Honors Policy Prior to Spring 2022

Departmental Honors in Chemistry involves demonstrating excellence in both **depth** and **breadth** of the discipline, through accomplishments on a specific research project and achievement in studying the principle areas of chemistry knowledge.

Students wishing to pursue Senior Honors research in Chemistry should apply to the Chemistry Department Chair no later than April 15 of the Spring semester of their Junior year. Admission into the Honors program requires the approval of the Chemistry Department and the College. College minimum academic requirements (from the Course of Study) are:

- a cumulative GPA of at least 3.2
- a cumulative Chemistry GPA of at least 3.33

In addition, the Department expects:

- no grade of D or F in a Chemistry course

The Honors Program consists of five parts: (all specific dates will be given during the Fall semester of the Senior year)

Requirements

A. Coursework. In addition to the minimum requirements for the Chemistry major, Honors students in Chemistry must complete CHEM 256: Biochemistry. Honors students are encouraged to enroll in CHEM 475 in order to work on learning about the primary literature related to their research project. An Honors candidate who is not a Chemistry major must complete the same lecture courses (but not necessarily lab courses) required for the Chemistry major: 231, 232, 335, 341, and 336 or 343, and one additional 300-400 level course.

B. Research . Honors research (CHEM 497-498) builds upon an *established* research project conducted with a faculty mentor in the Chemistry Department. Students accepted by the department to pursue Senior Honors research are those who have already demonstrated research proficiency and who show a strong potential for successfully completing the program. Work completed in the senior year, however, is the emphasis of the thesis and evaluation. Prior to the senior year, candidates must successfully complete *at least* two semesters (or one semester and one summer) of research at Kenyon:

- Chemical Research - CHEM 375 and/or 376 (usually taken in the Junior year)
- Summer Research at Kenyon during a summer preceding the Senior year is strongly recommended.

Senior Honors - CHEM 497-498. Expectations for Senior Honors research are:

1. at least 10-12 hours of lab work per week, with times recorded and submitted;
2. regular participation in group meetings or discussions with your faculty mentor;
3. proper recording of experimental results (lab notebook, data files, etc.);
4. searching and reading relevant primary and secondary literature on your research topic;
5. presenting (in the Fall semester) a 15-min summary on your Honors project, *briefly* describing general objectives and background, summarizing your results-to-date, and explaining experiments needed to complete the thesis;
6. presenting your research as a poster or talk to a scientific audience outside of Kenyon.
7. regularly attending chemistry department colloquia.

These research requirements are evaluated to determine the grade in CHEM 497-498, which is a year course with a single grade.

C. Thesis. The thesis is based on the research project and is submitted to an outside examiner for review. The Introduction section of the Honors thesis, reviewing relevant background material and primary literature articles relating to the project, must be submitted to the Department at the end of January (a complete draft is due before leaving campus in the Fall semester); we encourage Introduction sections to be 25 pages or less. A full thesis also includes sections describing Experimental methods, Results and Discussion, and includes appropriate references. A minimum of 50 pages is normally expected. Students should consult their faculty mentors on questions of style and format. Eight copies of the full thesis must be submitted to the Department by the end of April.

A final corrected copy of the thesis, with any changes requested following the oral exam, must be submitted to the department in mid-May. A copy must also be submitted to Olin Library. Be sure to follow the Kenyon College guidelines for the format of an Honors Thesis.

D. Written Examination. Honors students must satisfactorily complete a written examination covering material from the principle areas of our curriculum. This examination has six parts in the following areas:

- Organic Chemistry
- Biochemistry
- Physical Chemistry
- Instrumental Analysis
- Inorganic Chemistry
- Quantum Chemistry

Students choose to answer 5 of the 6 parts of the exam. The examination will be held near the end of April, after the thesis is due and before the Oral Exam.

E. Oral Examination. An oral examination is held at the end of the Spring semester. The candidate begins with a 30-minute oral presentation on their thesis research. If the candidate wishes, this talk can be open to the public. The oral presentation is followed by the oral examination, which is closed to the public and is conducted by an outside examiner along with the department faculty. The oral exam covers material from the thesis and (possibly) the written examination. Thus, students are strongly encouraged to prepare for the oral examination following the written examination.

The awarding of "Honors" (or "High Honors" or "Highest Honors") is decided by the outside examiner in consultation with the department faculty. The decision is based on: (1) the quality of the thesis, (2) lab productivity, (3) the oral summary and examinations, and (4) the written exam. Meeting deadlines set for the various parts of the program are also considered.

Senior Capstone for Honors Candidates

Students working toward Senior Honors simultaneously complete requirements for the Senior Capstone in Chemistry or Biochemistry. The 30- minute oral presentation of the thesis research (in May) counts as the oral portion of the Senior Capstone, and the Introduction section of the Honors Thesis (submitted in January) counts as the written part of the Senior Capstone. A grade for the Senior Capstone (passed, or passed with distinction) is a separate grade from Honors. In addition, Honors candidates must attend all of the regular Senior Capstone presentations during the Spring semester.

If the Honors Program Is Not Completed

The Kenyon College *Course of Study* states that "at any time the Department may deny the student the opportunity to continue in honors." Also, some students elect not to complete the Honors Program for various reasons. The Department encourages students to consider the expectations and rewards of completing the program before the senior year, and we would like all students to complete the program. An Honors candidate who does not meet the expectations for the Fall semester will need to drop CHEM 498 and will receive a grade for CHEM 497 and will complete the standard Senior Capstone (see separate guidelines) at the beginning of the Spring semester. The research project could be continued for credit by enrolling in CHEM 376. An Honors candidate who does not meet the expectations during the Spring semester will not receive a degree "with Honors", but will receive a grade for CHEM 497-498 that reflect the effort for the year. To satisfy the Senior Capstone in Chemistry in this case, the student must give a 30- minute oral presentation on their project (background, results and analysis) before the end of the Spring semester.

Students graduating with Honors in Chemistry often state that it was the part of their time at Kenyon about which they are most proud. The Chemistry Department shares this pride and encourages students to consider the path toward Honors and discuss with us the challenges and rewards.