Departmental Assessment Meeting: Conversation guide

Please have a conversation with your department about the following issues, complete the Departmental Assessment Meeting Report, and return it to Megan Leonard or Sasha Pfau no later than **March 31, 2017**.

Summary of past decisions

- In the time since the last HLC visit (08-09), what changes have been made in your department (new courses, changes to existing courses, restructuring major, etc)?

Our curriculum generally has been keeping up with national trends. Beyond expanding the number of sections we offer due to College growth, our curriculum is relatively stable with few changes year to year. Since 2008 we have:

- created one course of Advanced Biochemistry (Chem335, 2008) by rededicating resources from our only advanced topics course
- created a quantitative analysis course Environmental Analysis (Chem280, 2010) to replace a course lost in the conversion to semesters (2002) and to maintain the introductory/advanced course sequence required by our national certification (American Chemical Society- Committee on Professional Training); this also supports the Environmental Studies major
- created one section of Accelerated General Chemistry (Chem150, 2013) to serve our best prepared students by rededicating a section of General Chemistry I
- reduced the size of our teaching laboratories with a goal of 24 or fewer students per section, as recommended by our national certification and our external consultant, for pedagogical and safety reasons
- refocused our capstone (a paper, seminar and exam) by adding rubrics to codify expectations and by instituting our discipline specific capstone (American Chemical Society Diagnostic of Undergraduate Chemical Knowledge)
- instituted a senior survey both capture post-graduation plans as well as thoughts on program using a SALG (Student Assessment of Learning Gains) as well as an SII (Strengths, Improvements, Insights) too.

What was the impetus for these changes (surveys, course evaluations, student performance, departmental conversation, conversations with advisees, etc)?

Conversations with students and colleagues
Comparison to aspirant programs
External consultant report
American Chemical Society- Committee on Professional Training revised guidelines

- Have you made any changes to the ways your department gathers information about student development (for example, surveys, rubrics, common exams, alumni feedback, etc)?

Yes. Rubrics, Diagnostic of Undergraduate Chemistry Knowledge (DUCK) exam, Facebook page.

Looking forward

- For next year, what key area of student development would your department like to focus on? How will you gather information to help you evaluate the current state of your area of focus in order to make evidence-based decisions?

Continue developing rubrics for senior papers and oral presentations

Senior survey

Achieving departmental goals for students

- Consider your department learning goals. Do they accurately reflect your desired student outcomes? If you have not already done so, please explicitly consider where in your curriculum you achieve your goals for student learning. This can be done through a curricular map or in the form of a narrative.

  Yes. We have a curricular map

- What role does your Capstone play in achieving your departmental learning goals? How do you know that students are achieving these goals through the Capstone experience?

Rubrics and whole-department assessment of parts.

- In what ways does your department provide guidance in the effective use of research and information resources?

In multiple courses beginning in General Chemistry labs, and Advanced Analytical Chemistry, Advanced Inorganic Chemistry, Environmental Analysis, Independent Research, ATEC lab, senior capstone experience.

Your department's role in achieving the college's shared goals for students

- How do your departmental learning goals fit into the new Vision for Student Learning Goals? Which parts of the VSL does your department most contribute to? If you would like to do a mapping, you may wish to use the attached template for VSLG mapping.

See map.

Assessment Audit: Departmental Learning Goals versus Individual Course Goal

This chart uses a 3 point scale to indicate the correlation between the departmental learning goals and individual courses:

N/A Not Applicable | 1 Slightly Important | 2 Moderately Important | 3 Very Important

Department Goals: / Courses:	Acquire fact-based knowledge	Execute Exp'ts / Design Exp'ts	Develop critical thinking skills to assess and assemble facts & data	Work effectively in groups	Communicate chemistry effectively	Assess the ethics of work
Chem 100 Concepts	3	N/A	2	1	3	3
Chem 101 Chem of Envir.	3	2 / 1	3	3	3	3
Chem 101 Lab	1	3 / 1	3	3	1	1
Chem 110 &120 Gen Chem	3	N/A	2	1	2	1
Gen Chem Lab	2	2 / 1	3	2	2	1
Chem 150 Adv. Gen Chem	3	N/A	2	1	1	1
Chem 150 Lab	2	2 / 1	3	2	2	1
Chem 240 & 250 Organic	3	N/A	3	N/A	2	2
Organic Lab	3	3 / 1	3	2	2	3
Chem 280 Env. Analysis	3	NA / 3	3	2	3	3
Env. Anal. Lab	2	3 / 3	3	3	2	1
Chem 310 & 320 P-Chem	3	N/A	3	1	3	1
ATC Lab	2	3 / 3	3	3	3	2
Chem 320 lab	3	3 / 1	3	3	2	1
Chem 330 Biochem.	3	3 / 3	3	2	2	2
Biochem Lab	3	3 / 1	3	3	2	1
Chem 335 Adv BioChem	3	N/A	3	1	2	1
Chem 340 Adv. Inorg.	3	N/A	3	1	2	2
Chem 350 Adv. Anal.	3	N/A / 1	3	2	3	2
Chem 410 Adv. P-Chem	3	2 / 2	3	1	2	1
Chem 450 Fac. Spon. Res.	2	3 / 3	3	2	3	3
Senior Capstone	3	N/A	3	N/A	3	2

Chemistry Departmental Assessment Meeting: Report

Please fill out this report based on your department's conversation and return via e-mail to Megan Leonard or Sasha Pfau by March 31, 2017.

Summary of past decisions

Please summarize up to three departmental changes made since the last HLC visit (08-09) the impetus for those changes and any changes to information gathering about student development.

New course in Environmental Analysis (2010) – impetus was weakened student outcomes on capstone exam (the forerunner to this course was lost in the conversion to semesters in 2002), discipline specific certification (American Chemistry Society) requires introductory/advanced course pairings, and contribute to strengthen the chemistry concentration in Environmental studies program (2010-2011).

New course in Accelerated Chemistry (2013) – impetus was to serve our strongest incoming students who were bored in the normal two semester sequence, but were not prepared for the level of independent work in the sophomore organic courses.

Capstone re-organization (2014-2016) - the three components are a content exam, research paper and seminar presentation. The impetus was to maintain the rigor of our capstone (we now use a discipline specific, scenario-based exam) and to maintain consistency on the assessment of papers and presentations by writing and adopting rubrics for the paper and the seminar presentation.

Student Assessment Data Two Student Surveys: impetus was a lack of the student voice in our assessment. We added the SALG (Student Assessment of Learning Gains, 2012) and an SII (Strength, Improvements, Insights, 2012) for our program graduates.

Looking forward

Please summarize your department's focus for student development and your evaluation methods.

Recently our capstone has been on the forefront of our efforts. We are turning towards an alumni survey since we know the test of a strong education is not just the first position (usually representative of content knowledge) but how well the education has taught skills that can grow through many changes of positions. In 2016-2017 we have been updating our graduate data base with the intention of writing a survey for distribution next year for graduates within 5-15 years of graduation.

Achieving departmental goals for students

Please explain how your departmental curriculum achieves your student learning goals, being sure to include the Capstone. Feel free to attach a curricular map or other supporting documents. Summarize the ways your department provides guidance in the effective use of research and information resources.

Chemistry Department Learning Goals are designed to help undergraduate students to:

1. acquire the fact-based knowledge necessary to understand chemistry as citizens and practice it as scientists,
2. design and execute laboratory experiments,
3. develop the critical thinking skills necessary to assess and assemble facts and data,
4. work effectively individually and in groups,
5. communicate chemistry effectively in written and oral forms, and
6. assess the ethical implications of their work and its impact on our society and environment.

See attached curricular map.

Your department's role in achieving the college's shared goals for students

Please explain how your departmental learning goals contribute to the Vision for Student Learning Goals. Feel free to attach a map or other supporting documents.

See attached curricular map.