

Program-Level Assessment: Annual Report

Program Name (no acronyms): Cannabis Science and Operations

Department:

Degree or Certificate Level: Undergraduate

College/School: School for Professional Studies

Date (Month/Year): September/ 2023

Assessment Contact: Stacy Godlewski

In what year was the data upon which this report is based collected? 2022-2023

In what year was the program’s assessment plan most recently reviewed/updated? 2022

Is this program accredited by an external program/disciplinary/specialized accrediting organization or subject to state/licensure requirements? NO

If yes, please share how this affects the program’s assessment process (e.g., number of learning outcomes assessed, mandated exams or other assessment methods, schedule or timing of assessment, etc.):

1. Student Learning Outcomes

Which of the program’s student learning outcomes were assessed in this annual assessment cycle? (Please provide the complete list of the program’s learning outcome statements and **bold** the SLOs assessed in this cycle.)

1. Students will be able to apply knowledge of plant science, soil nutrients, and cultivation practices to the growing of cannabis (**CSO 1**).
 2. Explain the engineering principles behind and processes employed in the manufacturing of cannabis products (**CSO 2**).
 3. Explain the known pharmacological principles of cannabis (**CSO 3**).
 4. Explain the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary (**CSO 4**).
 5. Describe how cannabis products impact society (history, community, society, economic) (**CSO 5**).
- Note, CSO 1 was not correctly listed in course CSO 1000 therefore, the learning outcome data above does not include results for this outcome in this course, which ran in Fall 1, 2022, Spring 1, 2023 and Summer 1 2023.

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, identify the course(s) in which they were collected, and if they are from program majors/graduates and/or other students. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

All courses were offered online.

Course Name & Artifact Used

CSO 1000: Cannabis Fundamentals: Growing, Manufacturing and Dispensing – Growth Journal and Cloning Project

CSO 1500: Cannabis Plant Science and Cultivation – Presentation: Cultivation Plan

CSO 1600: Cannabis Extraction and Product Production – Presentation: Create Your Own Product

CSO 1700: Cannabis Compliance and Dispensing – Create a Dispensary Plan

CSO 2000: Create an infographic on the current state of research and review this research, student chooses 1 of 4 scenarios

CSO 2960: Cannabis Capstone Experience – Student chooses a research topic as it relates to the program – Research paper and video presentation

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).

Instructors have outcomes set up and added to their artifact rubric via Canvas outcomes. At the end of their courses, a Canvas Outcomes report was run to collect data about student performance and artifacts used to assess learning outcomes. Data was used to analyze and make changes as needed to assessments of learning outcomes.

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)?

CSO 1 – 71.64% of students “Meets Standard - student can apply knowledge of growing cannabis in ALL the following areas: plant science, nutrients, and cultivation practices” as discussed in this course.

CSO 2 – 54.68% of students “Meets Standard – student can explain the engineering principles behind, and processes employed, in the manufacturing of cannabis products.

CSO 3 – 73.49% of students “Meets Standard – student can explain the known pharmacological principles of cannabis.

CSO 4 – 70.18% of students “Meets Standard – student can explain the roles, responsibilities and legal requirement used to operate and sustain a cannabis dispensary.

CSO 5 – 71.46% of students “Meets Standard – student can describe how cannabis products impact society (history, community, society, economic).

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you? Address both a) learning gaps and possible curricular or pedagogical remedies, and b) strengths of curriculum and pedagogy.

An average of 68.29% of students have met the standard of learning outcomes.

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

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

After each term, course instructors review grades and determine if the course artifact was impactful to the learning outcomes.

In fall 2, 2022, **CSO 1000** – Cannabis Fundamentals course reviewed their weekly modules and weekly growth journals to make sure that students were getting the most out of their course work. The instructors made the decision to rework the growth journals so that there were more in-depth discussions surrounding the daily maintenance and growth of their tomato plants.

After review **of the CSO 1700** – Cannabis Compliance and Dispensing course final project, it looked as if the final project of creating a patient profile was like the final project that existed in the CSO 2000 – Pharmacological Properties course which was to create educational material designed for a specific patient with a specific ailment. After conversations with instructors from both courses, it was decided to edit CSO 1700 weekly modules and projects. This course is now divided up into two sections. Weeks 1-4 focus on the compliance side of running a dispensary. There is now a small project pertaining to weeks 1 – 4 and again for weeks 5-8.

During discussions with the **CSO 2000 and 1700** instructors, it became clear that the course sequence was not advantageous to the success of our students. Originally, the CSO 1700 course was taken first and then they moved on to CSO 2000. Since students in CSO 1700 are asked to address medical ailments and treatments with medical cannabis, it became clear that students were not yet ready to make pharmacological assessments for patients since they had not yet completed the CSO 2000 course. With approval from the SPS curriculum committee, the CSO 1700 course was moved down in the course list and students are now required to take CSO 2000 before CSO 1700. This change will not take place until Fall 1 of 2022.

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.

As a result of our findings, changes to the artifacts of student learning and frequency of data collection have been implemented in the CSO 1000 course as stated in 6A.

As a result of our review of CSO 1700, the course instructors in conjunction with the Program Director, have edited the delivery of the materials in this course and have divided a section of the course into 4 weeks of cannabis operation and 4 weeks of patient-focused "budtending" training. There will now be two artifacts of student learning that are being analyzed in the course.

As a result of the CSO 2000 and 1700 discussions, changes to the sequence of curriculum has been implemented to further student success.

If no changes are being made, please explain why.

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 previous assessment data**?

The program has changed the sequence of one course due to the fact that students were not confident in completing the final project.

CSO 1700 has also implemented the use of a free POS platform so students have a more hands-on experience that would prepare them to work in or manage a dispensary.

CSO 2000 removed the course text and pivoted to a text that is used earlier in the program sequence. The new text has been a better resource for students.

B. How has the change/have these changes identified in 7A been assessed?

- Students have 4 assignments that related directly to the POS platform.
- In CSO 2000, assignments and readings have been updated to related directly to the new textbook.

C. What were the findings of the assessment?

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

IMPORTANT: Please submit any assessment tools (e.g., artifact prompts, rubrics) with this report as separate attachments or copied and pasted/appended into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document. Thank you.