SAINT LOUIS UNIVERSITY.

Program-Level Assessment: Annual Report

Program Name (no acronyms): Cannabis Science and Operations	Department: School for Professional Studies
Degree or Certificate Level: Undergraduate Certificate	College/School: School for Professional Studies
Date (Month/Year): August/2022	Primary Assessment Contact: Stacy Godlewski
In what year was the data upon which this report is based collected? Academic Year 2021-2022	
In what year was the program's assessment plan most recently reviewed/updated? 2021	

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

   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 requirement used to operate and sustain a cannabis dispensary (CSO 4).
   5. Describe how cannabis products impact society (history, community, society, economic) (CSO 5).

2. **Assessment Methods: Artifacts of Student Learning**
   Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please identify the course(s) in which these artifacts were collected. 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

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.

   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 – 80.52% 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 – 72.07% of students "Meets Standard – student can explain the engineering principles behind, and processes employed, in the manufacturing of cannabis products.
CSO 3 – 81.6% of students "Meets Standard – student can explain the known pharmacological principles of cannabis.
CSO 4 – 80.86% of students "Meets Standard – student can explain the roles, responsibilities and legal requirement used to operate and sustain a cannabis dispensary.
CSO 5 – 70.47% 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?

An average of 77.10% of students have met the standard of learning outcomes.

6. **Closing the Loop: Dissemination and Use of <u>Current</u> Assessment Findings**

A. When and how did your program faculty share and discuss these 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 onto 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 dived 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.

Changes were not made to the CSO 1500 and CSO 1600 courses as assignments/projects and final project are correctly assessing the students' knowledge of the topics presented in those courses.

7. **Closing the Loop: Review of <u>Previous</u> Assessment Findings and Changes**
   A. What is at least one change your program has implemented in recent years as a result of 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.

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

   This changed has not had time to be assessed at this point.

   C. What were the findings of the assessment?

   N/A

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

   N/A

IMPORTANT: Please submit any assessment tools (e.g., rubrics) with this report.