***STUDENT LEARNING ASSESSMENT PROGRAM SUMMARY FORM AY 2018-2019***

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 17, 2019**. 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) One student took entrance exams, Bioanal: 100%, Inorg: 100%, Org: 0%, Phys: 100%; b) (of the 4 students in AY18-19) 100%; c) (of 4 students AY 18-19) 100%, overall average = 2.5 | 1. Graduate Committee; sub-discipline faculty 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, 4 point scale) on independent research item; b) 100% of students with scores  ≥ 3 (competent) on independent research item. | 1. (of 4 students graduated in AY 18-19) 100% 2. (of 4 students graduated in AY18-19); 100% | 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 4 students AY 18-19) 100%, overall average = 2.5; b) (of 4 students graduated in AY 18-19); 100% | 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. | c) (of 4 students graduated in AY 18-19) 100% d) (or 4 students graduated in AY 18-19) 100% | 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 4 students AY 18-19) 100%, overall average = 2.5; b) (of 4 students graduated in AY 18-19) 100%; c) of the 2 students in AY 18-19) 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. (of 4 students graduated in AY 18-19); 100%; (b)   (of 4 students graduated in AY18-19); 100%; c) 100%; d) CHM5180 was not offered in AY 18-19 – next data available from SP20; e) (of the 5 students in AY 18-19) 80%; f) (of the 4 students in AY 18-19) 100%; g) CHM5210 was last offered in FA17 – next data available from FA20 from the same course or a similar substituent course due to faculty turnover. | 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. AY18-19 experienced low enrollment due to visa restrictions for foreign graduate students. However, AY19-20 is expected to have a full enrollment (8-9 students) to collect meaningful data. The exams used in 1.a) provide more of 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 to measure the effectiveness of the curriculum and other program offerings might be to ask students to retake exams before leaving so that the degree of improvement to could be monitored.

As reported in the last Assessment Summary, the difficulty of recovering completed evaluation forms from thesis committee members continues. This is an area that needs committee and administrative (Chairperson) level discussion to get more complete data sets. To ensure collection of forms, we may share the form with both the research advisor and the student and request the research advisor to return the faculty evaluation forms to complete the Certification of the Comprehensive Knowledge for the student. The graduate committee will discuss this option and make a collective decision.

# 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 coordinator is aware that prior to his appointment in FA2017, the Graduate Committee had 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 will draft a survey to implement during AY 19-20.