

## PROPOSAL TO THE SENATE COMMITTEE ON EDUCATIONAL POLICY TO ESTABLISH OR MODIFY AN UNDERGRADUATE MINOR

**Title of the proposed minor:** Revision to Chemistry Minor

**Sponsoring unit(s):** Department of Chemistry; Professor Scott K. Silverman, Associate Head of Budget and Operations, Department of Chemistry, (217) 244-4489, [sks@illinois.edu](mailto:sks@illinois.edu)

**College contact:** Karen Carney, Associate Dean, College of Liberal Arts and Sciences, [kmcarney@illinois.edu](mailto:kmcarney@illinois.edu), 333-1350

### **Brief description of the program of study and Justification:**

The existing Chemistry Minor requirements are not explicit with regard to either General Chemistry or Organic Chemistry, which the Chemistry faculty (as expressed by our department's Courses and Curricula Committee) feel is a deficiency in the existing Chemistry Minor. In addition, the existing Chemistry Minor allows students to count up to 10 hours of independent study or undergraduate research credit (CHEM 197, 199, 297, 397, 497, 499) towards the Chemistry Minor, which is sometimes problematic due to variation in how such credit is approved. The revised Chemistry Minor requirements address both of these deficiencies by setting specific requirements for both General Chemistry and Organic Chemistry, while retaining a meaningful requirement for more advanced (300- and 400-level) Chemistry courses. The Department feels that this satisfies the expectation that the Chemistry Minor should be "a comprehensive study in a single discipline", Chemistry. In addition, the revised Chemistry Minor requirements do not allow independent study or undergraduate research credit to count towards the Chemistry Minor.

### **Budgetary and Staff Implications:**

- a. Additional staff and dollars needed
- b. Internal reallocations (e.g. change in class size, teaching loads, student-faculty ratio, etc.)
- c. Effect on course enrollment in other departments and explanations of discussions with representatives of those departments
- d. Impact on library, computer use, laboratory use, equipment, etc.

There are no particular budgetary or staff implications from this proposal. We anticipate no additional staff and dollars needed. We anticipate no particular internal reallocations in terms of change in class size, teaching loads, etc. There should be no effect on course enrollment in other departments, There should be no impact on library, computer, or laboratory use.

**Requirements:** *list the hours and course requirements for the proposed minor. The minor should consist of at least 16 and no more than 21 hours of course work. At least six hours of the minor must be*

advanced (300 or 400) level courses. If the proposed minor fails to meet these criteria, please provide a reason.

Hours Requirements	
8-10	CHEM 102 - General Chemistry I, and CHEM 103 - General Chemistry Lab I, and CHEM 104 - General Chemistry II, and CHEM 105 - General Chemistry Lab II or CHEM 202 - Accelerated Chemistry I, and CHEM 203 - Accelerated Chemistry Lab I, and CHEM 204 - Accelerated Chemistry II, and CHEM 205 - Accelerated Chemistry Lab II
3-4	CHEM 232- Elementary Organic Chemistry I or CHEM 236—Fundamental Organic Chem I
2	CHEM 233 - Elementary Organic Chem Lab I or CHEM 237—Structure and Synthesis
6-8	Choose two 3-4 credit hour courses from the List of Advanced Courses Approved for Chemistry Minor Credit (300- and 400-level Chemistry courses, not research or independent study, 3 hours credit or more) <sup>1</sup>
19-24	Total hours

1. The following courses may not be used to complete the minor: CHEM 315, 397, 420, 445, 447, 492, 494, 496, 497, and 499.

The “List of Advanced Courses Approved for Chemistry Minor Credit” simply consists of all 300- and 400-level Chemistry courses that are not research or independent study

and that constitute 3 hours or more of credit. Note that independent study or research courses are explicitly excluded from this list, as indicated in the table footnote above. The listing of these qualifying 300- and 400-level Chemistry courses is long and consists of all relevant courses as listed in the campus course catalog (<http://catalog.illinois.edu/courses-of-instruction/chem/>).

The Department acknowledges the expectation that the Minor should consist of “at least 16 and no more than 21 hours of coursework”. The most likely way that a student will satisfy the revised Chemistry Minor requirements is by taking the CHEM 102–105 (General Chemistry) and CHEM 232/233 (Elementary Organic Chemistry) courses, which require  $8 + 3 + 2 = 13$  hours of coursework. This student’s remaining Chemistry Minor hours will be for the two required advanced (300- or 400-level) courses. If these are taken as two 3-hour courses, then the total will be  $13 + 6 = 19$  hours. If these are taken as two 4-hour courses, then the total will be  $13 + 8 = 21$  hours. ***Therefore, most students who seek the Chemistry Minor will take 19–21 hours to satisfy the revised Chemistry Minor requirements.*** The only way that a student will exceed 21 hours to satisfy the revised Chemistry Minor requirements is by choosing to take either the CHEM 202-205 (Advanced General Chemistry) or CHEM 236/237 (Fundamental Organic Chemistry) series, which are more advanced than the CHEM 102–105 and CHEM 232/233 courses, respectively. The Department anticipates that only a small fraction of students who seek the Chemistry Minor will wish to take the more advanced courses, and we don’t want to exclude such students from the Chemistry Minor by listing only the less advanced courses as part of the requirements.

**Prerequisites for the minor:** There are no separate prerequisites for either the existing or revised Chemistry Minor, other than the prerequisites for the individual courses required for the Minor.

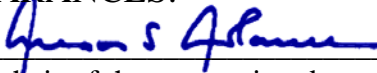
**Expected enrollment in the minor:** The current enrollment in the Chemistry Minor is approximately 250 students, which includes students of all years (freshman, sophomore, junior, senior). Historically, the number has been between 250 and 300 students. With the revised Chemistry Minor requirements, we expect the enrollment in the Chemistry Minor to stay the same or perhaps decrease slightly, in the context of no longer allowing independent study or research courses to contribute to the hours for the Minor requirement.

**Admission to the minor and Minor advisor:** Currently, students who are interested in the Chemistry Minor are made aware (through the SCS Academic Advising office, <http://publish.illinois.edu/scsadvising/>, which advises these students) of the Chemistry Minor requirements. If a student satisfies these requirements, then they have earned the Chemistry Minor. The Department does not currently limit enrollment in the Chemistry Minor. With the revised Chemistry Minor requirements, nothing will change in regard to either of these aspects.

**Certification of successful completion:** LAS is charged with certifying completion of minors as their requirements are outlined in the official Programs of Study. LAS encodes DARS to reflect these requirements, and then the Admissions and Records Officers (AROs) certify completion by adding the minor to the student's graduation record, to be reported to the Office of the Registrar. The revision to the Chemistry Minor requirements will not change this process.

**Proposed Effective Date:** Fall 2015

CLEARANCES:

 9 Jul 14  
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Head/chair of the sponsoring department or unit:

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Director, School of Chemical Sciences:

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Dean of the college of the sponsoring department or unit:

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Chair, Senate Educational Policy Committee:

### Statement for the Programs of Study Catalog:

Hours	Requirements
8-10	CHEM 102 - General Chemistry I, and CHEM 103 - General Chemistry Lab I, and CHEM 104 - General Chemistry II, and CHEM 105 - General Chemistry Lab II or CHEM 202 - Accelerated Chemistry I, and CHEM 203 - Accelerated Chemistry Lab I, and CHEM 204 - Accelerated Chemistry II, and CHEM 205 - Accelerated Chemistry Lab II
3-4	CHEM 232- Elementary Organic Chemistry I or CHEM 236—Fundamental Organic Chem I
2	CHEM 233 - Elementary Organic Chem Lab I or CHEM 237—Structure and Synthesis
6-8	Choose two 3-4 credit hour courses from the List of Advanced Courses Approved for Chemistry Minor Credit (300- and 400-level Chemistry courses, not research or independent study, 3 hours credit or more) <sup>1</sup>
19-24	Total hours

1. The following courses may not be used to complete the minor: CHEM 315, 397, 420, 445, 447, 492, 494, 496, 497, and 499.

**Appendix A:**  
Comparative Table of Proposed Changes

<b>Current Hours</b>	<b>Current Requirements</b>	<b>Proposed Hours</b>	<b>Proposed Requirements</b>
<b>10</b>	Maximum of 10 hours of Chemistry courses numbered 205 or lower.	<b>8-10</b>	CHEM 102- General Chemistry I, and CHEM 103 - General Chemistry Lab I, and CHEM 104 - General Chemistry II, and CHEM 105 - General Chemistry Lab II
			<b>or</b>
			CHEM 202 - Accelerated Chemistry I, and CHEM 203 - Accelerated Chemistry Lab I, and CHEM 204 - Accelerated Chemistry II, and CHEM 205 - Accelerated Chemistry Lab II
<b>6</b>	Minimum of 6 hours of 300- or 400-level Chemistry and/or Biochemistry courses	3-4	CHEM 232- Elementary Organic Chemistry I or CHEM 236—Fundamental Organic Chem I
<b>4</b>	Chemistry courses selected in consultation with adviser	<b>2</b>	CHEM 233 - Elementary Organic Chem Lab I or CHEM 237—Structure and Synthesis
		<b>6-8</b>	Choose two 3-4 credit hour courses from the List of Advanced Courses Approved for Chemistry Minor Credit (300- and 400-level Chemistry courses, not research or independent study, 3 hours credit or more) <sup>1</sup>
<b>20</b>	<b>Total</b> (CHEM 101 may not count in the 20 hours)	<b>19-24</b>	<b>Total Hours</b>
			1. The following courses may not be used to complete the minor: CHEM 315, 397, 420, 445, 447, 492, 494, 496, 497, and 499.