# UPAC Assessment Report

*Department of Gemology*
*BS Gemology*
*Submitted February 2021*

## Program Student Learning Outcomes

1. Students will be able to identify a gemstone
2. Students will be able to grade a gem
3. Students will be able to demonstrate knowledge of national and international laws regulating the mining and sale of gems

## Curriculum Map

| COURSE | SLO 1 | SLO 2 | SLO 3 |
|--------|-------|-------|-------|
| GEM 101 | I | | I |
| GEM 201 | | I | R |
| GEM 301 | R | | |
| GEM 401 | | | M |
| GEM 499 | M, A | M, A | A |

**I:** The SLO is introduced to students in this course.
**R**: The SLO is reinforced in this course
**M**: The SLO is mastered by students in this course
**A:** The SLO is assessed in this course

## Assessment 1: Identify 10 Gems

### Student Learning Outcome Assessed

SLO1: Students will be able to identify a gemstone

### Task

Each student in GEM 499 was given 10 gemstones and asked to identify them.

### Rubric

Each student was classified as either exceptional, proficient, satisfactory, or underdeveloped. The classification criteria are given below.

- Exceptional: All 10 gemstones were correctly identified.
- Proficient: Either 8 or 9 of the gemstones were correctly identified.
- Satisfactory: Either 5, 6, or 7 of the gemstones were correctly identified.
- Underdeveloped: Less than 5 of the gemstones were correctly identified.

### Benchmark

At least 85% of students are classified as at least satisfactory.

### Delivery

The task was part of a mid-term exam administered to all students in GEM 499 during the Fall 2022 and Fall 2023 semesters. The same 10 gems were used for this assessment as they were available for inspection on a central lab table. Only one section of GEM 499 was offered and the delivery was identical for all students.

### Results

Students received the following classifications

| Classification | Fall 2022 | Fall 2023 |
|---|---|---|
| Exceptional | 5/29 | 4/26 |
| Proficient | 9/29 | 6/26 |
| Satisfactory | 12/29 | 12/26 |
| Underdeveloped | 3/29 | 4/26 |

The aggregate rate of successful identification is given below.

| Gem | Fall 2022 | Fall 2023 |
|---|---|---|
| amber | 26/29 | 24/26 |
| beryl | 12/29 | 14/26 |
| chalcedony | 22/29 | 16/26 |
| coral | 15/29 | 18/26 |
| emerald | 18/29 | 14/26 |
| hessonite | 16/29 | 16/26 |

| lapis lazuli | 28/29 | 26/26 |
| moonstone | 5/29 | 15/26 |
| pearl | 29/29 | 25/26 |
| ruby | 18/29 | 15/26 |

## Analysis

The benchmark was met in both semesters as 90% and 92% of students were classified as at least proficient.  Students in the Fall 2022 course demonstrated less success in identifying moonstones than any other type.  This result demonstrated the need to devote more attention to the distinct properties of moonstone that relate to correct identification.

## Actions Taken

In the Fall of 2023, more attention was given in classroom lecture to the distinct properties of moonstone that relate to correct identification.  The aggregate rate of success improved significantly; moving from 5/29 in the Fall of 2022 to 15/26 in the Fall 2023.

## Assessment 2: Bureau of Land Management Mining Law

### Student Learning Outcome Assessed

Students will be able to demonstrate knowledge of national and international laws regulating the mining and sale of gems

### Task

Each student in GEM 499 was asked to describe the changes made in 1955 to the U.S. Bureau of Land Management Mining Law.

### Rubric

Each student was classified as either exceptional, proficient, satisfactory, or underdeveloped.  The classification criteria are given below.

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### Benchmark

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### Delivery

The task was part of the final exam administered to all students in GEM 499 during the Fall 2023.  There were two sections of GEM 499 taught by two different instructors that semester.  Each instructor agreed that this task would account for exactly 10% of their final exam and that both instructor's final exam would account for 30% of their overall course grade.

### Results

Students received the following classifications

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The aggregate rate of successful identification is given below.

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### Analysis

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### Actions Taken

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