***STUDENT LEARNING ASSESSMENT PROGRAM SUMMARY FORM AY 2016-2017***

Please complete a separate worksheet for each academic program (major, minor) at each level (undergraduate, graduate) in your department. Worksheets are due to CASA this year by **June 15, 2017**. Worksheets should be sent electronically to [kjsanders@eiu.edu](mailto:kjsanders@eiu.edu) and should also be submitted to your college dean. For information about assessment or help with your assessment plans, visit the Assessment webpage at  [http://www.eiu.edu/~assess/](http://www.eiu.edu/%7Eassess/) or contact Karla Sanders in CASA at 581-6056.

**Degree and Program Name:**

M.S. in Chemistry

**Submitted By:**

Rebecca Peebles, Chair

# PART ONE

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| What are the learning objectives? | How, where, and when are they assessed? | What are the expectations? | What are the results? | Committee/ person responsible? How are results shared? |
| 1.Students will learn fundamental principles at an advanced level in selected areas in chemistry | a) Set of placement exams in four sub-disciplines: Analytical, Inorganic, Organic, and Physical Chemistry; b) Department of Chemistry Evaluation of Student Performance on the M.S. Comprehensive Exam;  c) literature seminar given in CHM 5001. | a) 100% of incoming students eligible to enroll in chemistry graduate core courses: Bio- Analytical, Inorganic, Organic, and Physical; b) 100% of students with scores ≥ 3 (competent, 4 point scale) on knowledge item; c) 100% of students with average rating for chemistry content items on evaluation instrument ≥ 2 (3 point scale). | a) (of 4 students FY17), Bioanal: 100%, Inorg: 75%, Org: 50%, Phys: 75%; b) Data not presently available due to Grad Coordinator illness and in-progress transfer of duties; c) (of 3 students FY17) 100%, overall average = 2.31 | 1. Graduate Committee; 2. Student’s thesis committee, research advisor and Graduate Coordinator; c) course instructors, department faculty.   Department Chair and Graduate Committee discuss results. |
| 2. Students will be able to conduct original research | a) Department of Chemistry Evaluation of Student Performance on the M.S. Comprehensive Exam; b) Department of Chemistry Evaluation of Student Performance on the M.S. Thesis | a) 100% of students with scores ≥ 3 (competent) on independent research item; b) 100% of students with scores  ≥ 3 (competent) on independent research item. | 1. Data not presently available due to Grad Coordinator illness and in- progress transfer of duties; 2. Data not presently available due to Grad Coordinator illness and in- progress transfer of duties | a) Student’s research advisor and thesis committee; b) student’s thesis committee.  Department Chair and Graduate Committee discuss results |
| 3. Students will be able to communicate technical material effectively in speaking and writing | a) CHM 5001: seminar evaluation; b) Department of Chemistry Evaluation of Student Performance on the M.S. Comprehensive Exam; c) | 1. 100% of students with an average rating ≥ 2 (3 point scale) for presentation items; 2. 100% of students with scores ≥ 3 (competent) on | a) (of 3 students FY17) 100%, overall average = 2.24; b) Data not presently available due to Grad Coordinator illness and in- | a) Course instructors, department faculty; b) department faculty; c) Student’s thesis committee, research |

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|  | Department of Chemistry Evaluation of Student Performance on the M.S. Thesis;  d) student research presentations at conferences. | communication item; c) 100% of students with scores ≥ 3 (competent) on communication item; d) 75% or more of students give a conference presentation by graduation. | progress transfer of duties;  c) Data not presently available due to Grad Coordinator illness and in- progress transfer of duties; d) 80% | advisor and Graduate Coordinator; d) student’s thesis advisor, Graduate Coordinator.  Department Chair and Graduate Committee discuss results. |
| 4. Students will be able to properly utilize chemical information sources | a) CHM 5001: seminar evaluation; b) Department of Chemistry Evaluation of Student Performance on the M.S. Thesis;  c) assignment in CHM 5002 (use of electronic databases to find relevant chemical information). | a) 100% of students with scores ≥ 2 (3 point scale) on literature item; b) 100% of students with scores ≥ 3 (4 point scale) on chemical information item; c) 100% of students successfully complete assignment. | a) (of 3 students FY17) 100%, overall average = 2.27; b) Data not presently available due to Grad Coordinator illness and in- progress transfer of duties; c) 100% | a) Course instructors, department faculty; b) Student’s research advisor and thesis committee; c) course instructors.  Department Chair and Graduate Committee discuss results |
| 5. Students will be able to critically analyze a breadth of chemical problems & experimental results. | a) Department of Chemistry Evaluation of Student Performance on the M.S. Comprehensive Exam; b) Department of Chemistry Evaluation of Student Performance on the M.S. Thesis;  c) CHM 5003: written critique of a published paper; d) CHM 5180: open ended lab assignment in which students develop two analytical methods for quantifying a chemical substance and compare these methods; e)  CHM 5420: ‘chalk-talk’ based on a topic in a current organic chemistry journal article; f) CHM 5360: presentation of research paper on supramolecular chemistry; g) CHM 5210: completed homework assignments, research paper, or presentation of research paper. | a) 100% of students with scores ≥ 3 (competent) on critically analyze item; b) 100% of students with scores ≥ 3 (competent) on critically analyze item; c) 100% of students successfully complete this activity; d-f) 50% of students earn a grade of 90% or higher on selected activity;  g) 50% of students earn a cumulative grade of 90% or higher on all graded HW assignments. | 1. Data not presently available due to Grad Coordinator illness and in- progress transfer of duties; 2. Data not presently available due to Grad Coordinator illness and in- progress transfer of duties; c) 100%; d) CHM5180 was not offered in FY17 – next data available from SP18; e) 44%; f) 100%; g) CHM5210 was last offered in FA15 – next data available from FA17, although a related course, CHM5300, will be substituted. | a) Student’s thesis committee, research advisor, and Graduate Coordinator; b) Student’s research advisor and thesis committee; c) –g) course instructors.  Department Chair and Graduate Committee discuss results |

# PART TWO

Describe what your program’s assessment accomplishments since your last report was submitted. Discuss ways in which you have responded to the CASA Director’s comments on last year’s report or simply describe what assessment work was initiated, continued, or completed.

The majority of quantitative measures based on grades or examination continue to meet our expected standards, with the exception of graduate student entrance exams. As stated in our last MS assessment report, it would be beneficial to correlate students’ performance to their academic backgrounds and experience. It might be possible to accomplish this by instituting a simple survey that students complete upon starting the program. The exams used in 1.a) provide of more an indication of a student’s background than their learning of principles at a graduate level. Another way to transform this into a more meaningful assessment measure might be to ask students to retake exams before leaving so that the degree of improvement could be monitored.

Due to the retirement of our graduate coordinator, we were unable to assemble data from the Evaluation of Student Performance on the M.S. Comprehensive Exam and Evaluation of Student Performance on the M.S. Thesis this year – the data will be available, so we will incorporate it into next year’s assessment. There has recently been considerable discussion among faculty about the difficulty of recovering completed evaluation forms from thesis committee members, and this is an area that needs discussion in order to get more complete data sets in this respect. Previous assessment report feedback has suggested that we need a way to incorporate results from the Thesis and Comprehensive Exam evaluations to improve our graduate students’ learning experience at EIU, and this is something that will be discussed by the Graduate Committee, and then the faculty, during the coming year. One simple solution that has not been implemented because of the lack of returned evaluation forms is to ensure that forms are shared with both the supervising faculty member and the student.

# PART THREE

Summarize changes and improvements in **curriculum, instruction, and learning** that have resulted from the implementation of your assessment program. How have you used the data? What have you learned? In light of what you have learned through your assessment efforts this year and in past years, what are your plans for the future?

The Graduate Committee has, for several years, been working on developing an exit survey that would elicit feedback from graduating MS students. Several graduating students have suggested this themselves, in addition to feedback received on assessment reports. The Graduate Committee does have a draft of such a survey and they will be encouraged to finalize implementation of this during FY18. It would also be useful to implement alumni surveys, similar to those sent to our undergraduate alumni.