

Program-Level Assessment: Annual Report

Program Name (no acronyms): Chemistry MA

Department: Chemistry

Degree or Certificate Level: Graduate

College/School: Science & Engineering

Date (Month/Year): September 2022

Assessment Contact: Marvin Meyers

In what year was the data upon which this report is based collected? 2021-2022

In what year was the program's assessment plan most recently reviewed/updated? 2018

Is this program accredited by an external program/disciplinary/specialized accrediting organization? No

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please list the full, complete learning outcome statements and not just numbers, e.g., Outcomes 1 and 2.)

This is Year 2 of a three year cycle. The Outcomes 2 and 4 were evaluated according to the program assessment plan.

Outcome 1: Demonstrate advanced level knowledge in both (i) synthesis and materials chemistry and (ii) analytical and physical chemistry methods, with a higher level of knowledge expected in the student's area of focus.

Outcome 2: Use standard search tools and retrieval methods to obtain information about a topic, substance, technique, or an issue relating to chemistry and assess relevant studies from the chemical literature.

Outcome 3: Communicate scientific findings from literature in written publications and oral presentations.

Outcome 4: Apply learned chemical practices and theories to proposed problems.

Outcome 5: Adhere to accepted ethical and professional standards in chemistry.

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe the artifacts in detail and identify the course(s) in which they were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

For Outcome 2, there were no MA students enrolled in courses identified in our assessment plan 2021-2022, so no data could be collected.

For Outcome 4, using a scale of 1 to 4 (1 = Poor, 2 = Fair, 3 = Good, 4 = Excellent), the overall score on the rubric for the MA Oral Exam was used.

No courses were offered online. Madrid does not have a graduate program in Chemistry.

3. Assessment Methods: Evaluation Process

What process was used to evaluate the artifacts of student learning, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and **include them in/with this report document** (please do not just refer to the assessment plan).

Rubrics were used for all artifacts. These were completed by instructors for course work (Outcome 2), and MA mentor (Outcome 4).

4. Data/Results

What were the results of the assessment of the learning outcome(s)? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

For Outcome 2, there were no MA students enrolled in courses identified in our assessment plan 2021-2022, so no data could be collected.

For Outcome 4, using a scale of 1 to 4 (1 = Poor, 2 = Fair, 3 = Good, 4 = Excellent), the overall score on the rubric for the MS Thesis was used. There was only one MA graduate during 2021-22, so data was only collected on a single student.

| Student | Demonstrate advanced level of knowledge... | Apply learned chemical practices and theories to proposed problems | Communicate chemical topic effectively |
|---------|--|--|--|
| 1 | 3 | 3 | 3 |

Assessment for Outcome 4: Albeit a very limited sample set of 1, the student met our expectations.

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

The MA program is generally for part-time students who may be far removed from their undergraduate courses and have obligations in terms of work and/or family that impact their preparation for courses. Due to the small number of students in this program, it is difficult to do detailed breakdowns. We typically see variations in achievement for these students.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

The results and findings have been emailed to our faculty and discussed in dept administrative meeting.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites
- Course sequence
- New courses
- Deletion of courses
- Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

- Student learning outcomes
- Artifacts of student learning
- Evaluation process
- Evaluation tools (e.g., rubrics)
- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of these findings.

No specific actions are being taken as a result of these findings.

If no changes are being made, please explain why.

Given the small number of students in this program, we instead consider the data for all of our graduate programs (MA, MS, and PhD) as students across these programs take the same courses. The overall assessment is that students are meeting and exceeding expectations for the assessed outcomes.

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data?

We have not made any specific changes to our program based solely on the assessment data for the MA program.

B. How has this change/have these changes been assessed?

N/A

C. What were the findings of the assessment?

N/A

D. How do you plan to (continue to) use this information moving forward?

As we see the MA program as a possible area of growth, we anticipate increased enrollment. We will consider how we can tailor our advising so that students in this program are able to follow a program that will provide them with the advanced knowledge that will most help them in their career paths.

Rubrics used for graduate program assessments:

MA Oral Exam Rubric:

https://docs.google.com/document/d/1Yk6Zoh9maj_iwk2DvyFjEpkrTyzM8SIt/edit?usp=sharing&oid=115269951254626488709&rtpof=true&sd=true