dr. Barbara Reisner).

Pre-Professional Studies in Education**
See COE requirements:  

Freshman / Sophomore Year

1. PSYC 160  Life Span Human Development  (F,Sp) 3
2. EDUC 300  Foundations of American Education(F,Sp) 3

Practicum I (7 credits, recommended that these be taken as a block)

1. EDUC 310  Teaching in a Diverse Society  (F,Sp) 3
2. MSSE 370  Gen Instructional Methods for Grades 6-12  (F,Sp) 3
3. MSSE 371  Clinical Experience in Adolescent Ed(F,Sp) 1

Practicum II (9 credits, must be taken as a block)

1. MSSE 470  Teaching Methods Course  (F,S) 3
2. MSSE 471  Content Area Field Experience in Middle Schools  (F,Sp) 3
3. READ 440  Literacy-Based Learning in Secondary Education  (F,S) 3

Students should apply for admission to the graduate program early in their senior year.

Master of Arts in Teaching Professional Studies in Education (Graduate)

Consult College of Education MAT Requirements. Courses will begin the summer after the B.S. in Chemistry is awarded. All undergraduate coursework must be completed prior to enrollment in the graduate program.
B.S. in Chemistry
Concentration IV: American Chemical Society Certified – Chemical Education Program*

Electives
The well-prepared student is encouraged to take as many of the additional departmental offerings as possible as electives with particular attention being given to junior and/or senior research projects.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Lab Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 280</td>
<td>Alternative Lower-Div Chem Experience (V)</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>CHEM 353</td>
<td>Environmental Chemistry (Sp,odd)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 354</td>
<td>Environmental Chemistry Field Camp (Su)</td>
<td>3 (50)</td>
<td></td>
</tr>
<tr>
<td>CHEM 355</td>
<td>Geochemistry of Natural Waters (F)</td>
<td>3 (22)</td>
<td></td>
</tr>
<tr>
<td>CHEM 362</td>
<td>Biochemistry II (Sp)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 366L</td>
<td>Biochemistry Laboratory (Sp)</td>
<td>2 (90)</td>
<td></td>
</tr>
<tr>
<td>CHEM 375</td>
<td>Intro to Material Sciences (F)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 390</td>
<td>Problems in Chemistry (F,Sp)</td>
<td>1-3 (45-135)</td>
<td></td>
</tr>
<tr>
<td>CHEM 395</td>
<td>Perspectives in Chemistry (F odd)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEM 440</td>
<td>Intermediate Organic Chemistry (F even)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 445</td>
<td>Polymer Chemistry (F odd)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 445L</td>
<td>Polymer Chemistry Lab (F odd)</td>
<td>1 (45)</td>
<td></td>
</tr>
<tr>
<td>CHEM 450</td>
<td>Nuclear and Radiation Chemistry (Sp even)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 450L</td>
<td>Nuclear &amp; Radiation Chemistry Lab (Sp even)</td>
<td>1 (45)</td>
<td></td>
</tr>
<tr>
<td>CHEM 455</td>
<td>Lasers &amp; Applications to Phys Sci (V)</td>
<td>3 (22)</td>
<td></td>
</tr>
<tr>
<td>CHEM 470</td>
<td>Inorganic Chemistry II (F)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 470</td>
<td>Selected Topics in Chemistry (V)</td>
<td>1-4</td>
<td></td>
</tr>
<tr>
<td>CHEM 497</td>
<td>Undergrad Chemical Research (F,Sp)</td>
<td>2-4 (90-180)</td>
<td></td>
</tr>
<tr>
<td>CHEM 499</td>
<td>Honors (F,Sp)</td>
<td>6 (270)</td>
<td></td>
</tr>
</tbody>
</table>

(F = Fall, Sp = Spring, Su = Summer, V = varied, all are subject to change)

*It is the student’s responsibility to meet any required co- or pre- requisites.
**for ACS Chem Ed Program, Core Requirements must be completed with a C- or better, PSYC 160 with a C or better, other COE courses with B- or better

Updated Jan 2018