Program-Level Assessment Plan



Program: Cannabis Science and Operations	Degree Level (e.g., UG or GR certificate, UG major, master's program, doctoral program): UG Certificate
Department:	College/School: School for Professional Studies
Date (Month/Year): June 2021	Primary Assessment Contact: Stacy Godlewski

Note: Each cell in the table below will expand as needed to accommodate your responses.

#	Student Learning Outcomes	Curriculum Mapping	Assessment Methods	
	What do the program faculty expect all students to know or be able to do as a result of completing this program? Note: These should be measurable and manageable in number (typically 4-6 are sufficient).	In which courses will faculty intentionally work to foster some level of student development toward achievement of the outcome? Please clarify the level at which student development is expected in each course (e.g., introduced, developed, reinforced, achieved, etc.).	Artifacts of Student Learning (What)1. What artifacts of student learning will be used to determine if students have achieved this outcome?2. In which courses will these artifacts be collected?	 Evaluation Process (How) 1. What process will be used to evaluate the artifacts, and by whom? 2. What tools(s) (e.g., a rubric) will be used in the process? Note: Please include any rubrics as part of the submitted plan documents.
1	Students will be able to apply knowledge of plant science, soil nutrients, and cultivation practices to the growing of cannabis.	CSO1000, CSO1500, CSO2960	 An assessment survey will be completed by each instructor at end of course in which this program learning outcome exists. This survey will inquire about: A) Specific artifact(s) used to demonstrate achievement, B) Strengths/weakness in student performance towards this outcome, C) Number of students who achieved/partially achieved/not achieved the outcome, D) Suggestions on potential changes to the curriculum/pedagogies/artifacts/assessment methods. Exit survey completed by students at end of certificate. 	Every other year, typically in the spring. The program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make changes to pedagogy and/or curriculum. Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward.

2	Explain the engineering principles behind and processes employed, in the manufacturing of cannabis products.	CSO1000, CSO1600, CSO2960	 An assessment survey will be completed by each instructor at end of course in which this program learning outcome exists. This survey will inquire about: A) Specific artifact(s) used to demonstrate achievement, B) Strengths/weakness in student performance towards this outcome, C) Number of students who achieved/partially achieved/not achieved the outcome, D) Suggestions on potential changes to the curriculum/pedagogies/artifacts/assessment methods. Exit survey completed by students at end of certificate. 	Every other year, typically in the spring. The Program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make changes to pedagogy and/or curriculum. Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward.
3	Explain the known pharmacological principles of cannabis.	CSO1000, CSO1700, CSO2960	 An assessment survey will be completed by each instructor at end of course in which this program learning outcome exists. This survey will inquire about: A) Specific artifact(s) used to demonstrate achievement, B) Strengths/weakness in student performance towards this outcome, C) Number of students who achieved/partially achieved/not achieved the outcome, D) Suggestions on potential changes to the curriculum/pedagogies/artifacts/assessment methods. Exit survey completed by students at end of certificate. 	Every other year, typically in the spring. The Program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make changes to pedagogy and/or curriculum. Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward.
4	Explain the roles, responsibilities and legal requirement used to operate and sustain a cannabis dispensary.	CSO1000, CSO1700, CSO2000 CSO2960	1. An assessment survey will be completed by each instructor at end of course in which this program learning outcome exists. This survey will inquire about: A) Specific artifact(s) used to demonstrate achievement, B) Strengths/weakness in student performance towards this outcome, C) Number of	Every other year, typically in the spring. The Program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make

			students who achieved/partially achieved/not achieved the outcome, D) Suggestions on potential changes to the curriculum/pedagogies/artifacts/assessment methods. 2. Exit survey completed by students at end of certificate.	changes to pedagogy and/or curriculum. Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward
5	Describe how cannabis products impact society (history, community, society, economy).	CSO1000, CSO 1500, CSO1600, CSO1700, CSO2000, CSO2960	 An assessment survey will be completed by each instructor at end of course in which this program learning outcome exists. This survey will inquire about: A) Specific artifact(s) used to demonstrate achievement, B) strengths/weakness in student performance towards this outcome, C) Number of students who achieve / partially achieved/not achieved the outcome, D) Suggestions on potential changes to the curriculum/pedagogies/artifacts/assessment methods. Exit survey completed by students at end of certificate. 	Every other year, typically in the spring. The Program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make changes to pedagogy and/or curriculum. Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward

Use of Assessment Data

1. How and when will analyzed data be used by program faculty to make changes in pedagogy, curriculum design, and/or assessment practices?

Every other year, typically in the spring. The Program Director in cooperation with the full-time and adjunct faculty will analyze assessment data and make changes to pedagogy and/or curriculum.

Program Directors will follow up on action items from the previous year to determine impact and possible refinements or enhancements moving forward

2. How and when will the program faculty evaluate the impact of assessment-informed changes made in previous years? See answer to number 1.

Additional Questions

1. On what schedule/cycle will program faculty assess each of the program's student learning outcomes? (Please note: It is <u>not recommended</u> to try to assess every outcome every year.)

This plan will be reviewed annually to ensure it continues to meet the program's needs. If a given learning outcome indicated areas in need of focused assessment, especially as it relates to one or more courses within the program or a foundational competency, then the schedule may be altered as needed. As SPS programs continually evolve to meet changing market needs, this assessment plan is dynamic and subject to change as the program evolves and new programs are offered

2. Describe how, and the extent to which, program faculty contributed to the development of this plan.

The Program Director in cooperation with the full-time and adjunct faculty are involved in the development of the courses and their application to each program learning outcome within the plan. These faculties are highly invested in ensuring that course projects and other associated artifacts are created in ways that student performance toward the learning outcomes can be distinguished and evidence towards achievement reported.

IMPORTANT: Please remember to submit any rubrics or other assessment tools along with this plan.

Final Project (CSO 1000)

	F	inal Project (O	CSO 1000)			
Criteria	Ratings					
This criterion is linked to a Learning Outcome Completeness	10 pts Outstanding Writing or Video: Fully answers all questions. Through responses shows understanding and respect for the growing process.	superficially Some answe	ovement Tideo: Answers a few questions , or with a simple, short response. rs demonstrate understanding and owing process.	Writing answer Respor	Expectations g or Video: Does not few or any questions. uses are limited and/or no se at all.	10 pts
This criterion is linked to a Learning Outcome Depth	10 pts Outstanding Writing or Video: All answers to all que demonstrate thoughtful self-reflection of growing tomato plants. Responses refle understanding the growing process and process entails. Answers demonstrate th has learned their own role and responsit growing a tomato plant.	of action in ct weeks of what the ne individual	5 pts Needs Improvement Writing or Video: Answers few q demonstrating some thoughtful se reflection of action in growing ton plants. Responses somewhat refle weeks of growing tomato plants. A are short and superficial.	lf- nato ct on the	0 pts Below Expectations Writing or Video: Does not answer few or any questions. Responses are limited and/or no response at all.	10 pts

	Fin	nal Projec	et (CSO 1000)			
Criteria			Ratings			Pts
This criterion is linked to a Learning Outcome Readability	10 pts Outstanding Writing or Video: Opinions, thoughts and ideas are clearly stated. No errors with writing style or mechanics (punctuation, spelling, and grammar).5 pts Needs Improvement Writing or Video: Opinions, thoughts and ideas are stated. Some errors with writing style or mechanics (punctuation, spelling, and grammar). 3-5 errors.0 pts Below Expectations Writing or Video: Difficult to understand 				10 pts	
This criterion is linked to a Learning Outcome Plant Photo and Selfie	10 pts Outstanding Clear photo(s) or video of tomato plants p Picture shows all plants. Separately a clear photo(s) or video of student with tomato p provided. Individual follows all directions final growth journal.	ar plants	5 pts Needs Improvement Photo(s) or video provided but be clearly seen. Separately a ph but the student with tomato plan seen. Individual did not clearly final growth journal.	oto(s) or video provided nts cannot be clearly	0 pts Below Expectations No photo or video provided.	10 pts

Criteria	briteria Ratings					
This criterion is linked to a Learning Outcome	10 pts5 pts0 ptsOutstandingNeeds ImprovementBelow Expectations					
Application	Student can apply knowledge and experience gained of growing tomatoes in ALL the following areas: plant science, nutrients, and cultivation practices – as discussed in this course.	Student can apply some knowledge of plant science, soil, nutrients and cultivation practices to the growing of tomatoes, but not all - as discussed in this course.	Student cannot or did not demonstrate being able to apply knowledge or experience of plant science, soil, nutrients and cultivation practices of growing tomatoes – as discussed in this course.	10 pt:		
This criterion is linked to a Learning						
Outcome CSO 1 Apply knowledge of plant science, soil, nutrients and cultivation practices to the	5 pts 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.	3 pts Approaches Standard - Student can apply some knowledge of plant science, soil, nutrients and cultivation practices to the growing of cannabis, but not all - as discussed in this course.	science, soil, nutrients and			
growing of cannabis. threshold: 3.0 pts						
Total Points: 50						

	CSO 1	500 Final I	Project			
Criteria		Rati	ngs			Pts
This criterion is linked to a Learning Outcome Completeness & Depth	20 pts Excellent Fully accounts for all p details: cultivation sys media/fertilizer; enviro lights; training method mother/propagation/v plan; genetics; breedi IPM plan	stem; onment; ds; eg/flower	12 pts Needs Improvemen Answers mo questions, be only on a superficial level.	st	0 pts Below Expectation Minimal or no connection to topic.	20 pts
This criterion is						
This criterion is linked to a Learning Outcome Presentation	20 pts Excellent Visual presentation: Presentation was easy to follow; audience can follow flow of ideas. The reader isn't distracted by any problems with grammar, spelling, and/or punctuation in presentation.	12 pts0 ptsNeeds ImprovementBelowPresentation is clear,Belowbut the connectionExpectationbetween ideas isproblems withdifficult to follow orideas, flow ornot defined.descriptions.Recurring problemsDifficult towith grammar,Difficult tospelling, and/orprocess orpunctuation onprocess orpresentation orincorrect usage ofterminology.Image: Content of the section of		20 pts		

	CSO 1	500 Final Project			
Criteria		Ratings			
This criterion is linked to a Learning Outcome Organization	20 pts Excellent The presentation is structured in a way that flows easily and naturally; the organization of the presentation is clear and logical; presentation is clearly structured in a manner consistent with the assignment.	12 pts Needs Improvement There may be some organizational issues; there may be several instances of poor transition from one idea to another; still contains all required elements.	0 pts Below Expectation Major organizational issues exist; presentation may lack several elements required by the assignment; there appears to be little flow among ideas.	20 pts	
This criterion is linked to a Learning Outcome Cultivation System Overview Video	20 pts Excellent Presentation clearly describes your ideal system, why you chose the combination of variables and reflection on the benefits of the system you chose.	12 pts Needs Improvement Video presentation outlines your ideal system but does not include reflection or description of reasoning behind choices or how they could impact each other.	0 pts Needs Improvement No presentation or presentation does not address project.	20 pts	

	CSO	1500 Final Project		
Criteria		Ratings		
This criterion is linked to a Learning Outcome Presentation Materials	20 pts Excellent Presentation is thoughtful, organized and clear.	12 pts Needs improvement Presentation, data and ideas are included but difficult to follow or poorly organized.	0 pts Below Expectation Presentation is missing or incomplete.	20 pts
This criterion is linked to a Learning Outcome CSO 1 Apply knowledge of plant science, soil, nutrients and cultivation practices to the growing of cannabis. threshold: 3.0 pts	5 pts 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.	3 pts Approaches Standard - Student can apply some knowledge of plant science, soil, nutrients and cultivation practices to the growing of cannabis, but not all - as discussed in this course.	0 pts Does Not Meet Standard - Student cannot apply knowledge of plant science, soil, nutrients and cultivation practices to the growing of cannabis– as discussed in this course.	

	CSO	1500 Final Project		
Criteria		Ratings		Pts
This criterion is linked to a Learning Outcome CSO 5 Describe how cannabis products impact society (history, community, economic and ethical). threshold: 3.0 pts	5 pts Meets Standard - Student can describe how cannabis products impact society in all the following areas: history, community, economic and ethical – as discussed in this course.	3 pts Approaches Standard - Student can describe how cannabis products impact society in one of the following areas: history, community, economic and ethical, but not all – as discussed in this course.	0 pts Does Not Meet Standard - Student cannot describe how cannabis products impact society (history, community, economic and ethical) – as discussed in this course.	
Total Points: 100	1			

CSO1600 Final Project Rubric

	(CSO1600 Final Project Rubric		
Criteria		Ratings		Pts
This criterion is linked to a Learning OutcomeRecipe	10 to >9.0 pts Excellent Fully answers all questions with sufficient depth and clarity.	9 to >4.0 pts Needs Improvement Most questions are addressed, but answers lack depth and/or clarity.	4 to >0 pts Below Expectations Recipe section is minimally addressed.	10 pt
This criterion is linked to a Learning OutcomeExtract	10 to >9.0 pts Excellent Fully answers all questions with sufficient depth and clarity.	9 to >4.0 pts Needs Improvement Most questions are addressed, but answers lack depth and/or clarity.	4 to >0 pts Below Expectations Extract section is minimally addressed.	10 pt
This criterion is linked to a Learning OutcomePotency	10 to >9.0 pts Excellent Fully answers all questions with sufficient depth and clarity.	9 to >4.0 pts Needs Improvement Most questions are addressed, but answers lack depth and/or clarity.	4 to >0 pts Below Expectations Potency section is minimally addressed.	10 pt

		O1600 Final Project Rubric				
Criteria	Ratings					
This criterion is linked to a Learning OutcomeMath	5 to >4.0 pts Excellent Math calculations are accurate and complete.	4 to >2.0 pts Needs Improvement Math calculations contain minor errors.		xpectations culations contain multiple	5 pts	
This criterion is linked to a Learning OutcomeSOP	 15 to >14.0 pts Excellent Fully answers all questions with sufficient depth and clarity. 			Below Expectations SOP section is minimally	15 pt	
This criterion is linked to a Learning OutcomeSourcing	10 to >9.0 pts Excellent Fully answers all questions with sufficient depth and clarity.	Needs Improvement Most questions are addressed, but answers		4 to >0 pts Below Expectations Sourcing section is minimally addressed.	10 pt:	
This criterion is linked to a Learning OutcomeShelf Life	10 to >9.0 pts Excellent Fully answers all questions with sufficient depth and clarity.	9 to >4.0 pts Needs Improvement Most questions are addressed, but ans lack depth and/or clarity.	swers	4 to >0 pts Below Expectations Shelf Life section is minimally addressed.	10 pt	

		O1600 Final Project Rubric			
Criteria	Ratings				
This criterion is linked to a Learning OutcomePackaging	10 to >9.0 pts9 to >4.0 pts4 to >0 ptsExcellentNeeds ImprovementBelow ExperiesFully answers all questions with sufficient depth and clarity.Most questions are addressed, but answers lack depth and/or clarity.Packaging se minimally addressed				10 p
This criterion is linked to a Learning OutcomeEarly Bird Bonus	5 pts 0 pts Full Marks No Marks Project submitted by 11:59 PM Central Time on Friday of Week 8. No				5 pts
This criterion is linked to a Learning OutcomeCSO 5 Describe how cannabis products impact society (history, community, economic and ethical). threshold: 3.0 pts	5 pts Meets Standard - Student can describe how cannabis products impact society in all the following areas: history, community, economic and ethical – as discussed in this course.	3 pts Approaches Standard - Student can describe how cannabis products impact society in one of the following areas: history, community, economic and ethical, but not all – as discussed in this course.	0 pts Does Not Meet 5 cannot describe products impact community, eco – as discussed in		

Criteria	Ratings		
This criterion is linked to a Learning OutcomeCSO 2 Explain the engineering principles behind and processes	5 pts Meets Standard - Student can explain all the engineering principles and processes used in	3 pts Approaches Standard - Student can explain some of the engineering principles and processes used in	0 pts Does Not Meet Standard - Student cannot explain the engineering principles and processes used in
employed in the manufacturing of cannabis products. hreshold: 3.0 pts	manufacturing of cannabis products – as discussed in this course.	manufacturing of cannabis products, but not all discussed in this course.	manufacturing of cannabis products discussed in this course.

CSO1700 Final Project PC Rubric Criteria Ratings Pts This criterion is linked to a Learning 20 pts 10 pts 0 pts **Below Expectations** 20 pts OutcomeJournal Excellent **Needs Improvement** Complete 8-week journal submitted. Most of the journal is submitted. Insufficient journal submitted. This criterion is linked to a Learning 20 pts $10 \, \text{pts}$ 0 pts **OutcomeReadability Below Expectations** Excellent **Needs Improvement** Opinions and ideas clearly stated. No Ideas are clearly stated, but grammar, 20 pts Difficult to understand due to errors with writing style or spelling, and/or punctuation errors are grammar, spelling, and/or writing mechanics. distracting. style. This criterion is linked to a Learning 20 pts 10 pts 0 pts OutcomeDispensary Excellent **Needs** Improvement **Below Expectations** 20 pts Provides substantive response to dispensary Dispensary policy response lacks Insufficient details for dispensary Policy policy question. full details. policy question. This criterion is linked to a Learning 20 pts 10 pts 0 pts **OutcomeEthical Below Expectations** Excellent **Needs Improvement** 20 pts Provides substantive response to ethical Ethical responsibilities response Responsibilities Insufficient details for ethical responsibilities question. lacks full details. responsibilities question.

CSO1700 Final Project PC (Patient Consultation) Rubric

	CSO1	700 F	inal Project PC Rubric		
Criteria	Ratings			Pts	
This criterion is linked to a Learning OutcomeKey Takeaways	20 pts Excellent Provides substantive response to key takeaways question.		10 pts0 ptsNeeds ImprovementBelow ExpectationsKey takeaways response lacks full details.Insufficient details for key takeaways question.		20 pts
This criterion is linked to a Learning OutcomeCSO 3 Explain the known pharmacological principles of cannabis. threshold: 3.0 pts	5 pts Meets Standard - Student can explain all the known pharmacological principles of cannabis, as discussed in this course.	Meets Standard - Student can explain all the known oharmacological principles of cannabis, as discussed in thisApproaches Standard - Student explain some of the known pharmacological principles of cannabis, but not all discussed		0 pts Does Not Meet Standard - Student cannot explain the known pharmacological principles of cannabis discussed in this course.	
This criterion is linked to a Learning OutcomeCSO 4 Explain the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary. threshold: 3.0 pts	5 pts Meets Standard - Student can explain all the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary – as discussed in this course.	expla respo used dispe	roaches Standard - Student can ain some of the roles, onsibilities and legal requirements to operate and sustain a cannabis ensary, but not all– as discussed in course.	0 pts Does Not Meet Standard - Student cannot explain the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary – as discussed in this course.	

	CSO17	700 Final Project PC Rubric			
Criteria	Ratings				
This criterion is linked to a Learning OutcomeCSO 5 Describe how cannabis products impact society (history, community, economic and ethical). threshold: 3.0 pts	5 pts Meets Standard - Student can describe how cannabis products impact society in all the following areas: history, community, economic and ethical – as discussed in this course.	3 pts Approaches Standard - Student can describe how cannabis products impact society in one of the following areas: history, community, economic and ethical, but not all – as discussed in this course.	0 pts Does Not Meet Standard - Student cannot describe how cannabis products impact society (history, community, economic and ethical) – as discussed in this course.		
Total Points: 100					

	CS0170	00 Final Project DB	P Rubric			
Criteria	Ratings					Pts
This criterion is linked to a Learning OutcomeCompleteness & Depth	20 pts Excellent Fully answers all questions, demonstrating thoughtful self- reflection.	10 pts Good Most questions are answered with depth.	5 pts Needs Improvemen All questions are any only on a superficial	swered, but	0 pts Below Expectations Minimal or no connection to the topic.	20 pts
This criterion is linked to a Learning OutcomeReadability	20 pts10 pts0 ptsExcellentNeeds ImprovementBelow ExpectationsOpinions and ideas clearly stated. No errors with writing style or mechanics.Ideas are clearly stated, but grammar, spelling, and/or punctuation errors are distracting.Difficult to understand due to grammar, spelling, and/or writing style.		20 pts			
This criterion is linked to a Learning OutcomeSOP	20 pts Excellent Provides fully outlined standard operat procedure for 2 business processes.		r ovement Ily outlined standard op or 1 business processes		0 pts Below Expectations Insufficient SOP provided.	20 pts

	CSO1	700 Final Project DBP Rubric		
Criteria	Ratings			
This criterion is linked to a Learning OutcomeLayout	20 pts Excellent Provides detailed design layout.	10 pts Needs Improvement Design layout lacks full details.	0 pts Below Expectations Insufficient details for design layout.	20 pts
This criterion is linked to a Learning OutcomeStaffing & Inventory Plan	20 pts Excellent Provides detailed staffing and inventory plan.	10 pts Needs Improvement Staffing and inventory plan lacks full details.	0 pts Below Expectations Insufficient details for staffing and inventory plan.	20 pts
This criterion is linked to a Learning OutcomeCSO 3 Explain the known pharmacological principles of cannabis. threshold: 3.0 pts	5 pts Meets Standard - Student can explain all the known pharmacological principles of cannabis, as discussed in this course.	3 pts Approaches Standard - Student can explain some of the known pharmacological principles of cannabis, but not all discussed in this course.	0 pts Does Not Meet Standard - Student cannot explain the known pharmacological principles of cannabis discussed in this course.	

	CSO170	0 Final Project DBP Rubric		
Criteria	Ratings			Pts
This criterion is linked to a Learning OutcomeCSO 4 Explain the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary. threshold: 3.0 pts	5 pts Meets Standard - Student can explain all the roles, responsibilities and legal requirements used to operate and sustain a cannabis dispensary – as discussed in this course.	the roles, responsibilities equirements used to d sustain a cannabisexplain some of the roles, responsibilities and legal requirements used to operate and sustain a cannabiscannot explain the roles, responsibilities and legal requirements used to operate and sustain a cannabis		
This criterion is linked to a Learning OutcomeCSO 5 Describe how cannabis products impact society (history, community, economic and ethical). threshold: 3.0 pts	5 pts Meets Standard - Student can describe how cannabis products impact society in all the following areas: history, community, economic and ethical – as discussed in this course.	3 pts Approaches Standard - Student can describe how cannabis products impact society in one of the following areas: history, community, economic and ethical, but not all – as discussed in this course.	0 pts Does Not Meet Standard - Student cannot describe how cannabis products impact society (history, community, economic and ethical) – as discussed in this course.	
Total Points: 100				