



|   |  |             |             |             |             |             |             |             |                                 |                                   |                             |   |                        |
|---|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------------|-----------------------------------|-----------------------------|---|------------------------|
|   | and of the importance of inclusive excellence in chemistry.  |             |             |             |             |             |             |             |                                 |                                   |                             |   |                        |
| 7 | Students will demonstrate an understanding of the connections between chemistry and other science disciplines. | I           | N/A         | N/A         | R           | R           | R           | M           | M                               | M                                 | M                           | R                                       | R                      |
| 8 | Students will have a successful transition to their post-college activities.                                   | I           | I           | R           | R           | R           | R           | M           | M                               | M                                 | R                           | R                                       | R/M                    |
|   |  | Chem<br>331 | Chem<br>332 | Chem<br>335 | Chem<br>343 | Chem<br>344 | Chem<br>345 | Chem<br>346 | Chem 350<br>NMR<br>Spectroscopy | Chem 352<br>Organic<br>Mechanisms | Chem 352<br>Organometallics | Chem<br>354<br>Comp<br>Chem<br>Modeling | Chem 490<br>(Research) |

1 Students will demonstrate knowledge in organic chemistry and at least two of analytical, biochemistry, inorganic,



# Program Learning Outcomes: Assessment Tools

Program Name: Chemistry B.A.

Date: 10-4-2021

| Program Learning Outcomes<br>Knowledge, skill, or behavior students can demonstrate upon program completion                              | Measurement Tool   | Timeline/Frequency of Assessment  | Target  | a2:rt o-ata Review  |
|--|--|---|---|---|
| <b>1</b> Students will demonstrate knowledge in organic chemistry and at least two of analytical, biochemistry, inorganic, and physical. | ACS Exams:<br>Chem 125/6 and 131 Gen Chem<br>Chem 231 Organic<br>Chem 314 Biochem<br>Chem 322 Inorganic<br>Chem 331 Analytical<br>Chem 344 Physical Chem | Exams will be given every year, and subdisciplines will report their data (class averages) once every five years (see Review column on right for subdisciplinary reporting schedule). | 125/6: average above 50%ile<br>231: average above 80%ile<br>314: average above 65%ile<br>322: average above 60%ile<br>331: average above 80%ile<br>343: median above 60%ile<br>344: median above 70%ile | Cycle through subdisciplines (ABIOP12.7o r nBTm( 3)8.7 (3)-4.7 (1 A)2.7 (c)-2 |

|   |   |   |  |   |  |
|---|---|---|--|---|--|
|   |   | Chem 322: Inorganic lit discussions (reading the lit)<br>Chem 345/346: PChem - Data analysis for lab reports  |  | demonstrates their chem info skills<br>322: All students will successfully answer questions linked to literature discussion<br>345/346: All students will pass lab demonstrating proficiency in basic computer skills | 2024 Organic<br>2025 Physical              |
| 4 | Students will demonstrate an ability to conduct experiments, as well as analyze and interpret data. | Chem 324: Inorganic proposal for research project and report<br>Chem 315: Biochem lab CUREs - students address written questions about design and propose/choose substrates to test for enzyme activity | Subdisciplines will report results every five years. | 324: All students write novel and lit-supported proposal<br>315: 90% of students produce workable protein purification and assay procedure  | Review during sub disciplinary review year |

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Students will show proficiency in scientific communication including laboratory notebooks, laboratory reports, journal

4 (o)12g8.7 (r)5 (a)0.6 (f)3 (i)7.3 (p)5.e1 (t)5.6 (ep)5.3 (o)-0 (ur)11 (na)32.3 (4 (7 (n a)12.3 (nd)5.3 ( )JJO -1 ( r)11 (ep)5.3s1 (i)7.4r (1)92.4 (y).4 (e p)5 (ud)5.3s3 (i)7.4 (4 (7 ((i)7.4 (e(t)5.6 1i)1.3

Summer Research: Responsible  
conduct of research workshop  
Department DEI work: Faculty will  
include examples of diverse  
scientists and their work in their  
courses; the department will plan  
informal opportunities (or "un-  
office hours") to gather with  
students in settings that are  
especially welcoming to  
underrepresented students

students successfully complete one  
memo (of two possible memos)  
that includes the critical  
comparison of two analytical  
techniques and makes  
recommendation